26th Annual Conference
European Society for Biomaterials

31st August – 3rd September 2014

Final Programme

https://twitter.com/ESB2014
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ESB 2014 it's liverpool

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A Warm Welcome from the Conference President

Welcome to the ESB 2014 and Liverpool. Thank you to everyone that has contributed to putting together our varied, exciting and thought provoking programme of open paper sessions, symposia and social events. For me, the purpose of the ESB annual meeting is to have a real place and point in our busy research lives to come together and "cut to the chase". In a multidisciplinary applied subject such as ours that stands as a keystone of the knowledgebase for future medicine to provide for healthy ageing and independent living, it is more important than ever to meet as a community ("scientific family") and present and discuss first-hand what we have done, what worked and what did not.

We've provided everything you need; the infrastructure, the timetable and the facilities so you can focus and concentrate on presenting and discussing the detail, the issues and the future. Enjoy yourselves, work hard we've a lot to do to realise our collective potential.

OUR future health needs us..... 16% of the population is born disabled, 84% at birth aren't disabled yet! If nothing else kills us on our journey through life, we will all age (more or less graciously) and with that comes, to put it bluntly disabilities. Mankind as a society can't afford for each of us to live longer and become increasingly disabled and more dependant. We as Biomaterials Scientists can address this, all of us know we can, the question is how fast can we do it? It'll be faster together.

Conference President: John Hunt

ESB President's Address

Dear all,

It is almost metronomic, is it not, the time with which the UK community hosts the ESB annual conference; London 2001, Brighton 2007 and this year another iconic city in Britain, Liverpool.

I have been reflecting on the trajectory of our Society in the last few years with its constant travelling from Country to Country. The Council has been changing its members, the conference delegates have been growing in numbers reaching out to colleagues around the world and opening its doors to an increasing number of young scientists.

But what's about our scientific progress? What's about the life of our patient's? What's the understanding or even the simple perception that the public, industry and policy makers have of us scientists and the work we do? Well! We may see the glass half full or half empty, but this is not the point. Interpreting and analysing the present it is important, but it is more important to set the vision for the future of our work as individual scientists, research groups, national societies and of course as ESB. And for scientists the vision for the future has to be ambitious, pioneering new ways of thinking, rooted in the service of our patients.

An honest, balanced assessment (I hope you share it) tells us that in all these years our biomaterials have reached significant achievements. Just to mention few of our exciting attainments, we have entered the world of the nano-scale, we have enabled the regeneration of tissues and developed theranostics. At the same time, the translation of this innovation is lacking behind partly because of our mistakes, certainly because of the constraints of the current political and economic environment. As ESB we have been working hard to improve the service and support to all our members, but we recognise that still a lot can be and has to be done for you and for your research. We look forward to explaining our plans at our General Assembly.

In this respect, I feel that the organisers of the ESB2014 have built a programme that is thought-provoking and challenging. Prof John Hunt and his colleagues have welcome us to Liverpool with a clear message that makes us thinking about the past while looking towards an ambitious future. The choice of the plenary and keynote speakers will bring on stage some of the best scientists of our generation. The translation day will help us assess the socio-economical impact of our innovation. Through presentations, chairing of sessions and their independently-organised workshops, the Young Scientist Forum will promote new ways of thinking and communicating.

I look forward to all this with great excitement and optimism. I congratulate Prof John Hunt for choosing such a fantastic venue and for structuring such a diversified programme. On behalf of the whole ESB Council I express my deepest gratitude to him and to his team for their kind hospitality and social programme.

Finally, I wish you all a great time in Liverpool where you will see old friends and meet new ones; a time when you will inspire and be inspired, a time of excitement for your research, and a time of new hopes for our patients.

ESB President: Matteo Santin

Acknowledgements

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GSK
St Georges Avenue
Weybridge
Surrey
KT13 0DE
United Kingdom

Mobile: +44 7920 568 730
Tel: +44 1932 82 2136
Johnathan.s.earl@gsk.com

www.gsk.com

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Book Signings at ESB2014

Professor David Williams

Essential Biomaterials Science

The latest book written by Professor David Williams, has just been published. You can meet the author and examine display copies of Essential Biomaterials Science in the coffee and lunch breaks after his talk on Monday 1st September in the exhibition / poster area of Hall 2 stand 142. The book is available from the publisher Cambridge University Press, www.cambridge.org, ISBN 9780521899086.

Copies purchased from the publisher and brought to conference may be signed by Professor Williams.

Please click on the image to the left to download a 20% discount coupon. Print out the coupon and bring it with you to the conference to receive a 20% discount.

Professor Larry Hench

Boing Boing the Bionic Cat

The award-winning *Boing-Boing the Bionic Cat* series of children's books written by Professor Larry Hench will be available for purchase and signing by the author during the meeting. Professor Hench will be in attendance at the stand on 2/9/14 from 11:00-14:00 for a dedicated session of book signing. You can meet the author and examine display copies in the coffee and lunch breaks in the exhibition / poster area of Hall 2 stand 64. A limited number of books will be broued ought to the conference (and the publisher will only be able to accept cash or cheques) but you may guarantee books at a special delegate rate by pre-ordering (credit cards accepted) from the publisher here: http://www.canofwormsenterprises.co.uk/goldaward

Online orders will be available to pick up and be signed by Professor Hench at the conference.

Conference Information

Venue

The Liverpool ESB2014 Conference will be hosted at ACC Liverpool, which combines the Liverpool Echo Arena and BT Convention Centre. ACC Liverpool is a unique facility – the only interlinking arena and convention centre complex under one roof in Europe. The Convention Centre and Arena stand in an iconic building on Liverpool's world famous Mersey waterfront, next to the Grade I listed Albert Dock, home to Tate Liverpool, the Beatles Story and numerous bars and restaurants. The address of the venue is:

BT Convention Centre (within ACC, Liverpool)
Kings Dock
Liverpool Waterfront
L3 4FP
Tel: +44 (0)151-475 8888

Registration

Registration will take place in the BT convention centre galleria Saturday-Wednesday. The registration desk will open:

Saturday August 30th	14:00 - 18:00	*The Speaker Preview Room will be open from 13:00*
Sunday August 31st	07:30 - 19:00	
Monday September 1st	07:30 - 19:30	
Tuesday September 2nd	07:30 - 18:30	
Wednesday September 3rd	07:30 - 17:00	

Poster Sessions

Poster sessions will take place during lunch breaks 12:30-13:30 in addition to a designated poster viewing between 18:00-19:30 on Monday 1st September; presenters are encouraged to stand by their posters during these times. Recommended poster size is A0 (90cmx120cm) in portrait format. If you would like to take your poster away please remove it before the beginning of the closing ceremony. Poster boards will be numbered, please refer to the abstract book for the location of your poster board.

Podium Presentations

Presentation format for standard oral presentations is 12 minutes plus 3 minutes to respond to questions, which will be strictly controlled by the session chair(s). Speakers are asked to upload their presentations in the speaker preview room (Room 7) at least half a day prior to their scheduled talk. The use of personal computers to display talks in the presentation rooms is not permitted.

Rapid Fire Presentations

Rapid Fire Presentations will take place in Hall 2. Timings will be strictly controlled to a 90 second presentation and 30 seconds to address a single question, there is no maximum slide limit. Presentations must be uploaded in the speaker preview room (Room 7) at least half a day prior to your allocated slot, and use of personal laptops is not permitted.

Wi-Fi

Free Wi-Fi is provided throughout the conference venue, a password is not required. The Wireless Network Connection name is *Free_Wifi*

Travel

The ESB2014 team has coordinated a number of discounted travel options for its delegates which should be booked through the travel section of the ESB2014 website.

Taxi: We have negotiated a discounted rate with INTX Liverpool Executive Chauffeur Service, from £20 per journey for a single passenger from Liverpool Airport. You can book and pay for transfers to and from both Liverpool and Manchester Airports online.

Coach: We have organized free coach transfers from Manchester and Liverpool airports on 30th August and 3rd September to the BT Convention Centre. For the 30th August, coaches will leave each airport on the hour starting at 12pm with the last one leaving at 7pm. For the return journey on the 3rd September, coaches will leave the BT Convention Centre hourly starting at 4pm with the last one leaving at 7pm. Delegates wishing to use this free service need to book by following the instructions online.

Train: We have negotiated a fare reduction of 20% on Virgin Trains advance fares in standard and first class from London to Liverpool for delegates, but these must be booked through the ESB2014 website using tthe password *Bio2014* which is case-sensitive.

If you have been unable to take advantage of these travel options, getting to the venue is straight forward.

From Liverpool John Lennon Airport

Bus: Bus stops are located on Speke Hall Avenue which is a short walk from the airport exit. Take bus numbers 82A or 500 and disembark at Liverpool Albert Dock, both routes have an approximate journey time of 30 minutes. The convention centre is approximately a 5 minute walk from here.
Taxi: There is a taxi rank located immediately outside the airport exit. A taxi into Liverpool city centre or the convention centre directly will take around 20 minutes.

From Manchester Airport

Train: Trains from Manchester Airport train station depart to Liverpool Lime Street station approximately every 30 minutes, with a journey time of around 1 hour. From Liverpool Lime Street station the convention centre is around a 20 minute walk across the city centre.
Taxi: There are several taxi ranks throughout Manchester airport. A taxi into Liverpool city centre or the convention centre directly will take around 45 minutes.

Travel to the venue by car

From the North: Leave the M6 at junction 26 and follow signs for M58 Liverpool. Follow to end of M58 and then take signs for A59 Liverpool. Continue to follow Liverpool City Centre until picking up signs for the Albert Dock. BT Convention Centre's car park is signposted Waterfront on the city wide 'available spaces' signage.

From the South: Leave the M6 at junction 21A and take the M62 to Liverpool. At the end of the M62 follow signs for Liverpool City Centre along Edge Lane, following signs for the Albert Dock.

For Sat Nav users, please use the postcode L3 4BX or enter the city as 'Liverpool' and the road name as 'Queen's Wharf'.

Parking

For conference parking, please use the multi-storey car park directly adjacent to the conference centre (£10 per 24 hours).

Prizes

The Four Best Student Oral Presentations

Winners will be notified during the closing ceremony and receive €200 and a certificate. The candidate must be a student (with a letter from their supervisor), be the presenting author of the presentation and must have had an abstract that was accepted during the official abstract submission process. The candidate should indicate on the registration form if they wish to be considered for the award. Prizes will be awarded during the closing ceremony.

The Four Best Student Poster Presentations

Winners will be notified during the closing ceremony and receive €150 and a certificate. The candidate must be a student (with a letter from their supervisor), be the presenting author of the presentation and must have had an abstract that was accepted during the official abstract submission process. The candidate should indicate on the registration form if they wish to be considered for the award. Prizes will be awarded during the closing ceremony.

Certificates of Attendance

Certificates of attendance can be provided after the event at the delegate's request. If you would like a certificate of attendance please email the conference secretary by 30th September 2014 and your certificate will be sent to you by email, or request one at the registration desk.

Social Programme

Welcome Reception - Open to All Delegates and Exhibitors

Sunday 31st August, 18:30-20:30, BT Convention Centre

The welcome reception will take place at the convention centre after the first day of exciting scientific sessions; attendance is included in your registration fee.

YSF Hard Days Night Social Event - Ticket Only

Sunday 31st August, 19:30-late, Liverpool ONE Bridewell

The YSF will be hosting a social event at Liverpool ONE Bridewell, formerly a prison; this venue is situated in the heart of Liverpool's city centre and a short walk from the nightlife of Liverpool's famous Mathew Street and Concert Square. Tickets for this event can be purchased online during registration and will include food, drinks and live music, but be quick as tickets are limited.

Chairpersons Dinner - Invitation Only

Monday 1st September, 19:30-22:00, Liverpool Tate Gallery

The chairperson's dinner will be held at the Liverpool Tate Gallery, one of the most important collections of Modern Art in Europe, located at Liverpool's historic Albert Dock.

Gala Dinner - Ticket Only

Tuesday 2nd September, 19:30 reception for 20:00 dinner, Convention Centre

The ESB2014 gala dinner will be at the convention centre. Tickets can be purchased during registration. If you have not purchased a ticket online but would like to attend the gala dinner, please speak to one of the local organising committee at the registration desks.

Food and Drink during the conference

The conference registration fee includes morning coffee breaks, a hot fork buffet lunch and traditional afternoon tea during the conference.

Excursions / Accompanying Person Trips

Liverpool Football Club open top bus tour

Take an open top bus tour to Anfield stadium, home of the famous Liverpool Football Club via a narrated tour of some of Liverpool's historic landmarks. Tours depart from the Pump House entrance to the Albert Dock, 5 minutes walk from the conference centre. For more information visit the ESB2014 website.

The Beatles Story Museum

Located in the Albert Dock Complex the Beatles Story Museum tells the story of the worlds original Boy band! A discount voucher of 20% has been negotiated for every ESB delegate which are available by request.

Walking Tours of Liverpool

Interested in the cultural history of Liverpool? Then you can go on one of two walking tours: the Bluecoat cultural walk, and the Bluecoat literary walk. Or possibly visit the Tate Art Gallery at Albert Dock. Click the image to the right for further details.

Awards

George Winter Award – Sunday 31st August, 09:00

***Guy Daculsi**, University of Nantes:* Biography on page 20

The ESB Council will choose an International Scientist who has contributed significantly to the knowledge in the field of biomaterials and/or the material controlled or influenced reactions within the host body through basic, experimental and/or clinical research. The work concerned and the results must have been published. This award is established to recognise, encourage and stimulate outstanding research contributions to the field of biomaterials and is presented annually during the Biomaterials conference of the Society, and consists of a certificate, a plaque and a refund of the registration fee and travelling expenses to the conference.

Jean Leray Award – Sunday 31st August, 17:30

***Lorenzo Moroni**, University of Twente:* Biography on page 21

This award is established to recognize, encourage and stimulate outstanding research contributions to the field of biomaterials by young scientists. It will be presented annually during the Biomaterials conference of the Society, and consists of a certificate, a plaque, a refund of the registration fee and travelling expenses to the conference and a cash prize. The nominee should not be older than 40 years at the close of nomination and should be not more than 8 years post-doctoral. Furthermore, the nominee must have contributed to the knowledge in the field of biomaterials and/or the material controlled or influenced reactions within the host body through basic, experimental and/or clinical research. The nominee needs neither to be a member of the European Society for Biomaterials nor a citizen of a European country.

International Award – Wednesday 3rd September, 13:30

***James Anderson,** Case Western Reserve University, Cleveland, Ohio:* Biography on page 22

The International Award is a prestigious recognition by the ESB of scientists who have generally spent their career outside Europe, who have a widely recognised, high scientific profile, and have made major contributions to the field of biomaterials. The awardee will have shown strong evidence of collaborations with members of our scientific community in Europe throughout their career.

Plenary Speaker Biographies

David Williams

Wake Forest Institute of Regenerative Medicine

Monday 1st September, 08:00 – 09:00, Hall 1

Professor Williams has had 45 years' experience in the science of biomaterials, medical devices and tissue engineering. During his career he has published over 30 books and 400 papers; his latest book, *Essential Biomaterials Science* will be published by Cambridge University Press in June 2014. He has been Editor-in-Chief of *Biomaterials*, the world's leading journal in this field since 2000. He has received the major awards from the US, European and Indian Societies of Biomaterials including the Founders Award of the US Society for Biomaterials in 2007, and he received the prestigious *Acta Biomaterialia* Gold Medal in 2012. In 1999 he was elected as a Fellow of the Royal Academy of Engineering in recognition of his contributions to Engineering in Medicine. He is currently global President of the Tissue Engineering & Regenerative Medicine International Society (TERMIS).

Professor Williams left the University of Liverpool, UK, in 2007, where he had been Head of Clinical Engineering, Director of the UK Centre for Tissue Engineering and Pro Vice Chancellor. While retaining the title of Emeritus Professor at Liverpool, he is currently Professor and Director of International Affairs, Wake Forest Institute of Regenerative Medicine, North Carolina, USA. In addition, he is a Visiting Professor in the Christiaan Barnard Department of Cardiothoracic Surgery, Cape Town, South Africa, a visiting Professorial Fellow at the Graduate School of Biomedical Engineering, University of New South Wales, Australia, a guest professor at Tsinghua University, Beijing, and Advisory Professor at Shanghai Jiao Tong University, China and the National University of Singapore. He is Visiting Chair Professor of Biomedical Materials, Taipei Medical University, Taiwan, and a Visiting Professor at Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, India. In Cape Town, with Professor Peter Zilla, the current Christiaan Barnard Professor of Surgery, he has formed a company that will produce low cost high technology medical devices that can be used with minimally invasive procedures to treat young adults in sub-Saharan Africa, who currently have no therapies available.

Stephen Minger

GE Healthcare

Monday 1st September, 14:30 – 15:30, Hall 1

Stephen received his PhD in Pathology (Neurosciences) in 1992 from the Albert Einstein College of Medicine in New York City. After post-doctoral work in CNS gene therapy, neural transplantation and neural stem cell biology at UCSD with Professor Fred "Rusty" Gage, he was appointed a Lecturer in Biomolecular Sciences at King's College London in 1998., Senior Lecturer in Stem Cell Biology in 2005 and was Director of the Stem Cell Biology Laboratory from 2002 until joining GE in 2009.

Over the past 20 years, Stephen's research group has been at the forefront of human stem cell research. In 2002, together with Professor Peter Braude and Dr Susan Pickering, his team was awarded one of the first two licenses granted by the UK Human Fertilisation and Embryology Authority for the derivation of human embryonic stem cells and his group was the first to deposit a human ES cell line into the UK Stem Cell Bank. Stephen was also one of the first two groups in the UK to be granted a research license by the HFEA in 2008 to pursue Somatic Cell Nuclear Transfer to generate "hybrid human embryos" for research into genetic forms of neurodegenerative conditions. He was actively involved with the UK Department of Health and with the Minister for Public Health in the consultation with both Houses of Parliament that led to the passage of the Human Embryo Bill of 2009 and the inclusion of new forms of animal-human embryos within primary legislation.

Stephen was the Stem Cell Expert and a Member of the UK Gene Therapy Advisory Committee at the Department of Health from 2006-2012 and was the Focal Point for Regenerative Medicine, Drug Discovery and Modernisation of Traditional Chinese Medicine in China for the UK Department of Business, Innovation and Skills from 2006-2009. He has also been a an external consultant and reviewer to the European Commission Framework Programs since 2003, a member of the Grants Working Group of the California Institute of Regenerative Medicine since 2004, and is a member of the Board of Directors of the Canadian Centre for the Commercialisation of Regenerative Medicine.

In the summer of 2013, Stephen was appointed Chief Scientist for Cellular Sciences, GE Healthcare Life Sciences, and is now responsible for long-term global research strategy for technology development in cell therapy, regenerative medicine, cellular technologies, *in vivo* diagnostic imaging and molecular pathology/personalised medicine.

Dietmar Hutmacher

Queensland University of Technology

Tuesday 2nd September, 08:00 – 09:00, Hall 1

Professor Dietmar W. Hutmacher is the Chair of Regenerative Medicine at the Institute of Health and Biomedical Innovation of Queensland University of Technology, where he leads the Regenerative Medicine Group, a multidisciplinary team of researchers including engineers, cell & molecular biologists, polymer chemists, material scientists, clinician scientists, and veterinary surgeons. Prof Hutmacher has extensive expertise in bioengineering, tissue engineering and regenerative medicine and more recently he was not only among the pioneers but also developed outstanding track record in two new cutting edge research areas namely “in vitro disease models” and “development of humanized mice models via the translation of tissue engineering platform technologies”. Currently, this work in the Hutmacher laboratory has a focus on cancer research.

Prof Hutmacher’s international standing and impact on the field are illustrated by his publication record (more than 240 journal articles, edited 10 books, 30 book chapters and more than 450 conference papers) and citation record (more than 12,000 citations, h-index 54).

Awards and funding: In 2011, Prof Hutmacher was awarded the prestigious Australian Research Council Future Fellowship and in 2012 he was elected to join the highly esteemed International College of Fellows Biomaterials Science and Engineering, and received the Australasian Society for Biomaterials and Tissue Engineering (ASBTE) for Research Excellence Award. In 2012 he was elected by his peers to become one of the 23 founding members of the International Fellows of Tissue Engineering and Regenerative Medicine Society. This group provides leadership and vision for the Society with more than 3000 members. He holds since 2006 an Adjunct Professorship at the Georgia Institute of Technology (GTECH) and he was awarded in 2011 the highly prestigious Hans Fischer senior Fellowship at the Technical University Munich (TUM). Over the past 15 years in academia, Prof Hutmacher has been a lead Investigator, co-investigator or collaborator in grants totalling more than AUD 50 million, including support from the National Institutes of Health – USA, Australian Research Council, National Health and Medical Research Council – Australia, European Union, DFG, and philanthropic and industry support.

Molly Shoichet

University of Toronto

Tuesday 2nd September, 13:30 – 14:30, Hall 1

Dr. Molly Shoichet holds the Tier 1 Canada Research Chair in Tissue Engineering and is Professor of Chemical Engineering & Applied Chemistry, Chemistry and Biomaterials & Biomedical Engineering at the University of Toronto. She is an expert in the study of Polymers for Drug Delivery & Regeneration which are materials that promote healing in the body. Dr. Shoichet has published over 450 papers, patents and abstracts and has given over 275 lectures worldwide. She currently leads a laboratory of 25 researchers and has graduated 115 researchers over the past 18 years. She founded two spin-off companies from research in her laboratory and is actively engaged in translational research.

Dr. Shoichet is the only person to be a Fellow of Canada's 3 National Academies: the Canadian Academy of Sciences of the Royal Society of Canada, the Canadian Academy of Engineering, and the Canadian Academy of Health Sciences. She is the recipient of many prestigious distinctions including: the Canada Council for the Arts' Killam Research Fellowship, NSERC's Steacie Fellowship, CIfAR's Young Explorer's Award (to the top 20 scientists under 40 in Canada), Canada's Top 40 under 40^{TM}, the Society for Biomaterials' Clemonson Award, and International Fellows of Tissue Engineering and Regenerative Medicine. In 2011, Dr. Shoichet was appointed to the Order of Ontario, Ontario's highest honour, and recognized as a Fellow of the American Association for the Advancement of Science.

In 2013, Dr. Shoichet's contributions to Canada's innovation agenda and the advancement of knowledge were recognized with the QEII Diamond Jubilee Award. Before being recruited to the University of Toronto in 1995, Dr. Shoichet worked at CytoTherapeutics Inc. on encapsulated cell therapy. Dr. Shoichet received her S.B. from the Massachusetts Institute of Technology in Chemistry (1987) and her Ph.D. from the University of Massachusetts, Amherst in Polymer Science and Engineering (1992).

Larry Hench

Florida Institute of Technology College of Engineering

Wednesday 3rd September, 08:00 – 09:00, Hall 1

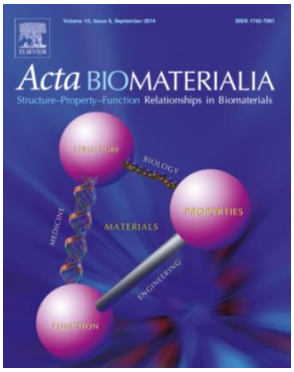
Larry Hench, University Professor of Biomedical Engineering in the Florida Institute of Technology College of Engineering, has been awarded the highly acclaimed international 2014 Acta Biomaterialia Gold Medal Award. The award recognizes excellence in research and development in the field of biomaterials. Professor Hench, who is also director of the Florida Tech Center for Medical Materials and Photonics, specializes in bio-ceramics and is a member of the National Academy of Engineering (NAE).

Born in Ohio in 1938, Dr. Hench received his bachelor's degree in 1961 and doctoral degree in 1964 in ceramic engineering from The Ohio State University. After 32 years on the faculty, Hench retired from the University of Florida as Emeritus Professor to join Imperial College , University of London, as chair of ceramic materials. There, he co-founded and co-directed the Tissue Engineering and Regenerative Medicine Centre for 10 years.

Discoveries made by Hench and his colleagues in the 1980s and 1990s have resulted in numerous Federal Drug Administration (FDA) approvals. In the mid-'80s the FDA approved the use of bioactive glass devices to reconstruct the ossicular chain (part of the middle ear) and restore hearing. A subsequent FDA approval led to bioactive glass implants to replace teeth, maintain jaw stability and repair maxillo-facial bone defects. In the '90s the FDA approved the use of a particulate form of bioactive glass that led to regenerating new bone to repair bone defects caused by periodontal disease. Numerous FDA approved applications in orthopedic surgery include repair of bone defects following revision surgery of failed hip and knee prostheses, and spinal repair.

Larry Hench, who has dedicated more than 45 years to his work, has earned many international awards, published 800 research papers, 30 books and has 32 U.S. patents. Twelve companies have been founded based upon technology created in Hench's laboratories and the commercial products have led to numerous advanced technology awards. He is also an author of a series of children's books featuring Boing-Boing the Bionic Cat and educational materials such as workbooks, experiment books and hands-on kits to stimulate interest in science, engineering, technology and mathematics (STEM).

Following the plenary lecture, Larry will be awarded with the *Acta Biomaterialia Gold Medal.* Click on the image to the right for further details



Guy Daculsi

George Winter Award Winner

University of Nantes

Sunday 31st August, 09:00 – 09:30, Hall 1

Professor Daculsi is Director of Research class Exceptional at INSERM, National Institute for Medical Research and Director of the SC3M Electron Microscopic, Microimaging and Microcharacterization Center of Nantes University. His work has mainly focused on the process of mineralization and developing models for the mineral phase of calcified tissues.

In 1984, Guy Daculsi made a thematic change to Biomaterials, and particularly Bioceramics. He directed research on calcium phosphate synthesis to model mineralization, but also to develop substitute materials for calcified tissues, particularly calcium phosphate. He was a pioneer in this field in France, developing an original concept of artificial bone; the Biphasic Calcium Phosphate Concept.

In 1989, Guy Daculsi created the Nantes University Research Centre on Calcified Tissues and Biomaterials. The activity of the laboratory was supported by INSERM and the CNRS. After 16 years of management of the research center for Materials of Biological Interest, the laboratory became UMR INSERM U791, Laboratory Osteoarticular and Dental Tissue Engineering.

He developed a theme of original research relevant to the physio-pathology of calcified tissues at the level of mineral phases, particularly degradation and dissolution by specialized cells. These studies and models are associated with design, development and study of mineral phases used as synthetic bone and dental substitutes.

His International contributions to Bioceramics and Bone substitutes has been recognized at a major scientific distinction IUSBSE (International Union of Societies for Biomaterials Science and Engineering) of the 8th World Congress on Biomaterials in 2008.

During the World Biomaterials Congress in 2008, he was awarded Fellow of the world federation of Biomaterials scientific societies (Fellow in Biomaterials Science and Engineering, FBSE). Guy Daculsi served on the executive Board of ESB, before being Chair of the 20th ESB in 2006.

Lorenzo Moroni **Jean Leray Award Winner**

University of Twente

Sunday 31st August, 17:30 – 18:00, Hall 1

Dr Moroni studied Biomedical Engineering at the Polytechnic University of Milan, Italy, and Nanoscale Sciences at Chalmers Technical University, Sweden. In 2001, he visited the lab of Professor Luke Lee at University of California Berkley, where he worked on microfabrication technologies for tissue engineering applications. He received his Ph.D. (cum laude) in 2006 at University of Twente on 3D scaffolds for cartilage and osteochondral regeneration, for which he was awarded the European doctorate award in Biomaterials and Tissue Engineering from the European Society of Biomaterials (ESB). In 2007, he worked at Johns Hopkins University as a post-doctoral fellow in the Elisseeff lab, focusing on hydrogels and stem cells. In 2008, he was appointed the R&D director of the Musculoskeletal Tissue Bank of Rizzoli Orthopedic Institute in Bologna, Italy, where he investigated the use of stem cells from alternative sources for cell banking, and the development of novel bioactive scaffolds for bone and cartilage regeneration.

From 2009 till 2014, he joined again the University of Twente, where he worked as an assistant professor until 2013 and as an associate professor thereafter in the Tissue Regeneration department within the MIRA institute for Biomedical Technology and Technical Medicine. Since 2014, he holds an associate professor position at the MERLN Institute for Technology Inspired Regenerative Medicine of Maastricht University. His research group interests aim at developing new biofabrication technologies to generate libraries of 3D scaffolds able to control cell fate. Since 2012, he has been a board member of the Young Scientist Forum of the ESB and co-chairman of the “Biofabrication” thematic group within the Tissue Engineering and Regenerative Medicine Society. In 2013, he was also elected to the editorial board of the journal “Biofabrication”. He is also a co-founder of the biotech company Screvo B.V., which is committed to the production of animal implantable 3D high through-put screening systems.

James M. Anderson — International Award Winner

Case Western Reserve University

Wednesday 2nd September, 13:30 – 14:30, Hall 1

Dr. Anderson is a Distinguished University Professor and Professor of Pathology, Macromolecular Science and Engineering, and Biomedical Engineering at Case Western Reserve University. In addition, he is a practicing pathologist in the Department of Pathology, University Hospitals Case Medical Center.

James M. Anderson received his Ph.D. at Oregon State University in 1967, his M.D. degree from the Case Western Reserve University School of Medicine in 1976, and did his Anatomic Pathology residency at the Institute of Pathology of University Hospitals of Cleveland. Following the completion of his residency, he joined the faculty of the Institute of Pathology at Case Western Reserve University. Throughout his career James Anderson has received many honors and awards such as a NIH MERIT Award, the Elsevier Biomaterials Gold Medal Award, the Honoris Causa Degree by the University of Geneva and the 2013 Acta Biomaterialia Gold Medal, amongst others.

He is a founding member of the Society for Biomaterials and the Controlled Release Society and serves as a consultant to the NIH, FDA, and ISO, and is an elected member of the Institute of Medicine National Academy and the National Academy of Engineering. He is the Editor-in-Chief of the Journal of Biomedical Materials Research-Part A. Dr. Anderson has worked in the area of biomaterials, medical devices, and prostheses for the past 40 years and his current activities range from the clinical pathology evaluation of retrieved implants from humans to fundamental studies of cellular interactions with biomaterials.

Symposia

The ESB 2014 Conference will feature a number of symposia:

- YSF Entrepreneurship Workshop
- Fellows of Biomaterials
- Antimicrobials, Biofilms & Surfaces
- The Meaning of Surface Charge for Biomaterial Characterization
- European Orthopaedic Research Society (EORS)
- Translational Research
- UK Society for Biomaterials (UKSB) Annual Meeting
- Women in Science & Engineerging
- Advances in Bioactive Glasses

These symposia will run alongside the normal scientific session and are open to every delegate of the ESB 2014 conference. No prior registration is necessary.

YSF Entrepreneurship Workshop

Entrepreneurship – an Academic and Industrial Perspective
31st August 2014, 13.30 – 16.00

Symposium Organizers: Lorenzo Moroni (University of Twente), Sandra Van Vlierberghe (University of Gent), Anna Wistrand (KTH Royal Institute of Technology)

The workshop will give a flavour of what it takes to create spin-off companies from innovative research activities that take place at Universities, as well as in Industry. Talks will span from personal experiences in facing the challenges ofsetting up a spin-off, to the availability of educational programmes and important points to consider when applying for patents.

The afternoon has an extensive spectrum of experienced experts in entrepreneurship. Invited speakers include:

- Dirk Grijpma (University of Twente)
- Dietmar Hutmacher (Queensland University of Technology and Technical University of Munchen)
- Jens Thies (DSM, The Netherlands)
- Chris Sutcliffe (University of Liverpool)
- Alex Sim (AMSBIO Ltd)
- Chris Unsworth (Business Gateway, University of Liverpool)

Dirk Grijpma

Dirk Grijpma is Professor in Biomaterials Science and Technology at the University of Twente. He also holds a part-time position at the University Medical Center Groningen. His expertise is in the synthesis and properties of resorbable polymeric materials for use in medical devices, tissue engineering and in the delivery of relevant biological compounds, and the interaction of these materials and devices with cells and tissues.

Current research includes the development of advanced microstructures by photo-polymerization of functionalized degradable oligomers in stereolithography and research programmes on the tissue engineering of cardiac muscle and blood vessels, and the synthesis and processing of composite materials for fracture reconstruction in maxillofacial surgery.

Pre-designed anisotropic architectures based on biologically active materials are being developed to engineer musculoskeletal and cardiovascular tissues in bioreactors under conditions that mimic the natural environment. His research includes the synthesis and characterization of large arrays of materials and their evaluation by high-throughput methods, which will likely lead to the discovery of novel materials that perform unexpectedly well in their interaction with cells and tissues.

His research interests are: resorbable polymers for medical applications, structure-property relationships in polymers, tissue engineering, bioreactor technology, drug delivery, ring opening polymerization, photo-polymerization and stereolithography. He is author of more than 180 scientific publications and holds 13 patents. He is editorial board member of Biomaterials, Acta Biomaterialia and of the Journal for Applied Biomaterials and Biomechanics. Prof. Grijpma co-founded Medisse (www.medisse.com), a company developing medical implants based on poly(trimethylene carbonate). Medisse's lead product is FlexiSurge® Adhesion Barrier, a resorbable membrane that prevents the occurrence of postoperative adhesions. He was elected Fellow Biomaterials Science and Engineering (FBSE) in 2008.

Dietmar Hutmacher

Professor Dietmar W. Hutmacher is the Chair of Regenerative Medicine at the Institute of Health and Biomedical Innovation of Queensland University of Technology, where he leads the Regenerative Medicine Group, a multidisciplinary team of researchers including engineers, cell & molecular biologists, polymer chemists, material scientists, clinician scientists, and veterinary surgeons. Prof Hutmacher has extensive expertise in bioengineering, tissue engineering and regenerative medicine and more recently he was not only among the pioneers but also developed outstanding track record in two new cutting edge research areas namely "in vitro disease models" and "development of humanized mice models via the translation of tissue engineering platform technologies". Currently, this work in the Hutmacher laboratory has a focus on cancer research

Prof Hutmacher's international standing and impact on the field are illustrated by his publication record (more than 240 journal articles, edited 10 books, 30 book chapters and more than 450 conference papers) and citation record (more than 12,000 citations, h-index 54).

Awards and funding: In 2011, Prof Hutmacher was awarded the prestigious Australian Research Council Future Fellowship and in 2012 he was elected to join the highly esteemed International College of Fellows Biomaterials Science and Engineering, and received the Australasian Society for Biomaterials and Tissue Engineering (ASBTE) for Research Excellence Award. In 2012 he was elected by his peers to become one of the 23 founding members of the International Fellows of Tissue Engineering and Regenerative Medicine Society. This group provides leadership and vision for the Society with more than 3000 members. He holds since 2006 an Adjunct Professorship at the Georgia Institute of Technology (GTECH) and he was awarded in 2011 the highly prestigious Hans Fischer senior Fellowship at the Technical University Munich (TUM). Over the past 15 years in academia, Prof Hutmacher has been a lead Investigator, co-investigator or collaborator in grants totalling more than AUD 50 million, including support from the National Institutes of Health – USA, Australian Research Council, National Health and Medical Research Council – Australia, European Union, DFG, and philanthropic and industry support.

Jens Thies

Jens Thies received his PhD from Heriot Watt University in Edinburgh, under the supervision of Professor Ian Cowie, in 1998. Subsequently he undertook a post-doctoral position at DSM Research in the field of Rotaxanes. In 2000 he joined David Tirrell's groups at Caltech as a visiting post-doctoral researcher, investigating recombinant protein engineering. He then joined DSM Research and initiated the functional coating platform, launching several products mainly in DSM's Advanced Surface and Medical Coatings businesses. He is currently responsible for Research, Technology and Development of DSM Biomedical's Drug Delivery business globally. Jens also holds an Executive Masters in Business Innovation from TiasNimbas Business School.

Chris Sutcliffe

Dr Chris Sutcliffe is widely acknowledged as one of the world's leading research academics in additive layer manufacturing. He has been associated with flexible manufacturing methods since 1999 when he joined the Department of Manufacturing Engineering at the University of Liverpool. Here, along with academic colleagues he was a founder member of the original EPSRC-funded IMRC working in a range of fields including laser-processing using short pulse duration lasers, cold gas dynamic manufacturing, stereolithography of anatomical phantoms, selective laser sintering of medical devices, the production of controlled release oral dosages and selective laser melting.

He is now recognised as an expert in the field of selective laser melting; in particular, in the design of production manufacturing equipment and the development of next generation orthopaedic, trauma, spine and CMF implants for which he holds base technology and device design patents which have been licensed internationally. As an academic, he has been an investigator on 34 manufacturing research projects, 17 as PI totalling over £11 M in funding. He has extensive industrial experience including being R&D Director at MTT Technologies where he was, prior to its 2011 purchase by Renishaw, responsible for the delivery of a £2.5m portfolio of EU, TSB, EPSRC and company-funded projects. Dr Sutcliffe therefore has considerable experience in the management and delivery of large scale, multi-partner, multi-disciplinary research projects. He has worked with other universities, and has experience of leading and managing collaborative projects with partners such as Heriot Watt, Cambridge, Manchester, Cranfield, Nottingham, Bath, Edinburgh, Sheffield, Cambridge and Glyndwr Universities.

Dr Sutcliffe has built a research group at the University of Liverpool with a strong international reputation in manufacturing particularly in the development of orthopaedic devices in close collaboration with industrial partners. Dr Sutcliffe plays a strong role in the development of the academic activities of the School of Engineering playing a leading role in the development of manufacturing teaching, learning and design.

Alex Sim

Alex Sim is the Founder and CEO of AMS Biotechnology (Europe) Ltd. Alex, graduated from Strathclyde University as a Molecular Biologist prior to completing a postgraduate degree in Marketing. He has been involved in translating cutting edge life science technology into successful revenue generating products for 30 years. With Amersham International (now GE) he led the team that developed Hybond and was involved in the commercialisation of multiple technologies that have had direct impact on genomics and proteomics.

In 1988, Alex founded AMS Biotechnology (AMSBIO). Since then he has raised venture funding, sold a variety of companies and continues to contribute to the success of small innovative SMEs. AMSBIO provides specialist biotools including tissues, stem cells, and cell based assays in addition to tailored screening services that are increasingly being performed as 3D assays. Very recent initiatives include the establishment of new laboratories in Biocity near Glasgow and the opening of the company's North American headquarters in Cambridge, Massachusetts, where Alex now spends much of his time.

Chris Unsworth

Chris was appointed IP Manager at the University of Liverpool in January 2011 where he is responsible for the exploitation of the University's IP. Over the period since 2011 Chris developed and implemented many of the new structures and procedures that now comprise Liverpool IP. Chris also manages all relationships with the University's licensees and spin-out companies.

Chris first came to the University in 2006 to run NeoCare Ltd a spin-out created to exploit chromatic algorithm patents developed in the University's engineering department. Following his exit from NeoCare Chris held a succession of roles managing; the University's POC fund, a £1.3m TSB project with Unilever in the field of high shear mixing, the establishment and operation of the £2.8m Knowledge Centre for Material Chemistry before being appointed as the Business Manager for Science in 2010.

Chris has a background in industrial management. Following a first degree in Chemistry and Fuel Technology he worked for the National Coal Board for five years as Fuel Technologist. In 1986 Chris graduated with an MBA from Manchester Business School from where he joined Dorman Smith Switchgear as Business Development Manager. Over the next twenty years he held a variety of positions as Managing Director in operating companies run by groups such as BICC, GEC Alsthom, Hanson Electrical and Scholes.

Fellows of Biomaterials Symposium

The Race Between Engineering and Biology in Replacing Human Tissues
31st August 2014, 13.30 – 16.00

Symposium Chair: Joachim Kohn, Rutgers University

The chair will define this challenge, a take vote of the audience. There will then be six 15 minute talks from a panel of current FBSE fellows:

- **Barbara Boyan**
- **Rui Reis**
- **Abhay Pandit**
- **Cristina Tanzi**
- **John Kao**
- **David Williams**

who will expound, sometimes controversially, their own points of view about the challenge. Following the talks there will be a Q & A session and finally a vote of the audience.

This symposium is open to all conference delegates.

Translational Research Symposium

Progressing Innovations from the Bench to Bedside
2nd September 2014, 09:00 – 18:00

Symposium Organizers: Yves Bayon, Marc Bohner, David Eglin & Paul-Henri Vallotton

The path leading to commercialization – from promise to actual delivery, from prototype to useful product – is scattered with great challenges and hurdles:

- **Financing**
- **Intellectual property** (*i.e.* patentability, freedom to operate)
- **Legal agreements** with partners and services/research contractors
- **Regulatory environment** driven by FDA, CE mark – notified bodies, EMEA...
- **Manufacturing process** and its validation
- **Clinical trial design**
- **Relationships with national/regional healthcare authorities**
- **Healthcare reimbursement policies**.

On the other hand, the latest generations of biomaterials, are becoming more and more sophisticated, such as combination products and smart materials may face the limitations of standard *in vitro* and *in vivo* evaluation techniques. Regulatory agencies continuously raise the quantity of requested information for any new submitted devices: purity and characterization, safety and performance evaluation, mechanism of action, *etc.* In these respects, academia and industries may increasingly be partners throughout the full cycle of the commercial development of new biomaterial concepts and technologies.

Ideas often start on pieces of paper and a test tube on the basis of basic science research, in academic and institutional laboratories, with the support of public and philanthropic research grants. Talented scientists drive these ideas and projects through various stages of early development that mostly result in significant scientific achievements, illustrated by publications in peer-reviewed journals and, less often, by patent filings.
Many of the new biomaterial concepts and technologies, when carefully evaluated, may have benefit for patients and the public. But this further requires rigorous complementary research development activities to advance new concepts and technologies to the patients and the public: *e.g.* preclinical proof of concept and performance evaluation by *in vivo* animal studies, extensive biocompatibility studies to be performed according to international standards and in GLP (Good Laboratory Practice) conditions, safety and performance evaluation in expensive human clinical trials with appropriate product type (formulation, device *etc.*).

New concepts and technologies are generally percolated to life and progress through the early incubation phase, often showing proof-of-concept and the full promise of potentially innovative products. But, most translational efforts die here and there are multiple financial, scientific and sociological reasons for this phenomenon.

Given the increasing links between academic research and industry globally, the ESB 2014 conference includes this Translational Research Symposium. This will bring together leading Tier one companies in the medical device markets, small and medium enterprises and entrepreneurial

academics who can share their experiences on taking biomaterials technologies to commercial endpoints.

The Symposium will focus on *'Progressing innovations from bench to bedside'*. It will be richly illustrated by testimonies of leading biomaterials & medical device industries, start-up & SME entrepreneurs and academics, in the business exploitation and commercial translation of biomaterial related concepts and ideas, for now and to the 2020+ horizon. The main goal of the programme is to highlight the key factors leading to, or impairing successful translation. Specifically the industry will include three sessions:

1) The Industry Translation Process & 2020 Horizon – Invited speakers (*e.g.* DePuy, Covidien).

2) Academic management innovation & Academic spin-offs testimonies – Invited speakers and Panel discussion with selected industries, entrepreneurs & academics.

3) Forum for sharing translation initiatives – Abstract submission, Q&A with a mixed panel of industrials, entrepreneurs and academics.

This event will be of interest to a wide audience from large medical device producers to academics and entrepreneurs and promoters of biomaterial technologies for medical applications. The programme includes significant time for networking during coffee breaks and lunch. The Symposium feature the following speakers:

- Geoff Richards (AO Research Foundation, Davos);
- Andrea Montali (Depuy Synthes)
- Lars Neumann (Materialise NV, Leuven)
- Philip Procter (Medical Device Industry Consultant)
- Kevin Shakesheff (University of Nottingham and Regentec)
- John Fisher (University of Leeds)
- Michel Thérin (Covidien, Lyon)
- Iain McDougall (Taragenyx, UK)

Lars Neumann

Dr Lars Neumann is a business development manager at Materialise NV, Belgium with specific focus on software for biomedical engineering.

Lars received his doctoral degree in 2012 in Physics from ICFO – The Institute of Photonic Science in Barcelona. His research interests focussed on improving optical imaging techniques for biological systems by custom shaping of laser light fields through the application of nanotechnology. After his doctoral degree, Lars moved to Germany and engaged in the creation and optimisation of R&D project and process management in the automobile industry.

As a physicist curious for new technologies, Lars became interested in additive manufacturing, also known as 3D Printing, and the opportunities that the technology offers especially in biomedical engineering. The human body is one of the most individual systems we can imagine, yet most of our tools and devices are off the shelf and not customised.

At Materialise, Lars focusses on the principle of “Engineering on Anatomy” within the Mimics Innovation Suite and its applications in patient-specific biomedical engineering and science. In his role as business development manager, he is responsible for the academic users of the Mimics Innovation Suite worldwide. Lars is in charge of Materialise’s developing educational programme in Engineering on Anatomy and involved in several European Union funded research projects with academic and industrial partners.

Kevin Shakesheff

Professor Kevin Shakesheff is Director of the UK Regenerative Medicine Platform Hub for Acellular Technologies. His independent scientific career began at the Massachusetts Institute of Technology under a NATO fellowship following a PhD and his qualification as a register pharmacist. His inventions and scientific breakthroughs have resulted in over 170 peer-reviewed full papers that have been cited more than 5500 times to date, the establishment of 2 successful companies, the submission of 13 patent application families and numerous international awards. He currently holds a prestigious European Research Council Advanced Grant within an active research portfolio of more than £7 million.

In addition, he has taken a leading role in shaping interdisciplinary research in the UK through continued membership of senior policy and grant awarding committees. In 1997 he founded, with Dame Julia Polak, the Tissue and Cell Engineering Society (TCES). In 2013 he became a Royal Society Wolfson Merit Award Holder. He is a member of the Medicines and Healthcare Products Regulatory Authority (MHRA) Biologicals and Vaccines Expert Advisory Group, co-Director of the EPSRC Centre for Innovative Manufacturing Centre in Regenerative Medicine, Lead of the Research Councils UK India Science Bridge in Biopharmaceuticals and a Member of the Department of Health’s Modernising Pharmacy Careers Programme. He is a Sub-Panel Member for the UK’s Research Excellence Framework (REF) for 2014. In 2011 he was made a Fellow of the Royal Pharmaceutical Society and in 2013 a Fellow of the Society of Biologists. In 2014 he was selected as one of the 10 most inspirational scientists in the UK by the Engineering and Physical Sciences Research Council (RISE Leader Award).

John Fisher

Professor John Fisher CBE is the deputy Vice Chancellor of the University of Leeds and Director of the Institute of Medical and Biological Engineering.

UK Society for Biomaterial (UKSB) Annual Meeting

2nd-3rd September 2014

Event Chair: Sanjukta Deb, Kings College London

The UK Society for Biomaterials (UKSB) is honoured to be holding its annual meeting as a set of sessions within the ESB meeting. The society is dedicated to nurturing early career and post-doctoral researchers within the UK and providing a platform for dissemination of their research, networking and career progression. At each annual conference in addition to best postgraduate poster and oral presentations, a President's Prize and the Alan Wilson Prize are awarded. The President's Prize aims to recognise outstanding contributions to the UK Biomaterials field, and this year we are delighted to announce that the prize has been awarded to Professor Shelia MacNeil who will be presenting her award lecture in Room 4 on Tuesday 2/9/14 at 09:30. In addition Professor Paul Hatton has been awarded the Alan Wilson prize, which recognises excellent research in the dental biomaterials field, and will be presenting his lecture in Room 4 on Tuesday 2/9/14 at 14:30. The UKSB will also be introducing Dr Manus Biggs who has been selected to receive the Larry Hench Young Investigator Award, which will be presented to him in the Bioactive Glass Symposium in Room 3 on Wednesday 3/9/14 at 14:30, and where he will present his research.

Materials for the Future – University of Liverpool Outreach Event

1st September 2014, 16.00 – 19.30

Event Chair: John Hunt, University of Liverpool

This outreach event will introduce a series of world-expert speakers who will present some of the issues for providing new materials, in a sustainable manner, to meet the needs of an ageing and ever-increasing population. The speakers will provide insight into how new research is providing diverse material solutions such as nano-medicines, stem cell therapies, and high performing next generation medical implants. Delegates will include the ESB 2014 delegation and then also University of Liverpool academics, alumni, industry partners, and civic leaders. The afternoon will showcase world-leading research from the University of Liverpool. The schedule of talks is:

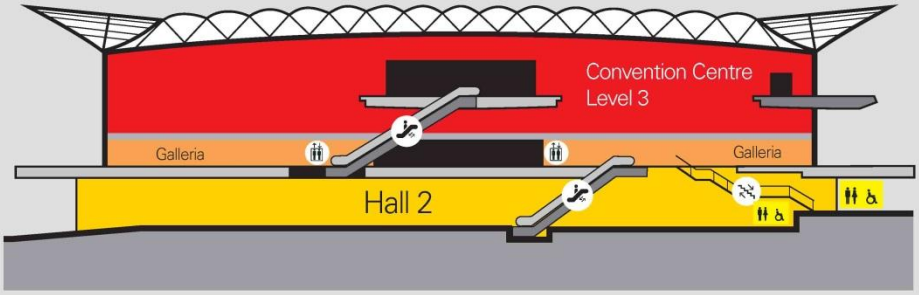
- **Anthony Hollander**, University of Liverpool
- **Steve Rannard**, University of Liverpool
- **Chris Sutcliffe**, University of Liverpool
- **Raphael Levy**, University of Liverpool
- **Stephen Minger**, GE Healthcare
- **Molly Shoichet**, University of Toronto
- **Joachim Kohn**, Rutgers University
- **David Williams**, Wake Forest Institute of Regenerative Medicine

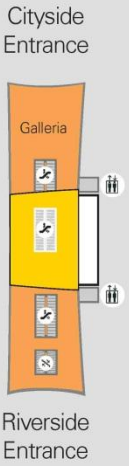
Click the image on the right to download further details

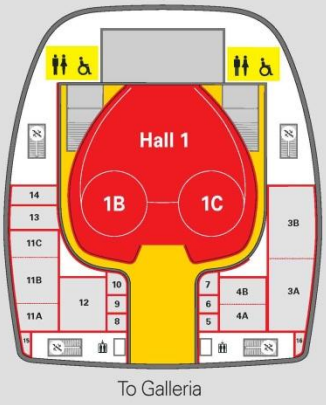
BT Convention Centre Map

BT Convention Centre

Cityside Riverside





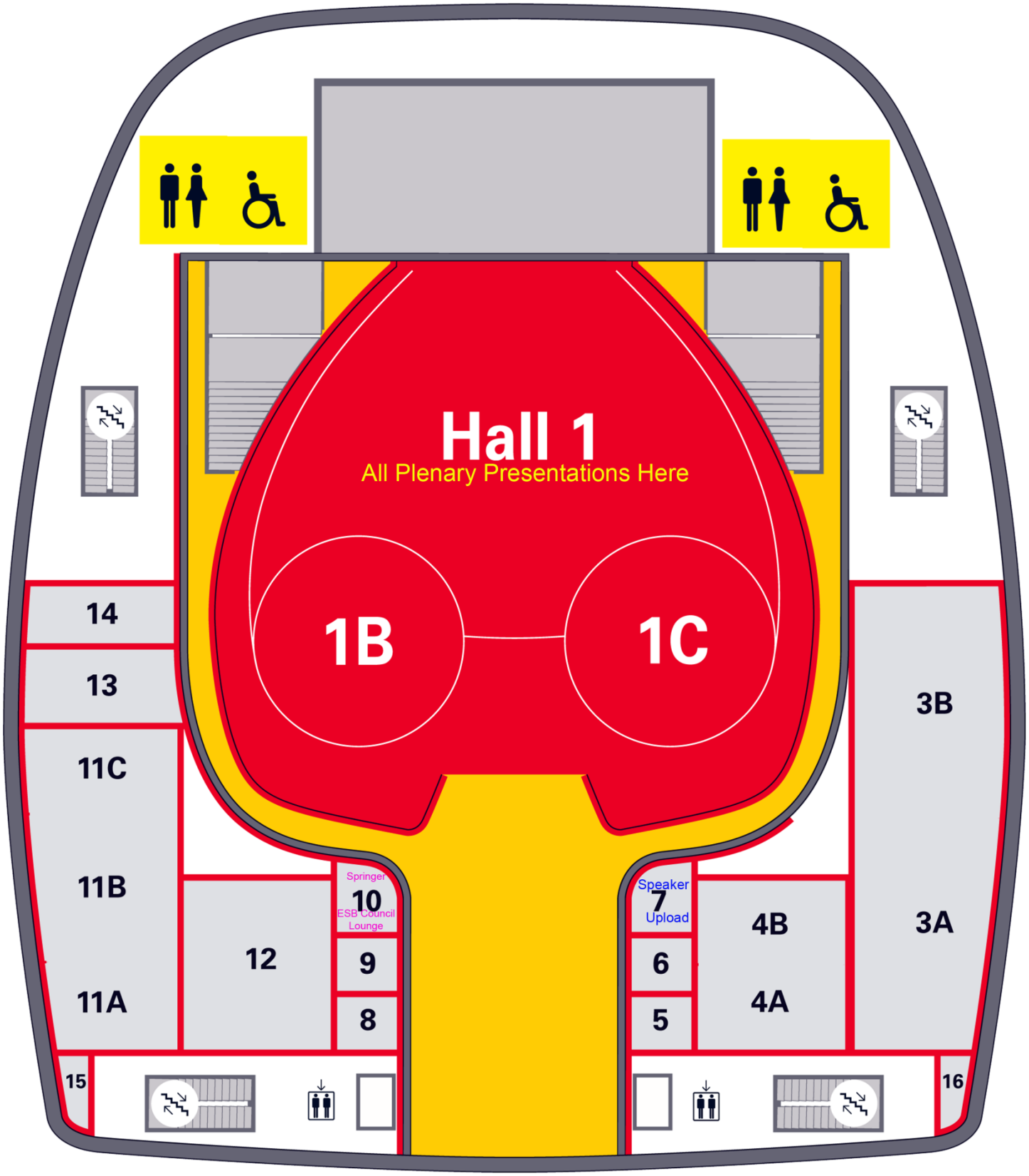


Key

- Lift
- Escalator
- Stairs
- Male/Female Toilets
- Disabled Toilets

acc Liverpool

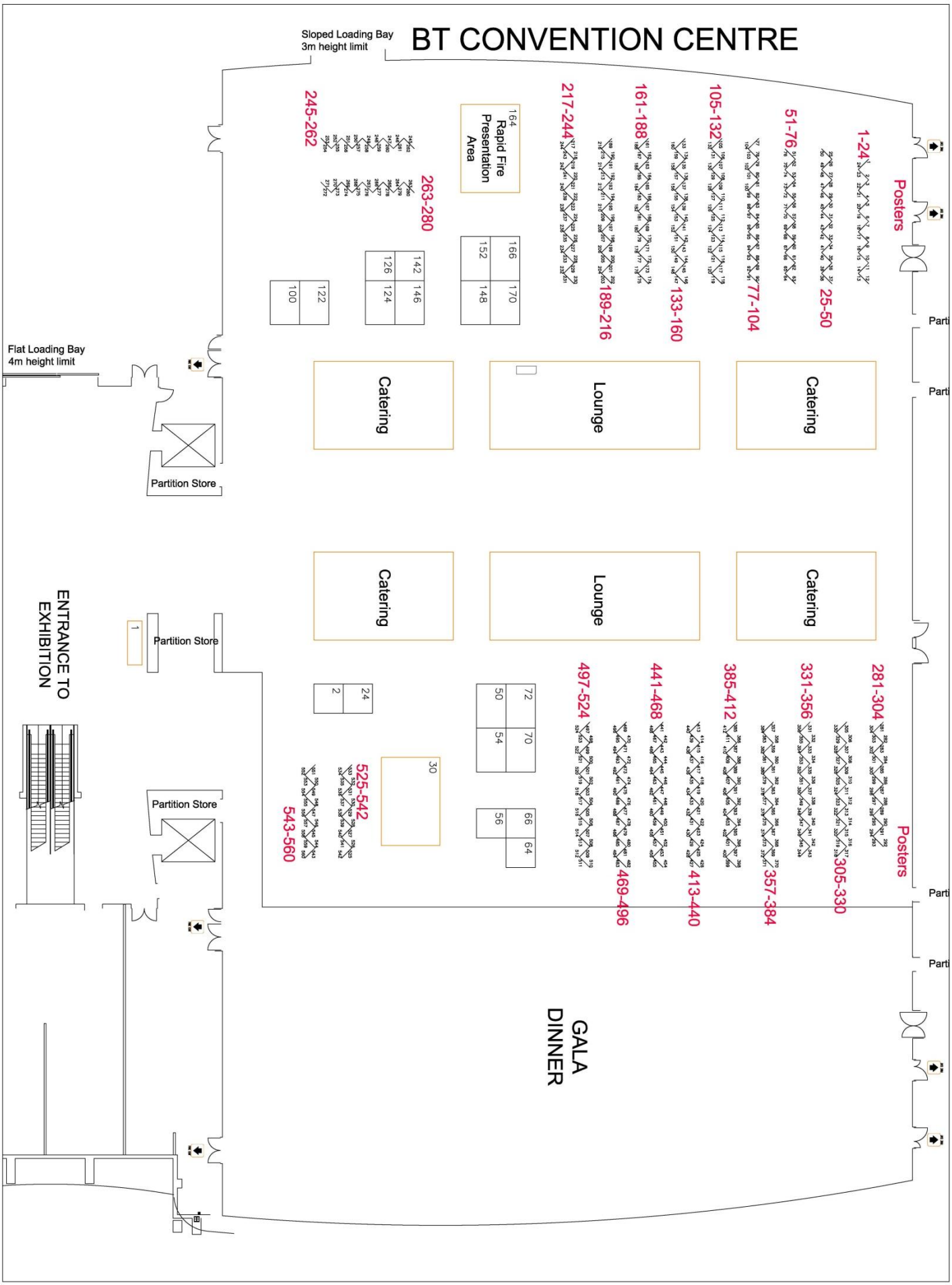
Layout of Rooms on Level 3 – All oral sessions (except RapidFire)



Speaker Preview Room and presentation upload: Room 7

Oral presentations: Hall 1, Room 1B, Room 1C, Room 3, Room 4 & Room 11

Layout of Hall2, Exhibition Hall – Posters, breaks & lunches



Programme At-a-Glance

Sunday, 31st August

	Auditorium, Hall 1	Room 3	Room 11	Room 1B	Room 1C	Room 4	Exhibition Area	Room 7
8	**Registration begins at 07:30 within the ACC**							Presentation uploads and Speaker Preview: Open from 07:30
9	**George Winter award**: Guy Daculsi							
10	**Biomaterials I** 1-1: Whitford 1-2: Gonçalves 1-3: de Cogan 1-4: Satyam	**Tissue Engineer I** 2-1: Bacakova 2-2: Ataol 2-3: Takata 2-4: Mohd-Isa	**Stem Cells I** 3-1: Sayin 3-2: Seo 3-3: Indrani 3-4: Bryan	**Drug Delivery I** 4-1: Wich 4-2: Van Den Berghe 4-3: Aksoy 4-4: Samal	**Dental Biomats I** 5-1: Rasoul 5-2: Aljabo 5-3: Shah 5-4: Borget			
	Morning Coffee Break with posters in Exhibition Hall							
11	**Biomaterials II** 6-1: Mosser 6-2: Kusrini 6-3: Campagnolo 6-4: Bishop	**Tissue Engineering II** 7-1: Yoshizawa 7-2: Yamano 7-3: Lyu 7-4: Altuntas	**Stem Cells II** 8-1: Tseng 8-2: Dursun 8-3: Workman 8-4: Milthorpe	**Drug Delivery II** 9-1 Zelikin 9-2: Paik 9-3: Hamid 9-4: van der Vlies	**Dental Biomaterials II** 10-1: Gómez-Florit 10-2: Tessarolo 10-3: Almuhamadi 10-4: Qasim		Exhibition Hall open at 10:30. Hang posters from 10:30-12:30. Posters and exhibition open until 19:00	
12	6-5: Gomes 6-6: Biggs	7-5: Chatzinikolaidou 7-6: Dong	8-5: Prosser 8-6: Notingher	9-5: Hasegawa 9-6: Novio	10-5: Ewais 10-6: Ashworth			
13	Lunch & posters, in Exhibition Hall						YSF Rapidfire poster session I	
14	**Symposium:** Fellows of Biomaterials 11-1: Joachim Kohn: Intro of panelists 11-2: Initial vote 11-3: Barbara Boyan 11-4: Rui Reis	**Symposium:** YSF Entrepreneurship Workshop YSF: Introduction 12-1: Dirk Grijpma 12-2: Dietmar Hutmacher						
15	11-5: Abhay Pandit 11-6: Cristina Tanzi 11-7: John Kao 11-8: David Williams	12-3: Jens Thies 12-4: Chris Sutcliffe 12-5: Alex Sim						
16	11-9: Panelist Q&A and discussion 11-10: Vote, conclusion	12-6: Chris Unsworth						
	Afternoon Tea with posters, in Exhibition Hall							
17	**EDA awards** Award presentations 14-1: Pedro Costa 14-2: Silvia Bidarra 14-3: Cecilia Granéli 14-4: Hanna Tiainen 14-5: Leonardo Ricotti							
18	**Jean Leray award**: Lorenzo Moroni Opening Ceremony							
19							Welcome Reception	
20								
21	YSF Event (Ticket only)							
22+								

Monday, 1st September

	Auditorium, Hall 1	Room 3	Room 11	Room 1B	Room 1C	Room 4	Exhibition Area	Room 7
8	**Plenary Lecture**: David Williams						Exhibition Hall open at 08:00. Posters and exhibition open until 19:30	
9	Bone I: 15-1: Yang	Biomaterials III: 16-1: Ullm	Cardiovascular I: TECAS-ITN: 17-1: Kömez	Imaging I: 18-1: Tondera		Symposium: Antimicrobials: 19-1: Kao		
	15-2: Ou	16-2: Pompe	17-2: Boccaccini	18-2: Jumeaux		19-2: Wilcock		
	15-3: Ikeda	16-3: Inubushi	17-3: Loy	18-3: Gonçalves		19-3: Rimmer		
	15-4: Kootala	16-4: Taguchi	17-4: Horakova	18-4: Koole		19-4: Gultekinoglu		
10	15-5: Wolf-Brandstetter	16-5: Walschus	17-5: Marcolin	18-5: Garon		19-5: Jones		
	15-6: Castillo	16-6: Hintze	17-6: Goor	18-6: Garric		19-6: Flores		
	Morning Coffee Break with posters in Exhibition Hall							
11	Bone II: 20-1: Farbod	Biomaterials IV: 21-2: Monaco	Cardiovascular II: TECAS-: 22-1: Feng	Symposium: Surface Charge: 23-1: Körner		Symposium: Antimicrobials: 24-1: Gołda-Cępa		
	20-2: Tallia	21-2: Delcassian	22-2: Ryan			24-2: Aubert-Viard		
	20-3: Lara-Sáez	21-3: Le Saux	22-3: Piegat	23-2: Lorenzetti		24-3: Leong		
	20-4: Behrens	21-4: Kerdjoudj	22-4: Guler			24-4: Fukushima		
12	20-5: Sheafi	21-5: Bernstein	22-5: Brubert	23-3: Espanol		24-5: Unosson		
	20-6: Fraioli	21-6: Oliveira	22-6: Freudenberg			24-6: Percival		
13	Lunch & posters, in Exhibition Hall						YSF Rapidfire poster session II	Presentation uploads and Speaker Preview: Room 7 Open from 08:00
14	**ESB General Assembly**							
15	**Plenary Lecture**: Stephen Minger							
	Afternoon Tea with posters, in Exhibition Hall							
16	Materials for the Future: University of Liverpool Outreach event: John Hunt: Intro	Biomaterials V: 26-1: Ban	Symposium: EORS: 27-1: Choy	Drug Delivery III: 28-1: Ganesan	Biomaterials VI: **Keynote Lecture** 29-1: Li	Symposium: Antimicrobials, biofilms: 30-1: George		
	25-1: Hollander	26-2: Schmitt	27-2: Braga	28-2: Nagahama		30-2: Li		
	25-2: Rannard	26-3: Gao	27-3: Mustafa	28-3: Wang	29-2: Ryabenkova	30-3: Salmeron-Sanchez		
	25-3: Sutcliffe	26-4: Pinto	27-4: Castaño	28-4: Gilde	29-3: Feng	30-4: Irwin		
17	25-4: Levy	26-5: Pires	27-5: Gowland	28-5: Panseri	29-4: Wendt	30-5: Khan		
	John Hunt: Summary & Intro of experts	26-6: Tanga	27-6: Jing	28-6: Moriyama	29-5: Demitri	30-6: Nottelet		
	25-5: Stephen Minger	26-7: Wong	27-7: Qiao	28-7: Aiertza	29-6: Ishikawa	30-7: Prokopovich		
18	25-6: Molly Shoichet	26-8: Brugmans	27-8: Li	28-8: Chao	29-7: San Roman	30-8: Bergmann		
	25-7: Joachim Kohn	Poster Session, in Exhibition Hall					YSF Rapidfire poster session III	
19	25-8: David Williams Summary							
20	#							
21								
22+								

Tuesday, 2nd September

	Auditorium, Hall 1	Room 3	Room 11	Room 1B	Room 1C	Room 4	Exhibition Area	Room 7	Room 13	Room 14
8	**Plenary Lecture**: Dietmar Hutmacher						Exhibition Hall open at 08:00. Posters and exhibition open until 19:30			
9	Biomaterials VII: Bioglass 31-1: Brauer 31-2: Christie 31-3: Greasley 31-4: Alm	Symposium: Translational 32-1: Richards 32-2: Montali	Tissue Engineering III 33-1: Satyam 33-2: Hayes 33-3: Scaglione 33-4: Wan	Bone III 34-1: Ohtsuki 34-2: Picard 34-3: Yamaguchi 34-4: Nakamura	Stem Cells III **Keynote Lecture** 35-1: Dalby 35-2: Van Vlierberghe	UKSB I Welcome: UKSB President **UKSB President's Prize:**				
10	31-5: Haaparanta 31-6: Balasubramanian	32-3: Neumann	33-5: Qazi 33-6: Wandrey	34-5: Kerdjoudj 34-6: Vasconcelos	35-3: Alakpa 35-4: Bersini 35-5: Sorkio	36-1: Sheila McNeil				
	Morning Coffee Break with posters in Exhibition Hall									
11	Biomaterials VIII: Bioglass 37-1: Connell 37-2: Hasan 37-3: Martin 37-4: Philippart	Symposium: Translational 38-1: Proctor 38-2: Shakesheff	Tissue Engineering IV 39-1: Mauquoy 39-2: Vueva 39-3: Vallejo-Giraldo 39-4: Blanquer	Bone IV 40-1: Satué 40-2: Bannerman 40-3: Mechiche Alami 40-4: Rodríguez-Lorenzo	Stem Cells IV 41-1: Guillem-Marti 41-2: Hess 41-3: Werner 41-4: Genchi	UKSB II **Keynote Lecture** 42-1: Wong 42-2: Dugan 42-3: Moronkeji				
12	37-5: Lopez 37-6: Ding	38-3: Fisher	39-5: Koivisto 39-6: Maazouz	40-5: Kruppke 40-6: Hadjicharalambous	41-5: D'Sa 41-6: Nazhat	42-4: Campagnolo 42-5: Rutledge				
13	Lunch & posters, in Exhibition Hall						YSF Rapidfire poster session IV	Presentation uploads and Speaker Preview: Room 7 Open from 08:00	Springer: JMS:MiM Editorial Board meeting. **Invite only**	ICF-BSE Fellows Annual meeting. **Invite only**
14	**Plenary Lecture**: Molly Shoichet									
15	Biomaterials IX 43-1: Miyazaki 43-2: Ahmed 43-3: Walsh 43-4: Birdi	Symp: Translational 44-1: Therin 44-2: McDougall	Tissue Eng V 45-1: Pandis 45-2: Criscenti 45-3: Bax 45-4: Shirosaki	Clinical I 46-1: Vashaghian 46-2: Gorgieva 46-3: Linti 46-4: Mizuta	Stem Cells V 47-1: Neves 47-2: Kok 47-3: Mano 47-4: Shariatzadeh	UKSB III **Alan Wilson Prize:** 48-1: Paul Hatton				
	Afternoon Tea with posters, in Exhibition Hall									
16	Biomaterials X: Bioglass 49-1: Li 49-2: Aro 49-3: Albeshti 49-4: Chen	Symposium: Translational Research 50-1: Vestberg 50-2: Vardar 50-3: Mansourian 50-4: Mogosanu	Tissue Engineering VI 51-1: Oliveira 51-2: Finne-Wistrand 51-3: Brunelli 51-4: Garziano	Clinical II 52-1: Navarro 52-2: Spazierer 52-3: Kehoe 52-4: Borzacchiello	Biomaterials XI: Hydrogels 53-1: Auzély-Velty 53-2: Halacheva 53-3: Melchels 53-4: Wieduwild	UKSB IV 54-1: de Cogan 54-2: Kasbekar 54-3: Tronci 54-4: Gallagher				
17	49-5: Solanki 49-6: Engel 49-7: Abou Neel 49-8: Jell	50-5: Grémare 50-6: Chen 50-7: Bloebaum 50-8: Aston	51-5: Sohier 51-6: Kluger 51-7: Babo 51-8: Jensen	52-5: Gonçalves 52-6: Rosa Aguilar 52-7: Farè 52-8: Bosworth	53-5: Mao 53-6: Chen 53-7: Wieringa 53-8: Kayabolen	54-5: Trzcinska UKSB AGM			Elsevier: Biomaterials Editorial Board meeting. **Invite only**	
18										
19										
20	Gala dinner (Ticket only)									
21										
22+										

Wednesday, 3rd September

	Auditorium, Rm 1	Room 3	Room 11	Room 1B	Room 1C	Room 4	Exhibition Area	Room 7
8	**Plenary Lecture**: Larry Hench						Exhibition Hall open at 08:00. Posters and exhibition open until 14:00. Posters **MUST** be removed by 14:00	Presentation uploads and Speaker Preview: Room 7 Closes at 13:30
9	**Symposium**: Women in Sci 55-1: Natesan 55-2: Huang 55-3: Ashworth 55-4: Anwar 55-5: Hama Rashid	**Symposium**: Bioactive Glass 56-1: Salinas 56-2: Jones 56-3: Frantzen 56-4: Lindfors	**Biomaterials XII** 57-1: Keriquel 57-2: Moreau 57-3: Anselme 57-4: de Wild 57-5: Nelson 57-6: Chen	**Tissue Engineering VII** 58-1: Silva 58-2: Fermor 58-3: Pandit 58-4: Shepherd 58-5: Kamata 58-6: Ronan		**UKSB V** **Keynote Lecture** 59-1: Akhtar 59-2: McLister 59-3: Reardon 59-4: Popov 59-5: Tanner		
10								
	Morning Coffee Break with posters in Exhibition Hall							
11	**Symposium**: Women in Sci 60-1: Curran 60-2: Gonzalez 60-3: McNamara 60-4: Posadowska 60-5: Kubok 60-6: Paredes	**Symposium**: Bioactive Glass 61-1: Boccaccini 61-2: Nedelec 61-3: Hatton 61-4: Wu 61-5: Vallittu 61-6: Pou	**Biomaterials XIII** **Keynote Lecture** 62-1: Deng 62-2: Barata 62-3: Larsen 62-4: Gelinsky 62-5: D'Amora	**Tissue Engineering VIII** 63-1: Corté 63-2: Larranagae 63-3: Galea 63-4: Aktürk 63-5: Gautrot 63-6: Ghanaati		**UKSB VI** 64-1: Gough 64-2: Prosser 64-3: Andrews 64-4: Blaker UKSB Closing ceremony & intro to Hench awardee		
12								
13	Lunch & posters, in Exhibition Hall						YSF Rapidfire poster session V	
14	**International Award Presentation**: James Anderson							
15	**Biomaterials XIV** 65-1: Covarrubias 65-2: Min 65-3: Novoa-Carballal 65-4: Teixeira 65-5: Iwasaki 65-6: Mano	**Symposium**: Bioactive Glass **Hench Awardee** 66-1: Biggs 66-2: Miller 66-3: Gentleman 66-4: Langford 66-5: Obata	**Biomaterials XV** 67-1: Weiss 67-2: Osypova 67-3: Lewandowska-Szumiel 67-4: Hyde 67-5: Barros 67-6: Bosworth			**Bone V** 68-1: Wyszomirska 68-2: Engel 68-3: Díez-Escudero 68-4: Cholas 68-5: Golozar 68-6: Pasang		
16	Closing Ceremony, Travel/Conference awards	66-6: Cormack 66-7: Hanna 66-8: Hill 66-9: Law 66-10: Hanna 66-11: Li 66-12: Macon						
17								
18								
19								
20								
21								
22+								

Exhibitors

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Key Dates

Call for Symposia: will open on September 15, 2014: New Frontier topics only; proposals for topics that are covered by the Scientific Sessions below will not be considered.
Call for Abstracts: will open on May 15, 2015

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Biomaterials I Hall 1, 09:30 - 10:30

Chairs: Wim De Jong, National Institute for Public Health and the Environment
Matteo D'Este, AO Foundation
Felicity de Cogan, University of Birmingham

09:30 1-1 **A Viscoelastic, Anisotropic, Hyperelastic Model of the Human Cornea**
Charles Whitford, Natasha Movchan and Ahmed Elsheikh
School of Engineering, University of Liverpool, UK

09:45 1-2 **Bacterial Cellulose as a Support for the Growth of Retinal Pigment Epithelium**
S. Gonçalves, J. Padrão, J. Silva, I. Rodrigues, H. Girão, F. Dourado and L. Rodrigues
Center of Biological Engineering, University of Minho, Portugal

10:00 1-3 **Nanosomes: Novel Drug Delivery Vehicles to treat Glaucoma**
F. de Cogan, L. Hill, P. Morgan-Warren, J. O'Neill, A. Peacock, R. Scott and A. Logan
School of Clinical and Experimental Medicine, University of Birmingham, UK

10:15 1-4 **Emulation of Extracellular Matrix for the Development of Human Corneal Stromal Substitute**
Pramod Kumar, Abhigyan Satyam, Xingliang Fan, Brian Rodriguez, Yuri Rochev, Michael Raghunath, Abhay Pandit and Dimitrios Zeugolis
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

Tissue Engineering I Room 3, 09:30 - 10:30

Chairs: Miguel Gama, Minho University
Ferry Melchels, University Medical Center Utrecht
Hugo Oliveira, Inserm U1026, Biotis

09:30 2-1 **Nanostructured Materials for Tissue Engineering: Nanofibres, Nanoparticles and Nanofilms**
Lucie Bacakova
Department of Biomaterials and Tissue Engineering, Academy of Sciences of the Czech Republic, Prague

09:45 2-2 **Fabrication of Silk Fibroin and High Methoxyl Citrus Pectin(HMP) Based 3D Scaffolds for Bone Tissue Engineering**
Sibel Ataol, Dilek Keskin, Akın Akdağ, Ayşen Tezcaner
Department of Biomedical Engineering, Middle East Technical University, Ankara, Turkey

10:00 2-3 **Regulation of Chondrocyte Spheroid Size using Proline-containing Periodic Peptides**
N. Takata, Y. Morita, Y. Hirano, Y. Futaki and E. Nakamachi
Graduate School of Life and Medical Sciences, Doshisha University, Japan

10:15 2-4 **Hyaluronic Acid Based-Hydrogels Attenuate Inflammatory Receptor and Neurotrophins in IL-1β Induced Inflammation Model of Nucleus Pulposus Cell Cultures**
Isma-Liza Mohd-Isa, David Tiernan, Akshay Srivastava, Peter Rooney and Abhay Pandit
Network of Excellent Functional Biomaterials, National University of Ireland, Galway, Ireland

Stem Cells I Room 11, 09:30 - 10:30

Chairs: Barbara Boyan, Virginia Commonwealth University
Tug ba Dursun, Middle East Technical University
Jerome Sohier, Centre National de la Recherche Scientifique

09:30 3-1 **Osteogenic Activity of Adipose Derived Stem Cells on Micropatterned Collagen-Fibroin Blend Films**
E. Sayin, E. T. Baran, V. Hasirci
Department of Biotechnology, Middle East Technical University, Turkey

09:45 3-2 **Regulation of Mesenchymal Stem Cell Differentiation by Changing the Molecular Structure of Supramolecular Surfaces**
Ji-Hun Seo, Sachiro Kakinoki, Tetsuji Yamaoka and Nobuhiko Yui
Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan

10:00 3-3 **Cell Viability and Cell Attachment of Mesenchymal Stem Cells on Hydroxyapatite/Alginate S.crassifolium Composite Scaffolds**
Decky J. Indrani, Ismail Dilogo, Yuyus Kusnadi
Department of Dental Materials Science, University of Indonesia

10:15 3-4 **The Development and Translation of a Cell Capture Technique for Cell Therapies, Diagnostics and Research**
Nicholas Bryan, Damian Bond, Christopher Stanley and John Alan Hunt
Clinical Engineering, Institute of Ageing and Chronic Disease, University of Liverpool, UK

Drug Delivery I Room 1B, 09:30 - 10:30

Chairs: Giorgio Soldani, IFC-CNR
Kambiz Farbod, Radboud University Medical Center
Coline Jumeaux, Imperial College London

09:30 4-1 **Dynamic Polysaccharide-based Carrier Systems for the Delivery of Biotherapeutics**
Denise N. Bamberger and Peter R. Wich
Institut für Pharmazie und Biochemie, Johannes Gutenberg-Universität Mainz, Germany

09:45 4-2 **Amphiphilic Graft Polyester-g-polysaccharide Copolymers for Sustained Drug Release**
L. Martellotto, J. Buisson, H. Van Den Berghe, J. Coudane
Artificial Biopolymers Department, University Montpellier 1, France

10:00 4-3 **Micro and Nano Systems in Medical Applications**
Vasif Hasirci, Eda Ayse Aksoy and Nesrin Hasirci
Middle East Technical University, Chemistry Dept, Ankara, Turkey

10:15 4-4 **Fibrin-based Microsphere Reservoirs for Delivery of Neurotrophic Factors**
Juhi Samal, Eilis Dowd and Abhay Pandit
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

Dental Biomaterials I Room 1C, 09:30 - 10:30

Chairs: Judith Curran, University of Liverpool
Anas Aljabo, University College London
Sabeel Valappi, University of Liverpool

09:30 5-1 **Synthesis and Evaluation of a Novel POSS-PEG-PLA Hydrogel for Periodontal Applications**
David K. Wang, Srinivas Varanasi, David J.T. Hill, Anne L. Symons, Andrew K. Whittaker and Firas A. Rasoul
Australian Institute for Bioengineering and Nanotechnology, University of Queensland, Brisbane, Australia

09:45 5-2 **Effects of Calcium Phosphate and an Adhesion Promoting Monomer on Strength, Degree of Conversion and Adhesion of Dental Composites**
Anas Aljabo and Anne Young
Biomaterials and Tissue Engineering, University College London, UK

10:00 5-3 **The Bone-Implant Interface – Nano-Osseointegration of Functionally Loaded, Nano-Textured, Human Dental Implants**
Furqan A. Shah, Bengt Nilson, Rickard Brånemark, Peter Thomsen, Anders Palmquist
Department of Biomaterials, University of Gothenburg, Sweden

10:15 5-4 **Morphology, Surface Chemistry and Mechanical Properties of Commercial Guided Tissue Regeneration Membranes**
Pascal Borget, Paul G. Rouxhet and Eric Rompen
Unité de Chimie des Interfaces,Université Catholique de Louvain, Belgium

Biomaterials II Hall 1, 11:00 - 12:30

Chairs: Wim De Jong, National Institute for Public Health and the Environment
Matteo D'Este, AO Foundation
Felicity de Cogan, University of Birmingham

11:00 6-1 **Dense Fibrillated Collagen Transparent Matrices as Artificial Corneas?**
Aurelien Tidu, Djida Ghoubay, Barbara Lynch, Céline De Sousa, Frank Wendel, Jean-Marc Allain, Vincent Borderie, Gervaise Mosser
Sorbonne Université, Paris, France

11:15 6-2 **Cytotoxicity of Terbium-Crown Ether Complex Against Acanthamoeba sp. - A Causative Agent for Eye Keratitis**
Eny Kusrini, Fatimah Hashim, Dewi Tristantini, Nurfatin Solehah Bustaman and Nakisah Mat Amin
Department of Chemical Engineering, Faculty of Engineering, Universitas Indonesia

11:30 6-3 **Biodegradable Nanoneedles for Intracellular Sensing of Enzymatic Activity**
Ciro Chiappini, Paola Campagnolo, Carina Almeida, Lesley Chow, Molly M. Stevens
Department of Materials, Imperial College London, UK

11:45 6-4 **Biosurface Induced Protein Manipulation for Measurement of Dynamic Platelet Function**
D. Bishop, J. Cowman, E. Dunne, D. Kenny, A. Boyd and B. Meenan
Nanotechnology and Integrated Bioengineering Centre, University of Ulster, UK

12:00 6-5 **Targeted Gene Delivery into Peripheral Nervous System Mediated by Trimethyl Chitosan Nanoparticles**
Carla Pereira Gomes, Aida Varela-Moreira, Maria Gomez-Lazaro, Michael Leitner, Andreas Ebner, Peter Hinterdorfer, Ana Paula Pêgo
Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

12:15 6-6 **Nanoscale Neuroelectrode Modification Through Self-Assembly of Block Copolymers**
Parvaneh Mokarian-Tabari, Catalina Vallejo-Giraldo, Marc Fernandez-Yague, Cian Cummins, Michael A. Morris and Manus J.P. Biggs
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway

Tissue Engineering II Room 3, 11:00 - 12:30

Chairs: Miguel Gama, Minho University
Ferry Melchels, University Medical Center Utrecht
Hugo Oliveira, Inserm U1026, Biotis

11:00 7-1 **Stimulation of Angiogenesis by Growth Factor-free Porous Adhesive Films Made by Hexanoyl Group Modified Gelatin**
Keiko Yoshizawa, Temmei Ito, Ryo Mizuta and Tetsushi Taguchi
Graduate School of Pure and Applied Science, University of Tsukuba, Japan

11:15 7-2 **Development of PLLA/BTO Nanofiber Sheet for Bone Tissue Engineering**
A. Yamano, Y. Morita and E. Nakamachi
Graduate School of Life and Medical Sciences, Doshisha University, Japan

11:30 7-3 **Preparation and Characterization of PHBV Porous Nanofibers**
Lan-Xin Lyu, Ning-Ping Huang and Ying Yang
State Key Laboratory of Bioelectronics, Southeast University, China

11:45 7-4 **Fabrication and Characterization of Carbon Nanotube Membranes for Neural Tissue Engineering**
Sevde Altuntas, Buket Altınok, Belma Aslım, Fatih Buyukserin
Micro and Nanotechnology Graduate Program, TOBB Univ. of Econ. & Technology, Ankara, Turkey

12:00 7-5 **A Degradable Chitosan-graft-poly(ε-Caprolactone) Copolymeric Biomaterial Supports the Growth of Wharton's Jelly Mesenchymal Stem Cells for Soft Tissue Engineering**
Amalia Skarmoutsou, Costas Charitidis, Maria Kaliva, Charalampos Pontikoglou, Maria Vamvakaki, Maria Chatzinikolaidou
Department of Materials Science and Technology, University of Crete, Greece

12:15 7-6 **Application of Natural BMP Modulators on Bone Tissue Engineering**
Guo-Chung Dong and Chun-Hsu Yao
Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Taiwan

Stem Cells II Room 11, 11:00 - 12:30

Chairs: Barbara Boyan, Virginia Commonwealth University
Tug ba Dursun, Middle East Technical University
Jerome Sohier, Centre National de la Recherche Scientifique

11:00 8-1 **Substrate-Mediated Nanoparticle/Gene Delivery to MSC Spheroids and the Applications in Peripheral Nerve Regeneration**
Ting-Chen Tseng and Shan-hui Hsu
Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan

11:15 8-2 **Influence of Inner Organization of Nerve Guide on Rat Bone Marrow Stem Cells (rBMSCs)**
T. Dursun, D .Yücel, V. Hasırcı
BIOMATEN, Middle East Technical University Center of Excellence in Biomaterials and Tissue Engineering, Ankara, Turkey

11:30 8-3 **Designing 3D Cell Niches Exploiting Peptide Self-Assembly**
Victoria L. Workman, Aline F. Miller and Alberto Saiani
School of Materials, University of Manchester, UK

11:45 8-4 **Effect of Zinc-Containing Tricalciumphosphate (ZnTCP) on Growth and Osteogenic Differentiation of Mesenchymal Stem Cells**
Joshua Chou, Jia Hao, Hirokazu Hatoyama, Besim Ben-Nissan, Bruce Milthorpe, Makoto Otsuka
Advanced Tissue Regeneration and Drug Delivery Group, University of Technology Sydney, Australia

12:00 8-5 **High-Throughput Quantitative Chondrogenic Assay for Stem Cell Differentiation**
Amy Prosser, Colin Scotchford, Virginie Sottile, and David Grant
Division of Materials Mechanics and Structures, University of Nottingham, UK

12:15 8-6 **Advances in Raman Micro-Spectroscopy for Label-free Monitoring Differentiation of Stem Cells In-Vitro**
Ioan Notingher
School of Physics and Astronomy, University of Nottingham, United Kingdom

Drug Delivery II Room 1B, 11:00 - 12:30

Chairs: Giorgio Soldani, IFC-CNR
Joana Magalhaes, Instituto de Salud Carlos III
Coline Jumeaux, Imperial College London

11:00 9-1 **Substrate Mediated Enzyme Prodrug Therapy**
A.N. Zelikin
Department of Chemistry, Aarhus University, Denmark

11:15 9-2 **Mesoporous SiOZO-plex: Mechanistic Approach, Complex of Nanoparticles of SiO2-ZnO with DNA for Therapeutic Applications**
Vijay Bhooshan Kumar, Koushi Kumar, Yitzhak Mastai, Aharon Gedanken, Pradip Paik
School of Engineering Sciences and Technology, University of Hyderabad, India

11:30 9-3 **Estimation of Drug Loading Efficiency in Microspheres by "Shake Flask" Method**
C.Y. Tham, Z. A Abdul Hamid, Z. Ahmad, H. Ismail
School of Materials and Mineral Resources Engineering, Universiti Sains Malaysia, Seri Ampangan, Malaysia

11:45 9-4 **Suzuki Coupling-Functionalized Boronic Acid Nanoparticles for Drug Delivery**
André J. van der Vlies and Urara Hasegawa
Graduate School of Engineering, Osaka University, Japan

12:00 9-5 **Polymeric Micelles for Hydrogen Sulfide-Based Therapy**
Urara Hasegawa, André J. van der Vlies
Graduate School of Engineering, Osaka University, Japan

12:15 9-6 **Amorphous Coordination Polymer Particles. From Basic Macromolecular Science to Theranostic Applications**
F. Novio, F. Nador, K. Wnuk, M. Borges and D. Ruiz-Molina
Centro de Investigación en Nanociencia y Nanotecnología, Consejo Superior de Investigaciones Científicas, Bellaterra, Spain

Dental Biomaterials II Room 1C, 11:00 - 12:30

Chairs: Judith Curran, University of Liverpool
Anas Aljabo, University College London
Sabeel Valappi, University of Liverpool

11:00 10-1 **Potential Use of 7-dehydrocholesterol Coated Titanium Surfaces for Soft Tissue Integration of Dental Implants**
Manuel Gómez-Florit, María Satué, Joana M. Ramis and Marta Monjo
Group of Cell Therapy and Tissue Engineering, University of the Balearic Islands, Spain

11:15 10-2 **Studying Interaction between Oral Mucosa and Titanium by SEM in Humans**
Francesco Tessarolo, Cristiano Tomasi, Federico Piccoli, Iole Caola, Patrizio Caciagli and Giandomenico Nollo
Bruno Kessler Foundation, Trento, Italy

11:30 10-3 **Synthesis and Characterisation of Novel Diopside Glass-Ceramics for Dentistry**
J. Almuhamadi, N. Karpukhina and M. Cattell
Institute of Dentistry, Queen Mary University of London, UK

11:45 10-4 **Functionally Graded Guided Tissue Regenerative (GTR) Membrane for Periodontal Lesions**
S Qasim, R Delaine-Smith, A. Rawlinson, I. Rehman
Materials Science and Engineering Department, University of Sheffield, UK

12:00 10-5 **Bioactivity Investigations with Calcia Magnesia Based composites**
Emad Ewais, Amira Moustafa, Karoline Pardun, Kurosch Rezwan
Advanced Materials Department, Central Metallurgical R&D Institute, Cairo, Egypt

12:15 10-6 **Characterisation of Partially-Demineralised Dentine is a Prerequisite for Remineralisation Studies**
Eleanor Ashworth, Cheryl Miller, Christopher Deery and Nicolas Martin
School of Clinical Dentistry, University of Sheffield, UK

Fellows of Biomaterials Symposium Hall 1, 13:30 - 16:00

Chair: Joachim Kohn, Rutgers University

The Race between engineering and biology in replacing human tissues.

The chair will define this challenge, a take vote of the audience. There will then be 6, 15 minute talks from a panel of current FBSE fellows:

14:00 **Barbara Boyan,** Virginia Commonwealth University

14:15 **Rui Reis**, University of Minho

14:30 **Abhay Pandit**, National University of Ireland Galway

14:45 **Cristina Tanzi**, Politecnico di Milano

15:00 **John Kao**, University of Wisconsin - Madison

15:15 **David Williams**, Wake Forest Institute of Regenerative Medicine

who will expound, sometimes controversially, their own points of view about the argument.

Following the talks there will be a Q & A session and finally a vote of the audience.

YSF Entrepreneurship Workshop Room 3, 13:30 - 16:00

Chairs: Lorenzo Moroni, University of Twente
Sandra Van Vlierberghe, University of Gent
Anna Wistrand, KTH Royal Institute of Technology

The workshop will give a flavour of what it takes to create spin-off companies from innovative research activities that take place at Universities, as well as in Industry. Talks will span from personal experiences in facing the challenges of setting up a spin-off, to the availability of educational programmes and important points to consider when applying for patents.

The afternoon has an extensive spectrum of experienced experts in entrepreneurship:

13:35 **Dirk Grijpma**, University of Twente

14:00 **Dietmar Hutmacher**, Queensland University of Technology and Technical University of Munchen

14:25 **Jens Thies**, DSM, The Netherlands

14:50 **Chris Sutcliffe**, University of Liverpool

15:10 **Alex Sim**, AMSBIO Ltd

15:35 **Chris Unsworth,** Business Gateway, University of Liverpool

European Doctoral Awards Hall 1, 16:30 - 17:30

Chair: Dirk Grijpma, University of Twente

16:30 **Award presentations**
Dirk Grijpma
University of Twente, the Netherlands

16:40 14-1 **Periodontal Regeneration by Combining Melt Electrospinning With Fused Deposition Modelling and Cell Sheet Technologies**
Pedro Costa
Technische Universität München, Germany

16:50 14-2 **Development of a Pro-Angiogenic Cell-Delivery Vehicle Based on RGD-Alginate Hydrogels**
Silvia Bidarra
University of Porto, Portugal

17:00 14-3 **The Osteogenic Potential of Human Mesenchymal Stem Cells - Connections to Inflammation and Infection**
Cecilia Granéli
University of Gothenburg, Sweden

17:10 14-4 **Influence of Sintering Conditions on the Properties of Porous TiO2 Bone Scaffolds**
Hanna Tiainen
University of Oslo, Norway

17:20 14-5 Biomaterials for 2D and 3D Bio-Hybrid Robotic Devices
Leonardo Ricotti
Scuola Superiore Sant'Anna, Itlay

Bone I Hall 1, 09:00 - 10:30

Chairs: Liang Yo Yang, Taipei Medical University
Oscar Castaño, Institute for Bioengineering of Catalonia
Thomas Miramond, Biomatlante

09:00 15-1 **Self-Healing Hybrid Nanocomposites Based on Bisphosphonated Hyaluronan and Calcium Phosphate Nanoparticles for Bone Regeneration**
Reza Nejadnik, Xia Yang, Matilde Bongio, Hamdan S. Alghamdi, Jeroen J.J.P. van den Beucken, Marie C. Huysmans, John A. Jansen, Jöns Hilborn, Dmitri Ossipov and Sander C.G. Leeuwenburgh
Department of Chemistry-Ångström, Uppsala University, Sweden

09:15 15-2 **Development of Novel LZ-8 protein-Containing Porous Composite Sponge Scaffold for Biomedical Applications: Biocompatibility Evaluation and an Animal Study in Rabbit**
Chia-Yin Chen, His-Jen Chiang, Li-Hsiang Lin, Keng-Liang Ou
Graduate Institute of Biomedical Materials and Tissue Engineering, Taipei Medical University, Taiwan

09:30 15-3 **Phase Constitution and Heat Treatment Behaviour of Ti-Mn-Sn Beta Type Alloys**
Masahiko Ikeda, Masato Ueda and Mitsuo Niinomi
Department of Chemistry and Materials Engineering, Kansai University, Japan

09:45 15-4 **Hyaluronic Acid Bound Bisphosphonates As A Novel Therapeutic Strategy For Osteoporosis**
Sujit Kootala, Dmitri Ossipov, Xia Yang, Yu Zhang and Jöns Hilborn
Department of Chemistry/Polymer Chemistry, Uppsala University, Sweden

10:00 15-5 **Influence of Anchor Strand Related Parameters on Immobilized Amount and Hybridization Efficiency in a Nucleic Acid-based Immobilization System for Titanium Implants**
Cornelia Wolf-Brandstetter, Jan Michael, René Beutner, Bernd Schwenzer, Henning Schliephake, Dieter Scharnweber
Institute of Materials Science, TU Dresden, Germany

10:15 15-6 **Functional Octapeptide Hydrogel to Bone Repair Applications**
Luis Castillo, Alberto Saiani, Julie Gough and Aline Miller
Manchester Interdisciplinary Biocentre, University of Manchester, UK

Biomaterials III Room 3, 09:00 - 10:30

Chairs: Dietmar Hutmacher, Queensland University of Technology
Rui Reis, University of Minho
Patrik Stenlund, SP Technical Research Institute of Sweden

09:00 16-1 **Pro-inflammatory Response to Novel Gelatin-based Biomaterials with Tailorable Mechanical Properties in vitro**
Sandra Ullm, Anne Krueger, Tim P. Gebauer, Axel T. Neffe, Christoph Tondera, Andreas Lendlein, Friedrich Jung, Jens Pietzsch
Institute of Radiopharmaceutical Cancer Research, Helmholtz-Zentrum Dresden-Rossendorf, Germany

09:15 16-2 **Dissecting the Regulating Cues of the Extracellular Matrix in Macrophage Plasticity**
Katja Franke, Liv Kalbitzer, Jiranuwat Sapudom, Ulf Anderegg, Sandra Franz and Tilo Pompe
Institute of Biochemistry, Universität Leipzig, Germany

09:30 16-3 **Carbon Monoxide Releasing Nanoparticles**
Ryosuke Inubushi, André J. van der Vlies, Hiroshi Uyama and Urara Hasegawa
Graduate School of Engineering, Osaka University, Japan

09:45 16-4 **Effect of Hydrophobic Groups on the Bonding Strength of Cod-Derived Gelatins-Based Tissue Adhesives**
Tetsushi Taguchi, Temmei Ito, Ryo Mizuta, Keiko Yoshizawa
Biomaterials Unit, National Institute for Materials Science, Japan

10:00 16-5 **Examination of Local and Systemic Inflammatory and Immunological Reactions Following Implantation of Jellyfish Collagen Matrices in Rats**
Uwe Walschus, Susanne Meyer, Silke Lucke, Andreas Hoene, Udo Meyer, Michael Schlosser
Department of Medical Biochemistry and Molecular Biology, University Medical Center Greifswald, Germany

10:15 16-6 **Sulfated Hyaluronan Derivatives Interfere with TGF-β1 Signalling**
V. Hintze, A. van der Smissen, S. Samsonov, L. Huebner, S. Rother, D. Scharnweber, S. Moeller, M. Schnabelrauch, M. T. Pisabarro, U. Anderegg
Max Bergmann Center of Biomaterials, Technische Universität Dresden, Germany

Cardiovascular I: TECAS-ITN Room 11, 09:00 - 10:30

Chairs: Dimosthenis Mavrilas, University of Patras
Petra Mela, RWTH Aachen

09:00 17-1 **Vascular Network Generation in Hyaluronic Acid by Micromolding and Photoimmobilization of Fibronectin**
A. Kömez, E. T. Baran, N. Hasirci, V. Hasirci
Department of Biotechnology, Middle East Technical University, Turkey

09:15 17-2 **Collagen(I)-Poly(Glycerol Sebacate)/Poly(Butylene Succinate-Dilinoleate) Fibrous Scaffolds for Cardiac Tissue Engineering**
Marwa Tallawi, David C. Zebrowski, Aga Kozlowska, Mirka El Fray, Felix B. Engel, Aldo R. Boccaccini
Institute of Biomaterials, University of Erlangen-Nuremberg, Germany

09:30 17-3 **Tri-Culture of Vascular Cells Promotes Vascular Tissue Remodeling**
Caroline Loy, Lucie Levesque, Jayachandran Kizhakkedathu, Diego Mantovani
Lab for Biomaterials and Bioengineering, Laval University, Quebec, Canada

09:45 17-4 **Nanofibrous Vascular Grafts Releasing Nitric Oxide**
Jana Horakova, Connor McCarthy, Megan Frost, Jeremy Goldman, David Lukas, Petr Mikes
Department of Nonwovens and Nanofibrous Materials, Technical University of Liberec, Czech Republic

10:00 17-5 **Electrospun Silk Fibroin/Gelatin Composite Tubular Matrices as Scaffolds for Small Diameter Blood Vessel Regeneration**
Chiara Marcolin, Valentina Catto, Federica D'Agostino, Serena Bertoldi, Silvia Farè, Maria Cristina Tanzi
Department of Chimica, Materiali e Ingegneria Chimica "G. Natta", Politecnico di Milano, Italy

10:15 17-6 **Design and synthesis of supramolecular biomaterials for in-situ cardiovascular tissue engineering**
Olga JGM Goor, Geert C van Almen and Patricia YW Dankers
Institute for Complex Molecular Systems, Eindhoven University of Technology, The Netherlands

Imaging I Room 1B, 09:00 - 10:30

Chairs: Julie Gough, University of Manchester
Gavin Jell, University College London
Alfredo Ronca, National Research Council of Italy

09:00 18-1 **Tissue Response and Degradation of Novel Gelatin-Based Biomaterials in vivo: Insights from Small Animal Multimodal Imaging**
Christoph Tondera, Sandra Ullm, Sebastian Meister, Tim P. Gebauer, Axel T. Neffe, Andreas Lendlein, Jens Pietzsch
Institute of Radiopharmaceutical Cancer Research, Helmholtz-Zentrum Dresden-Rossendorf, Germany

09:15 18-2 **Systemically Injected Gold-Silica Hybrid Nanovectors for Combined Cancer Therapy and Imaging**
Coline Jumeaux, Ciro Chiappini, Rona Chandrawati, Matthew Hembury, Glenna L. Drisko, Cédric Boissière, Clément Sanchez, Alexandra Porter, Molly M. Stevens
Department of Materials, Imperial College London, London

09:30 18-3 **Superparamagnetic Iron Oxide Nanoparticles Stabilized by Dextrin Nanogel: New Nanomagnetogel as Contrast Agent for Magnetic Resonance Imaging. Biodistribution**
Catarina Gonçalves, Yoann Lalatonne, Liliana Melro, Giorgio Badino, Miguel Ferreira, Laurence Motte, Carlos Geraldes, José Alberto Martins, F. M. Gama
Centre for Biological Engineering, Minho University, Braga, Portugal

09:45 18-4 **A Non-Toxic Additive to Introduce X-Ray Contrast into Poly(lactic acid)s**
Leo H. Koole, Daniel G. Molin and Yujing Wang
Department of Biomedical Engineering, Maastricht University, The Netherlands

10:00 18-5 **Novel Technique to Map the Biomechanical Properties of Entire Articular Surfaces Using Indentation to Identify Early Osteoarthritis-like Regions**
Sotcheadt Sim, Anik Chevrier, Martin Garon, Eric Quenneville and Michael D. Buschmann
Biomomentum Inc., Canada

10:15 18-6 **Polymer Coating for in vivo MR Visualization of Tissue Reinforcement Prostheses**
X. Garric, S. Blanquer, O. Guillaume, V. Letouzey, L. Lemaire, F. Franconi, R. DeTayrac, J. Coudane
IBMM, Artificial Biopolymers Group, Montpellier, France

Antimicrobials, Biofilms and Surfaces Symposium, part 1 Room 4, 09:00 - 10:30

Chairs: Steven Percival, Scapa Healthcare
Sara Svensson, University of Gothenburg
Kenny Omoniala, De Montford University

09:00 19-1 **s. Aureus Evades Leukocyte Antimicrobial and Mesenchymal Stromal/stem Cell Immunomodulatory Functions**
David Antonio Cantu, Warren E. Rose, Peiman Hematti, Weiyuan John Kao
School of Pharmacy, University of Wisconsin-Madison, USA

09:15 19-2 **Preparation and Characterisation of an Antibacterial Silver-doped Nanoscale Hydroxyapatite Paste**
Caroline Wilcock, Monazza Fatima, Piergiorgio Gentile, Graham Stafford, Cheryl Miller, Yulia Ryabenkova, Guenter Möbus, Paul Hatton
Centre for Biomaterials and Tissue Engineering, University of Sheffield, UK

09:30 19-3 **Comparisons of the Properties of Linear and Highly-Branched Poly(N-isopropyl acrylamide) with Ligands that Bind Bacteria**
P. Teratanatorn, R. Hoskins, J. Shepherd, K. Swindells, T. Swift, L. Swanson, S. MacNeil, I. Douglas, S. Rimmer
University of Sheffield, UK

09:45 19-4 **Nanoscale Characterization of Cationic Polymeric Brushes and Bacterial Interactions Probed by Force Microscopy**
Merve Gultekinoglu, Yoo Jin Oh, Memed Duman, Peter Hinterdorfer and Kezban Ulubayram
Faculty of Pharmacy, Hacettepe University, Turkey

10:00 19-5 **Effect of pH and Biofilm Formation on Extracellular Matrix Synthesis in Normal and Chronic Wound Fibroblasts**
Eleri M Jones, Steven Percival, Peter Clegg, John A Hunt and Christine A Cochrane
Institute of Ageing of Chronic Disease, University of Liverpool, UK

10:15 19-6 **Hybrid Material (Chitosan Hydrogel/Bioceramic) Loaded with Ciprofloxacin or Simvastatin for Bone Reconstruction**
Claudia Flores, Jean Christophe Hornez, Feng Chai, Gwenael Raoul, Juergen Siepmann, Joel Ferri, Bernard Martel, H. Frederic Hildebrand, Nicolas Blanchemain
INSERM U1008, Biomaterials Research Group, University Lille 2, France

Bone II Hall 1, 11:00 - 12:30

Chairs: Liang Yo Yang, Taipei Medical University
Oscar Castaño, Institute for Bioengineering of Catalonia
Thomas Miramond, Biomatlante

11:00 20-1 **Development of Bisphosphonate-functionalized Gelatin Nanoparticles for Application in Colloidal Hydrogels for Bone Regeneration**
K. Farbod, J.A. Jansen and S.C.G. Leeuwenburgh
Department of Biomaterials, Radboud University Medical Center, The Netherlands

11:15 20-2 **Tough Silica/PCL Hybrid Materials for Tissue Regeneration**
F. Tallia, L. Russo, L. Gabrielli, L. Cipolla, J.R. Jones
Department of Materials, Imperial College London, UK

11:30 20-3 **New Gelatine Functionalized Hybrid Sol-gel Coatings for Titanium Implants**
I. Lara-Sáez, M. Martínez-Ibáñez, S. Barros, A. Coso, J. Franco, M. Gurruchaga, J. Suay, I. Goñi
Biomaterials and Tissue Engineering Center, Universitat Politècnica de València, Spain

11:45 20-4 **On the Applicability of Magnesium-containing Layered Double Hydroxides as Novel Implant Coating Materials**
Marc D. K. Kieke, Andreas Weizbauer, Franziska Duda, M. Imran Rahim, Philip Dellinger, Stefan Budde, Thilo Flörkemeier, Julia Diekmann, Nils K. Prenzler, Muhammad Badar, Peter P. Müller, Hansjörg Hauser, Sabine Behrens, Kai Möhwald, Friedrich Wilhelm Bach, Hans J. Maier, Thomas Lenarz, Henning Windhagen, Peter Behrens
Institute for Inorganic Chemistry, Leibniz University of Hannover, Germany

12:00 20-5 **Fatigue Characterization of Two Bone Cements Tested Using Various Methods over a Range of In Vitro Stress Amplitudes**
E.M. Sheafi and K.E. Tanner
School of Engineering, University of Glasgow, UK

12:15 20-6 **Functionalization of Titanium Surfaces with αvβ3 and α5β1 Integrin Selective Peptidomimetics: Influence on Osteoblast-like Cell Behavior**
Roberta Fraioli, Florian Rechenmacher, Stefanie Neubauer, José María Manero, Javier Gil, Horst Kessler, Carlos Mas-Moruno
Biomaterials, Biomechanics and Tissue Engineering Group, Universitat Politècnica de Catalunya, Spain

Biomaterials IV Room 3, 11:00 - 12:30

Chairs: Dietmar Hutmacher, Queensland University of Technology
Rui Reis, University of Minho
Patrik Stenlund, SP Technical Research Institute of Sweden

11:00 21-1 **Impact of Different Sterilization Methods on the Structure, Biodegradation and Cell Response of Collagen Scaffolds Designed for Peripheral Nerve Regeneration**
Graziana Monaco, Rahmat Cholas, Luca Salvatore, Marta Madaghiele, Alessandro Sannino
Department of Engineering for Innovation, University of Salento, Italy

11:15 21-2 **Artificial Immune Synapses; Nanoscale Control of Immune Cell Activation**
D. Delcassian, D. Depoil, D. Rudnicka, M. Liu, D. M. Davis, M. L. Dustin and I. E. Dunlop
Department of Materials, Imperial College London, UK

11:30 21-3 **New Approaches to Control the Host Response to Gold-based Biomaterials**
Guillaume Le Saux, Annabelle Tanga, Laurent Plawinski, Sylvain Nlate, Jean Ripoche and Marie-Christine Durrieu
Institute of Chemistry & Biology of Membranes & Nanoobjects (UMR 5248), Université Bordeaux, France

11:45 21-4 **Influence of Hyaluronic Acid Molecular Weight on the Biocompatibility of Chitosan/Hyaluronic Acid Multilayer Film**
Jing Jing, Aurélie Moniot, Céline Mongaret, Saad Mechiche-Alami, Romain Reynaud, Frédéric Velard, Sophie C. Gangloff, Loic Jerry, Fouzia Boulmedais and Halima Kerdjoudj
EA 4691 "Biomatériaux et inflammation en site osseux", Université de Reims Champagne-Ardenne, France

12:00 21-5 **Cytotoxicity of Functionalized Ggraphene to Osteoblast-like Cells**
Anke Bernstein, Dirk Heinrich, Norbert P. Südkamp, Hermann O. Mayr , Michael Seidenstücker, Ralf Thoman, Markus Stürzel, Rolf Mülhaupt
Department of Orthopedic and Trauma Surgery, Albert Ludwig University of Freiburg, Germany

12:15 21-6 **Subcutaneous Evaluation Of a Novel Pro-angiogenic Biomaterial For In Situ Bone Tissue Engineering Applications**
Hugo Oliveira, Nadege Sachot, Sylvain Catros, Sylvie Rey, Oscar Castano, Joëlle Amedee, Elisabeth Engel
Inserm U1026, Tissue Bioengineering, University Bordeaux Segalen, France

Cardiovascular II: TECAS-ITN Room 11, 11:00 - 12:30

Chairs: Dimosthenis Mavrilas, University of Patras
Petra Mela, RWTH Aachen

11:00 22-1 **Gene Targeting Nanoparticles to Mediate Proliferation and Migration of Human Vascular Endothelial Cells**
Yakai Feng, Juan Lv, Jing Yang and Changcan Shi
School of Chemical Engineering and Technology, Tianjin University, China

11:15 22-2 **Developing Multi-layered Vascular Grafts from a Novel Collagen and Elastin Biomaterial**
Alan J. Ryan, Fergal J. O'Brien
Tissue Engineering Research Group, Royal College of Surgeons in Ireland

11:30 22-3 **Elastomeric Biomaterials of Enhanced Microbiological and Mechanical Performance for Heart Assisting Devices**
A. Piegat, M. Piatek-Hnat, Z. Staniszewski, R. Kustosz, M. Gonsior, M. El Fray
West Pomeranian University of Technology, Szczecin, Poland

11:45 22-4 **Supercritical Carbon Dioxide (sc-CO2) Assisted Decellularisation of Aorta**
Selcan Guler, Pezhman Hosseinian, Esin Akbay, Mehmet Ali Onur, Halil Murat Aydin
Bioengineering Division, Hacettepe University, Ankara, Turkey

12:00 22-5 **Hemocompatibility Assessment of Uncoated and Heparin Coated Styrenic Block Copolymers for Cardiovascular Applications**
Jacob Brubert, Joanna Stasiak, Geoff Moggridge and Hans Peter Wendel
Department of Chemical Engineering and Biotechnology, University of Cambridge, UK

12:15 22-6 **Capillary Morphogenesis of Primary Endothelial Mono- and Co-cultures in starPEG-Heparin Hydrogels for Controlled Vascularization**
Uwe Freudenberg, Karolina Chwalek, Mikhail V. Tsurkan, and Carsten Werner
Leibniz Institute of Polymer Research Dresden (IPF), Max Bergmann Center of Biomaterials, Dresden, Germany

Meaning of Surface Charge for Characterisation Symposium Room 1B, 11:00 - 12:30

Chairs: Christine Körner, Anton Paar GmbH

11:00 23-1 **The Zeta Potential as Indicator for Solid Surface Charge**
Christine Körner and Thomas Luxbacher
Anton Paar GmbH, Austria

11:30 23-2 **Zeta Potential: a Useful Tool to Interpret the Hydrothermally Treated Titanium Behaviour as Biomaterial**
Martina Lorenzetti, Thomas Luxbacher, Spomenka Kobe and Saša Novak
Department of Nanostructured Materials, Jožef Stefan Institute, Ljubljana, Slovenia

12:00 23-3 **The Role of Porosity on the Z-Potential of Calcium Phosphate Cements**
Montserrat Espanol, Gemma Mestres, Thomas Luxbacher and Maria-Pau Ginebra
Department of Materials Science and Metallurgical Engineering, Technical University of Catalonia, Spain

Antimicrobials, Biofilms and Surfaces Symposium, part 2 Room 4, 11:00 - 12:30

Chairs: Steven Percival, Scapa Healthcare
Sara Svensson, University of Gothenburg
Kenny Omoniala, De Montford University

11:00 24-1 **The Effect of Surface Oxygen Functional Groups on Parylene C Biocompatibility - Comparison of MG-63 Cells Adhesion and Bacteria Strains Attachment**
M. Gołda-Cępa, M. Brzychczy-Włoch, K. Envall, A. Kotarba
Faculty of Chemistry, Jagiellonian University, Krakow, Poland

11:15 24-2 **Coating Nonwoven Polyester Textile Antibacterial Wound Dressing**
François Aubert-Viard, Oumaïra Rahmouni, Adeline Martin, Feng Chai, Nicolas Tabary, Christel Neut, Bernard Martel and Nicolas Blanchemain
INSERM U1008, Biomaterial Research Group, University Lille 2, France

11:30 24-3 **Keratinocyte and Fibroblast Adhesion on an Antibacterial Peptide Surface Coating**
A. Leong, M. Willcox
School of Optometry and Vision Science, UNSW, Sydney, Australia

11:45 24-4 **Blood Compatible Antimicrobial Polymers with Degradable Backbone**
K. Fukushima, K. Kishi, Y. Inoue, C. Sato, A. Sasaki and M. Tanaka
Department of Polymer Science and Engineering, Yamagata University, Japan

12:00 24-5 **Combinatorial Approach to Composition-Structure-Property Relationships in an Antibacterial Ag-Ti Thin Film**
Erik Unosson, Daniel Rodriguez, Ken Welch, Håkan Engqvist
Department of Engineering Sciences, Uppsala University, Sweden

12:15 24-6 **Biofilms Bioreactors: An Infection concern in Medical Devices and biomaterials**
Steven L Percival, Rebecca Booth and Sean Kelly
Institute of Ageing and Chronic Disease, University of Liverpool, UK

Materials for the Future: University of Liverpool Outreach Event Hall 1, 16:00 - 19:30

Chair: John Hunt, University of Liverpool

This outreach event will introduce a series of world-expert speakers who will present some of the issues for providing new materials, in a sustainable manner, to meet the needs of an ageing and ever-increasing population. The speakers will provide insight into how new research is providing diverse material solutions such as nano-medicines, stem cell therapies, and high performing next generation medical implants. Delegates will include the ESB 2014 delegation and then also University of Liverpool academics, alumni, industry partners, and civic leaders. The afternoon will showcase world-leading research from the University of Liverpool. There will be a series of talks from:

16:10 **Anthony Hollander,** University of Liverpool

16:25 **Steve Rannard,** University of Liverpool

16:40 **Chris Sutcliffe,** University of Liverpool

16:55 **Raphael Levy,** University of Liverpool

17:40 **Stephen Minger**, GE Healthcare

18:05 **Molly Shoichet**, University of Toronto

18:30 **Joachim Kohn**, Rutgers University

18:55 **David Williams**, Wake Forest Institute of Regenerative Medicine

Biomaterials V Room 3, 16:00 - 18:00

Chairs: James Anderson, Case Western Reserve University
Veronique Migonney, Université Paris XIII
Gloria Huerta-Angeles, Contipro Pharma

16:00 26-1 **Formation of Multicellular Spheroids on Arrayed Microwells with Microstructure**
Masahito Ban, Yuuya Kogi
Graduate School, Nippon Institute of Technology, Japan

16:15 26-2 **The Role of CD68-Positive Macrophages in the Biocompatibility of Biomaterials a Peritoneal Adhesion Prevention Model**
Christoph Brochhausen, Volker H. Schmitt, Andreas Mamilos, Constanze N. E. Planck, Bernhard Krämer, Taufiek K. Rajab, Helmut Hierlemann, Heinrich Planck, C. James Kirkpatrick
Institute of Pathology, University Medical Centre Mainz, Germany

16:30 26-3 **Swelling Gradients of Multilayers Mediate Directional Cell Migration**
Lulu Han, Zhengwei Mao, Jindan Wu, Yang Guo, Tanchen Ren, Changyou Gao
MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Zhejiang University, China

16:45 26-4 **Improvement of Graphene Nanoplatelet Biocompatibility by Surface Oxidation**
Artur Pinto, Carolina Gonçalves, Daniela Sousa, Agostinho Moreira, Inês Gonçalves, Fernão Magalhães
LEPABE, Faculdade de Engenharia, Universidade do Porto, Portugal

17:00 26-5 **Ibuprofen-Loaded Scaffolds for Spinal Cord Injury Regeneration – Targeting RhoA at the Lesion Site**
Liliana R Pires, Cátia DF Lopes, Daniela N Rocha, Luigi Ambrosio, Mónica M Sousa, Ana Paula Pêgo
INEB – Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

17:15 26-6 **A Role for Platelet CD154 in the Foreign Body Reaction to Biomaterial**
Annabelle Tanga, Sébastien Lepreux, Julien Villeneuve, Nelly Bordeau, Christian Combe, Alexis Desmoulière, Shahram Ghanaati, Jean Ripoche
INSERM U1026, Bordeaux University, France

17:30 26-7 **The Mechanical Behavior and Biocompatibility of Polymer Blends for Patent Ductus Arteriosus (PDA) Occlusion Device**
Ying Ying Huang, Yee Shan Wong and Subbu S. Venkatraman
School of Materials Science and Engineering, Nanyang Technological University, Singapore

17:45 26-8 **Hydrolytic and Oxidative Degradation of Electrospun Supramolecular Biomaterials: In Vitro Degradation Pathways**
M. Brugmans, S. Sontjens, M. Rubbens, A. Nandakumar, A. Bosman, T. Mes, H. Janssen, C. Bouten, F. Baaijens and A. Driessen-Mol
Xeltis B.V., Eindhoven, The Netherlands

European Orthopaedic Research Society Symposium Room 11, 16:00 - 18:00

Chairs: Geoff Richards, AO Foundation
Thomas Miramond, Biomatlante
Sujit Kootala, Uppsala University

16:00 27-1 **Incorporation of RANKL Promotes Osteoclast Formation and Osteoclast Activity on β-TCP Ceramics**
J. Choy, C.E. Albers, K.A. Siebenrock, S. Dolder, W. Hofstetter, F.M. Klenke
Department of Clinical Research, University of Bern, Switzerland

16:15 27-2 **Calcium Phosphate Graft Substitute: When the Impact of Innovation is in the Form Rather Than Content**
Francisco Braga, Antonio Carlos da Silva, Sérgio Allegrini, Cyro Ottoni
CCTM/IPEN, CNEN, Brazil

16:30 27-3 **EPA-Coated Implants Promote Osteoconduction in White New Zealand Rabbits**
Ammar Mustafa, Christie Lung, Jukka Matinlinna
ISF Consultancy Hospital (Lekhwiya), Doha, Qatar

16:45 27-4 **Tailored Ca2+ Release in Hybrid Fibrous Scaffolds for Efficient Osteo- and Angiogenesis**
Oscar Castaño, Nadège Sachot, Elena Xuriguera, Elisabeth Engel, Josep A. Planell, Jeong-Hui Park, Guang-Zhen Jin, Tae-Hyun Kim, Joong-Hyun Kim and Hae-Won Kim
Institute for Bioengineering of Catalonia, Barcelona, Spain

17:00 27-5 **The Wear and Biological Activity of Antioxidant UHMWPEs in Total Hip Replacements**
Nic Gowland, Sophie Williams, John Fisher, Joanne L Tipper
Institute of Medical & Biological Engineering, University of Leeds, UK

17:15 27-6 **Chitosan-Hyaluronic Acid Based Porous Scaffold for Bone Regeneration**
Jing Jing, Jérôme Josse, Céline Mongaret, Saad Mechiche-Alami, Romain Reynaud, Dominique Laurent-Maquin, Sophie C. Gangloff, Frédéric Velard and Halima Kerdjoudj
EA 4691 "Biomatériaux et inflammation en site osseux", Université de Reims Champagne-Ardenne, France

17:30 27-7 **Superficial Zn-Doping into Biomaterials is Better than Bulk Doping**
Yuqin Qiao and Xuanyong Liu
State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, China

17:45 27-8 **Assessment of the Biodegradability of Ultrafine PCL Fibers Reinforced Calcium Phosphate Cement**
Yi Zuo, Boyuan Yang, Fang Yang, Qin Zou, Jidong Li, Yubao Li and J.A.Jansen
Research Center for nano Biomaterials, Sichuan University, China

Drug Delivery III Room 1B, 16:00 - 18:00

Chairs: M Cristina Tanzi, Politecnico di Milano
Yan Yan Shery Huang, University of Cambridge
Alfredo Ronca, National Research Council of Italy

16:00 28-1 **Biocomposites Containing Collagen, D-Amino Acids and Phytosome Nanoparticles as Drug Carriers and Tissue Engineering Scaffolds**
Krishnamoorthy Ganesan, Thotappalli Parvathaleswara Sastry, Asit Baran Mandal and Mukesh Doble
CSIR-Central Leather Research Institute, Tamil Nadu, India

16:15 28-2 **Supramolecular Anticancer Nanostructures Formed via Self-Assembly of Curcumin Amphiphiles**
Koji Nagahama, Naho Oyama and Takayuki Kumano
Department of Nanobiochemistry, Konan University, Japan

16:30 28-3 **Silica/Collagen Nanocomposites for Local and Sustained Release of Therapeutic Biomolecules**
Xiaolin Wang, Christophe Hélary and Thibaud Coradin
Sorbonne Université, Paris, France

16:45 28-4 **Biomimetic Thin Films as Reservoirs for BMP-2**
Flora Gilde, Raphael Guillot, Laure Fourel, Ofelia Maniti, Thomas Boudou, Corinne Albigès-Rizo and Catherine Picart
UMR 5628 (LMGP), Grenoble Institute of Technology, France

17:00 28-5 **Novel Tool in Nanomedicine: Completely Biocompatible and Biodegradable Superparamagnetic Hydroxyapatite Nanoparticles**
S. Panseri, M. Montesi, M. Sandri, E. Savini, M. Iafisco, A. Adamiano, M. Ghetti, G. Cenacchi, A. Tampieri
Institute of Science and Technology for Ceramics, National Research Council, Faenza (RA), Italy

17:15 28-6 **Antioxidant Delivery for Inhibition of Angiogenesis**
Masaki Moriyama, Stéphanie Metzger, Martin Ehrbar, André J. van der Vlies, Hiroshi Uyama and Urara Hasegawa
Graduate School of Engineering, Osaka University, JAPAN

17:30 28-7 **Design of Biodegradable pH-Responsive Microgels as Targeted Drug Delivery System**
Miren K. Aiertza, Pablo Casuso, Adrián Pérez-San Vicente, Hans-Jurgen Grande, Germán Cabañero, Iraida Loinaz and Damien Dupin
Biomaterials Unit, IK4-CIDETEC, Spain

17:45 28-8 **A Biotemplating Approach Using the Marine Diatom for Fabricating Drug Delivery Reservoirs**
J. Chao, Y. Lang, A. Abdul-Rahman, M. Biggs, A. Pandit
Network of Excellence for Functional Biomaterials (NFB), National University of Ireland, Galway, Ireland

Biomaterials VI Room 1C, 16:00 - 18:00

Chairs: Mario Barbosa, University of Porto
Paul Santerre, University of Toronto
Pedro Granja, University of Porto

16:00 29-1 **Effect of Mesoscale Structure on the Properties of Composite Scaffold: from Micro to Nano**
Limei Li, Yi Zuo, Jidong Li, and Yubao Li
Research Center for nano Biomaterials, Sichuan University, China

16:30 29-2 **Factors Influencing Injectability of Nano-Hydroxyapatite Paste: a Rheological Behaviour**
Yulia Ryabenkova, Guenter Moebus, Paul V Hatton, Cheryl A Miller
Department of Materials Science and Engineering, University of Sheffield, UK

16:45 29-3 **Designing Biodegradable and Biocompatible Crosslinked Film from Polycarbonate Urethane and Zwitterionic Polynorbornene as Cell Growth Substrate**
Yakai Feng, Musammir Khan, Juan Lv, Jing Yang and Gregory Tew
School of Chemical Engineering and Technology, Tianjin University, China

17:00 29-4 **Periodic Mesoporous Organosilica (PMO) Coatings for Biomedical Applications**
Natalja Wendt, Mandy Jahns, Nina Ehlert, Sabrina Schlie, Boris Chichkov, Peter Behrens
Institut für Anorganische Chemie, Leibniz Universität Hannover, Germany

17:15 29-5 **Polymer Based Scaffolds with Microwave Induced Porosity**
Antonella Giuri, Vincenzo Maria De Benedictis, Maria Grazia Raucci, Christian Demitri, Alessandro Sannino
Department of Engineering for Innovation, University of Salento, Lecce, Italy

17:30 29-6 **Fabrication of Carbonate Apatite Coated Calcite and its In Vivo Evaluation**
Kunio Ishikawa, Kanji Tsuru, Melvin L. Munar, Masako Fujioka-Kobayashi, Youji Miyamoto
Department of Biomaterials/Faculty of Dental Science, Kyushu University, Japan

17:45 29-7 **Polysaccharide Based Nanocarriers for Antioxidants**
Ornella Bossio, Laura G. Gómez-Mascaraque, Mar Fernández-Gutiérrez, Blanca Vázquez-Lasa, Julio San Román
Institute of Polymer Science and Technology, CSIC, Madrid, Spain

Antimicrobials, Biofilms and Surfaces Symposium, part 3 Room 4, 16:00 - 18:00

Chairs: Steven Percival, Scapa Healthcare
Kazuki Fukushima, Yamagata University
Alma Akhmetova, Nazarbayev University

16:00 30-1 **Effect of Kassinin and Collagen Fibrils on Cell Spreading and De-adhesion Dynamics**
Edna George, Pradeep Kumar Singh, Samir Maji and Shamik Sen
Department of Bioscience & Bioengineering, Indian Institute of Technology (IITB), India

16:15 30-2 **Fast Acting Antibacterial 45S5 Bioglass® Scaffolds Reinforced with Gelatin/Genipin for Bone Tissue Engineering**
Wei Li, Hui Wang, Seema Agarwal and Aldo Boccaccini
Institute of Biomaterials, University of Erlangen-Nuremberg, Germany

16:30 30-3 **Living Biointerfaces Based on Non-Pathogenic Bacteria to Direct Cell Function**
Aleixandre Rodrigo-Navarro, Patricia Rico, Anas Saadeddin, Andres J. Garcia, Manuel Salmeron-Sanchez
Division of Biomedical Engineering, University of Glasgow, UK

16:45 30-4 **Self-Disinfecting Urinary Biomaterials: pH-Triggered Quinolone Release for Prevention of Catheter-Associated Urinary Tract Infections**
Colin P. McCoy, Nicola J. Irwin, Christopher Brady, Louise Carson, David S. Jones, Sean P. Gorman
School of Pharmacy, Queen's University Belfast, UK

17:00 30-5 **Apatite Promoting, Low Modulus Composite Bone Cements with Low Heat Generation upon Set and High Subsequent Antibacterial Release**
Muhammad Adnan Khan, Anne Young
UCL, Eastman Dental Institute, London

17:15 30-6 **Toward Potent Antibiofilm Degradable Medical Devices: Generic Methodologies for the Surface Modification of Polylactide**
Benjamin Nottelet, Carla Sardo, Sarah El Habnouni, Xavier Garric, Vincent Darcos, Jean-Philippe Lavigne, Gennara Cavallaro and Jean Coudane
Institute of Biomolecules Max Mousseron (IBMM - CNRS UMR 5247), Université Montpellier I, France

17:30 30-7 **Controlled Release of Gentamicin from Gold Nanocarriers**
Stefano Perni and Polina Prokopovich
School of Pharmacy and Pharmaceutical Sciences, Cardiff University, UK

17:45 30-8 **Plasma Nanofilm as Biocompatible and Antibacterial Coating for Biomaterials**
Michael Bergmann, Sebastian Lickert, Loic Ledernez, Gregory Dame and Gerald Urban
Department of Microsystems Engineering, Albert-Ludwigs-University of Freiburg, Germany

Biomaterials VII: Bioglass Hall 1, 09:00 - 10:30

Chairs: Paul Hatton, University of Sheffield
Maria Grazia Raucci, National Research Council of Italy
Marco Lopez, University of Marburg

09:00 31-1 **Fluoride-Containing Bioactive Glasses – from Structure to Cell Compatibility**
D. S. Brauer, E. Gentleman, R. G. Hill and N. Karpukhina
Otto Schott Institute of Materials Research, Friedrich Schiller University Jena, Germany

09:15 31-2 **Atomic Structure of Mg-Based Metallic Glasses for Biomedicine**
Jamieson Christie
Department of Chemistry, University College London, K

09:30 31-3 **Bioactive Glass Nanoparticles for Therapeutic Applications and Incorporation into Hybrids for Bone Regeneration**
Sarah Greasley, Jesse V. Jokerst, Sanjiv S. Gambhir, Alexandra E. Porter, Julian.R. Jones
Department of Materials, Imperial College London, UK

09:45 31-4 **Antitumor Efficacy of Radioactive Holmium (166Ho) Containing Silica Sol-gel Glass Granules on Osteosarcoma (MG-63) and Breast Cancer (MCF-7) Cells in Vitro**
Riku Alaranta, Jessica J Alm, Kaisa Lehtimäki, Heimo Ylänen, Tapio Ollonqvist and Hannu T Aro
Orthopaedic Research Unit, University of Turku, Finland

10:00 31-5 **Hybrid PLGA/Bioactive Glass Fiber Scaffolds for Bone Tissue Engineering**
Anne-Marie Haaparanta, Timo Lehtonen, Ville Ellä, Peter Uppstu, Markus Hannula, Ari Rosling and Minna Kellomäki
Biomaterials and Tissue Engineering Group, Tampere University of Technology, Finland

10:15 31-6 **Development of Novel 45S5 Bioglass® Scaffolds with Fibrous Surface Morphology using Electroflocking Technology for Bone Tissue Engineering**
Preethi Balasubramanian and Aldo R Boccaccini
Institute of Biomaterials, University of Erlangen-Nuremberg, Germany

Translational Research Symposium, part 1 Room 3, 09:00 - 10:30

Chairs: Marc Bohner, RMS Foundation
David Eglin, AO Foundation
Yves Bayon, Covidien

09:00 32-1 **Translation of Science to the Clinic: Where Preclinical Research Fits in the Model**
R. Geoff Richards
AO Research Institute Davos, Switzerland

09:30 32-2 **Innovation and Product Development in a Changing Regulatory and Socio-economical Environment**
Andrea Montali
DePuy Synthes Biomaterials R&D, Oberdorf, Switzerland

10:00 32-3 **Development of Dedicated Tools for Personalization of Medical Devices**
Lara Vigneron, Daniel Daryaie, Sebastian De Boodt, Lars Neumann
Biomedical Engineering Department, Materialise NV, Belgium

Tissue Engineering III Room 11, 09:00 - 10:30

Chairs: Guy Daculsi, University of Nantes
Pamela Habibovic, University of Twente
Nina Parmar, University College London

09:00 33-1 **Modulation of Cell Microenvironment Using Macromolecular Crowding: A Self Assembly Approach Towards In Vitro Organogenesis**
Abhigyan Satyam, Pramod Kumar, Xingliang Fan, Yury Rochev, Lokesh Joshi, Héctor Peinado, David Lyden, Benjamin Thomas, Brian Rodriguez, Michael Raghunath, Abhay Pandit and Dimitrios Zeugolis
Network of Excellence for Functional Biomaterials, National University of Ireland Galway, Ireland

09:15 33-2 **Collagen Plasma Treatment of Poly-(ether-ether)-ketone for Improved Cell Attachment**
Jessica S Hayes, Declan M Devine, Mary Murphy
Orthobiologics, Regenerative Medicine Institute, National University in Galway, ireland

09:30 33-3 **PCL/HA Functional Gradient Scaffold for Osteochondral Tissue Engineering Applications**
Alessandra Marrella and Silvia Scaglione
National Research Council (CNR), IEIIT Institute, Italy

09:45 33-4 **Self-assembled Peptide Gels for Intervertebral Disc Tissue Engineering**
Simon Wan, Alberto Saiani, Stephen Richardson, Julie Gough
School of Materials, University of Manchester, UK

10:00 33-5 **Utilizing Multifunctional Alginate Scaffolds for the Regeneration of Skeletal Muscle Defects in a Rat Crush Trauma Model**
Taimoor Qazi, Matthias Pumberger, Tobias Winkler, Sven Geißler, David Mooney, Georg Duda
Julius Wolff Institute, Charitè - Universitätsmedizin Berlin, Germany

10:15 33-6 **Engineering Hydrogel Polymer Networks for Cell Microencapsulation and Xenotransplantation**
Françoise Borcard, Redouan Mahou, Virginia Crivelli, Elisa Montanari, Raphael P. H. Meier, Yannick Müller, Annalena Bollinger, Carmen Gonelle-Gispert, Jörg D. Seebach, Raphael Plüss, Sandrine Gerber, Léo Bühler, Christine Wandrey
Institut d'Ingénierie Biologique et Institut des Sciences et Ingénierie Chimiques, Ecole Polytechnique Fédérale de Lausanne, Switzerland

Bone III Room 1B, 09:00 - 10:30

Chairs: Keng-Liang Ou, Taipei Medical University
Serena Best, University of Cambridge
John Choy, University of Bern

09:00 34-1 **Development of Osteoconductive Organic-Inorganic Hybrid Materials Based on Calcium Silicates**
Chikara Ohtsuki, Toshiki Miyazaki and Masakazu Kawashita
Graduate School of Engineering, Nagoya University, Japan

09:15 34-2 **Formation of hybrid materials based on calcium phosphate deposit on carbon fiber scaffold**
Q. Picard, S. Delpeux, J. Chancolon, N.Rochet, F. Fayon, F.Warmont, S. Mikhalovski, S. Bonnamy
CRMD, CNRS, University of Orléans, France

09:30 34-3 **Strontium Ion Release from Bioactive Ti Alloys with Ca enriched-Surface Layer**
Seiji Yamaguchi, Tomiharu Matsushita and Tadashi Kokubo
Department of Biomedical Sciences, Chubu University, Japan

09:45 34-4 **Cell-to-cell Communications of Osteocytes with Bone Marrow Cells on Ceramic Biomaterials**
Miho Nakamura, Teuvo Hentunen, Jukka Vääräniemi, Jukka Salonen, Naoko Hori and Kimihiro Yamashita
Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University

10:00 34-5 **Critical Bone Defect Filling with Chitosan/Hydroxyapatite Hybrid Scaffolds in Rats**
Valérie Brun, Christine Guillaume, Julien Braux, Richard Gouron, Romuald Mentaverri, Saad Mechiche Alami, Sylvie Bouthors, Dominique Laurent-Maquin, Sophie C. Gangloff, Halima Kerdjoudj, Frédéric Velard
EA 4691 BIOS, University of Reims Champagne-Ardenne, France

10:15 34-6 **Fibrinogen Implants for Bone Regeneration: Short- and Long-Term In Vivo Responses**
Daniel M. Vasconcelos, Raquel M. Gonçalves, Susana G. Santos, Catarina R. Almeida, Inês Odila, Marta I. Oliveira, Nuno Neves, Andreia M. Silva, António C. Ribeiro, Elisabeth Seebach, Katharina L. Kynast, Thomas Niemietz, Wiltrud Richter, Meriem Lamghari, Mário A. Barbosa
INEB, University of Porto, Portugal

Stem Cells III Room 1C, 09:00 - 10:30

Chairs: Molly Shoichet, University of Toronto
Manuel Salmeron-Sanchez, University of Glasgow
Anna Guildford, University of Brighton

09:00 35-1 **Nanoscale Control of Mesenchymal Stem Cells**
Matthew J Dalby, P Monica Tsimbouri, Laura McNamara, Enateri Alakpa, Lesley-Anne Turner, Rebecca McMurray, Louisa CY Lee, Jingli Yang, Habib Nikukar, Gabriel Pemberton, Terje Sjostrom, Peter Childs, Jugal Sahoo, Vineetha Jayawarna, Christopher West, Karl Burgess, Stuart Reid, Bo Su, Maggie Cusack, Nikolaj Gadegaard, Rein V Ulijn, RM Dominic Meek, Bruno Peault, Richard OC Oreffo
Centre for Cell Engineering, University of Glasgow, UK

09:30 35-2 **Photo-Crosslinkable Biopolymers Targeting Stem Cell Differentiation: the Candidature of Gelatin**
Ine Van Nieuwenhove, Sandra Van Vlierberghe, Winnok De Vos, Achim Salamon, Kirsten Peters and Peter Dubruel
Polymer Chemistry and Biomaterials Group, Ghent University, Belgium

09:45 35-3 **Investigating the "Bone-Shell Divide": Pearl Oyster Shell Topography as a Means of Directing Stem Cell Behaviour**
Enateri V. Alakpa, Matthew J. Dalby and Maggie Cusack
Centre for Cell Engineering, University of Glasgow, UK

10:00 35-4 **Generation of 3D Functional Microvascular Networks with Mural Cell-Like Human Mesenchymal Stem Cells in Microfluidic Systems**
S. Bersini, J. Jeon, RD Kamm and M. Moretti
IRCCS Istituto Ortopedico Galeazzi, Milan, Italy

10:15 35-5 **Atmospheric Pressure Plasma Treatment Increases the Attachment and Maturation of Human Pluripotent Stem Cell Derived Retinal Pigment Epithelial Cells on Biodegradable Polymeric Electrospun Scaffolds**
A. Sorkio, P. Porter, K. Juuti-Uusitalo, B. Meenan, H. Skottman and G. Burke
BioMediTech, University of Tampere, Finland

UKSB I: Welcome & President's Prize Room 4, 09:00 - 10:30

Chairs: Adrian Boyd, University of Ulster
Colin Scothford, Unviersity of Nottingham

09:00 **Welcome and Introduction to the UKSB Annual Meeting**
Sanjukta Deb
King's College London, UK

09:30 36-1 **The Drive for Simplicity in Delivering Cells to the Clinic - Clever Cells and Dumb Scaffolds**
Sheila MacNeil
Department of Materials Science & Engineering, University of Sheffield, UK

Biomaterials VIII: Bioglass Hall 1, 11:00 - 12:30

Chairs: Paul Hatton, University of Sheffield
Maria Grazia Raucci, National Research Council of Italy
Muhammad Hasan, Dalhousie University

11:00 37-1 **Functionalising Natural Polymers with Alkoxysilane Coupling Agents for Tissue Engineering Applications**
Louise S Connell, Frederik Romer, Oliver Mahony, Mark E Smith, John V Hanna and Julian R Jones
Department of Materials, Imperial College London, UK

11:15 37-2 **Composition-Structure-Property Relationships for Strontium Borate Glasses for Biomedical Applications**
Muhammad Sami Hasan and Daniel Boyd
Department of Applied Oral Sciences, Dalhousie University, Halifax, NS, Canada

11:30 37-3 **Unravelling the Structure of Bioglass® through the Application of Diffraction Techniques**
Richard Martin
School of Engineering & Aston Research Centre for Healthy Ageing, Aston University, UK

11:45 37-4 **Surface Functionalisation of Sol-Gel-Based Bioactive Glass Scaffolds for Drug Delivery**
A. Philippart, A. M. Beltrán, L. Pontiroli, C.Vitale-Brovarone, E. Spiecker and A. R. Boccaccini
Institute of Biomaterials, University Erlangen-Nürnberg, Germany

12:00 37-5 **In Vitro Assessment of 3D Printed Wollastonite – Apatite-Based Glass Ceramic Biomaterials**
M.A. Lopez-Heredia, A. Zocca, C. Gomes, J. Günster, R. Gildenhaar, P. Colombo and C. Knabe-Ducheyne
Dept. of Experimental Orofacial Medicine, Philipps University, Marburg, Germany

12:15 37-6 **Fabrication and Characterization of Electrospun PHB/PCL/Sol-gel Derived Glass Hybrid Scaffolds**
Yaping Ding, Teresa Müller, Judith A. Roether, Dirk W. Schubert, Aldo R. Boccaccini
Institute of Polymer Materials, University of Erlangen-Nuremberg, Germany

Translational Research Symposium, part 2 Room 3, 11:00 - 12:30

Chairs: Marc Bohner, RMS Foundation
David Eglin, AO Foundation
Yves Bayon, Covidien

11:00 38-1 **Development of a Competitive Calcium Phosphate Cement in a Crowded Marketplace**
Philip Procter
Medical Device Industry Consultant, Divonne les Bains, France

11:30 38-2 **The Commercial and Clinical Challenges and Opportunities for Advanced Materials in Regenerative Medicine**
Kevin M Shakesheff
School of Pharmacy, University of Nottingham, UK

12:00 38-3 **Stratification and Personalisation of Biomaterials and Medical Devices in Musculoskeletal Disease**
John Fisher
Institute of Medical and Biological Engineering, University of Leeds, UK

Tissue Engineering IV Room 11, 11:00 - 12:30

Chairs: Guy Daculsi, University of Nantes
Pamela Habibovic, University of Twente
Nina Parmar, University College London

11:00 39-1 **Layer-by-Layer Assembly of Collagen and Fibronectin for Tissue Engineering Applications**
Sara Mauquoy and Christine Dupont-Gillain
Institute of Condensed Matter and Nanosciences (IMCN), Université Catholique de Louvain, Belgium

11:15 39-2 **Alginate-Silica Hybrid Hydrogels Through Covalent Coupling with APTES**
Yuliya Vueva, Siwei Li, Frederik Romer, John V. Hanna, Julian R. Jones
Department of Materials, Imperial College London, UK

11:30 39-3 **The Effects of Current Density on the Morphology, Electrochemical and Biological Characteristics of Poly(3,4ethylenedioxythiophene): Poly(styrenesulfonate) (PEDOT-PSS) Conducting Films**
Catalina Vallejo-Giraldo, Abhay Pandit, Manus Jonathan Paul Biggs
Network of Excellence for Functional Biomaterials (NFB), National University of Ireland, Galway, Ireland

11:45 39-4 **Biomimetic Scaffolds for Annulus Fibrosus Regeneration**
Sébastien B.G. Blanquer, Arjen W.H. Gebraad, Suvi P. Haimi, Susanna Miettinen, André A. Poot and DirkW. Grijpma
Dept. of Biomaterials Science and Technology, University of Twente, Enschede, The Netherlands

12:00 39-5 **Development of Bioamine Cross-linked Gellan Gum Hydrogels as Soft Scaffolds for Neural Tissue Engineering**
J. Koivisto, Sh. Teymouri, J.E. Parraga, T.O. Ihalainen, K. Aalto-Setälä, M. Kellomäki
Laboratory for Biomaterials and Tissue Engineering, Tampere University of Technology, Finland

12:15 39-6 **Thermoresponsive Self-Setting Calcium Phosphate Pastes for Minimally Invasive Surgery and Solid Freeform Fabrication**
Yassine Maazouz, Edgar Montufar, Julien Malbert, Maria-Pau Ginebra
Dept. Materials Science and Metallurgical Engineering, Technical University of Catalonia, Barcelona, Spain

Bone IV Room 1B, 11:00 - 12:30

Chairs: Keng-Liang Ou, Taipei Medical University
Matteo Santin, University of Brighton
John Choy, University of Bern

11:00 40-1 **Cholecalciferol Synthesized After UV-Activation of 7-Dehydrocholesterol onto Titanium Implants Inhibits Osteoclastogenesis In Vitro**
María Satué, Joana M. Ramis and Marta Monjo
Group of Cell Therapy and Tissue Engineering, University of the Balearic Islands, Spain

11:15 40-2 **Mapping Phase Changes in Brushite Cements**
A. Bannerman, R.L. Williams and L.M. Grover
School of Chemical Engineering, University of Birmingham, UK

11:30 40-3 **Biomaterial Induced Bone Nodules without Medium Supplements**
S. Mechiche Alami, J. Hemmerlé, F. Boulmedais, J. Josse, P. Schaaf, S.C. Gangloff, F. Velard, D. Laurent-Maquin, H. Kerdjoudj
EA 4691 "Biomatériaux et inflammation en site osseux", Université de Reims Champagne-Ardenne, France

11:45 40-4 **Fibronectin Loaded Hydroxyapatite for Reduced Healing Time on Osteoporotic Rabbit Bone**
Javier Quintana-Plaza, Luis M. Rodríguez-Lorenzo
Polymeric nanomaterials and Biomaterials/ICTP-CSIC, Madrid, Spain

12:00 40-5 **Mineralization of Phosphate Prestructured Gelatine – Bulk Preparation and Characterization as Bone Substitute**
Benjamin Kruppke, Hartmut Worch and Thomas Hanke
Max Bergmann Center of Biomaterials, Technische Universität Dresden, Germany

12:15 40-6 **Adhesion, Growth and Differentiation of Pre-osteoblasts on Novel Porous Magnesia- and Yttria-Stabilized Zirconia Ceramics**
Chrystalleni Hadjicharalambous, Vladimir Promakhov, Svetlana Buyakova, Sergey Kulkov and Maria Chatzinikolaidou
University of Crete, Dept. of Materials Science and Technology, Heraklion, Greece

Stem Cells IV Room 1C, 11:00 - 12:30

Chairs: John Kao, University of Wisconsin-Madison
Manuel Salmeron-Sanchez, University of Glasgow
Anna Guildford, University of Brighton

11:00 41-1 **Mesenchymal Stem Cell Response to Covalent Functionalized Recombinant Fibronectin Fragments onto New Titanium-Niobium-Hafnium Alloy**
C. Herranz-Díez, J. Guillem-Marti, F.J. Gil, J.M. Manero
Biomaterials, Biomechanics and Tissue Engineering Group, Technical University of Catalonia (UPC), Spain

11:15 41-2 **Combined Stimulation with Defined Extracellular Matrices and Pulsed Electrical Fields Enhance Osteogenic Differentiation of Human Mesenchymal Stem Cells**
R. Hess, P. Lee, A. Jaeschke, H. Neubert, T. Henker, V. Hintze, S. Moeller, M. Schnabelrauch, D. A. Hart, H.-P. Wiesmann, D. Scharnweber
Institute of Materials Science / Max Bergmann Center of Biomaterials, TU Dresden, Germany

11:30 41-3 **Influence of Surface Curvature on Human Mesenchymal Stromal Cell Migration and Differentiation**
M. Werner, S. Blanquer, S. Haimi, D. Grijpma, A. Petersen
Dept. of Biomaterials Science and Technology, University of Twente, Netherlands

11:45 41-4 **Zinc Oxide Nanorod Interaction with Rat Mesenchymal Stem Cells**
Giada Graziana Genchi, Antonella Rocca, Virgilio Mattoli, Barbara Mazzolai and Gianni Ciofani
Istituto Italiano di Tecnologia, Pontedera, Italy

12:00 41-5 **Engineering Substrate Topography and Chemistry to Control Mesenchymal Stem Cell Function**
Mohammed Khattak, John Hunt and Raechelle A. D'Sa
Centre for Materials and Structures, University of Liverpool, UK

12:15 41-6 **Gel Aspiration-Ejection Fabricates Anisotropic Injectable Dense Collagen Gels with Controlled Microstructure for Regenerative Medicine**
Showan N. Nazhat, Neysan Kamranpour, Mark James-Bhasin, Amir K. Miri, Chiara E. Ghezzi and Benedetto Marelli
Department of Mining and Materials Engineering, McGill University, Canada

UKSB II Room 4, 11:00 - 12:30

Chairs: Adrian Boyd, University of Ulster
Colin Scothford, Unviersity of Nottingham

11:00 42-1 **Harnessing Scanning Probe Nanolithographies for Cell and Molecular Biology**
Lu Shin Wong
Manchester Institute of Biotechnology, University of Manchester, UK

11:30 42-2 **Photochemical Functionalisation and Patterning of Diamond-Like-Carbon for Electronic Neural Interfaces**
James Dugan and Frederik Claeyssens
Department of Materials Science and Engineering, University of Sheffield, UK

11:45 42-3 **Impact Testing of Skin: Overcoming the Stratum Corneum Barrier for Microneedle Application**
Kikelomo Moronkeji, Simon Todd, Ahmed Elsheikh and Riaz Akhtar
School of Engineering, University of Liverpool, UK

12:00 42-4 **Exploring the Cell-Nanoneedle Interface**
Ciro Chiappini, Jonathan O. Martinez, Enrica De Rosa, Paola Campagnolo, Ennio Tasciotti, Molly M. Stevens
Department of Materials, Imperial College London, UK

12:15 42-5 **Strategies to Enhance the Cellular Response to Bioactive Surfaces**
L. Rutledge, L. Randolf, I. Mutreja, B. Meenan, A. Boyd
NIBEC, University of Ulster, Belfast, UK

Biomaterials IX: Bone Hall 1, 14:30 - 15:30

Chairs: Aldo Boccaccini, University of Erlangen-Nuremberg
Gavin Jell, University College London
Kiruthika Natesan, Plymouth University

14:30 43-1 **Bone-like Apatite Deposition on Chemically Synthesized Collagen in Simulated Body Environment**
Toshiki Miyazaki, Jin Furui and Yuki Shirosaki
Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Japan

14:45 43-2 **In Vivo Study of Resorbable Phosphate Glass fibre Reinforced Composite Bone Fracture Repair Plates**
I. Ahmed, A. Qureshi, A.J. Parsons, C.A. Scotchford, B.E. Scammell, C.D. Rudd
Division of Materials, Mechanics and Structures, University of Nottingham, UK

15:00 43-3 **Marine Inspired Biosilica-Filled Hydrogels for Hard Tissue Repair**
Pamela Walsh, Susan Clarke, Iossif Strehin, Phillip Messersmith
School of Chemistry & Chemical Engineering, Queen's University, Belfast, UK

15:15 43-4 **Elucidating the Biological Role of Soluble Silicon in Early Bone Mineralisation**
Gurpreet Birdi, Richard M. Shelton, James Bowen, Pola Goldberg Oppenheimer and Liam M. Grover
School of Chemical Engineering, University of Birmingham, UK

Translational Research Symposium, part 3 Room 3, 14:30 - 15:30

Chairs: Marc Bohner, RMS Foundation
David Eglin, AO Foundation
Yves Bayon, Covidien

14:30 44-1 **Innovation and Product Development – Example of a leading medical device company**
Yves Bayon, Michel Thérin
Covidien – Sofradim Production, Trevoux, France

15:00 44-2 **Launching and Building a Science-Based Business**
Iain McDougall
Taragenyx Ltd, UK

Tissue Engineering V Room 11, 14:30 - 15:30

Chairs: Nicolas Blancheman, University of Lille 2
Wan Ting Sow, Nanyang Technological University
Anja Thiebes, RWTH Aachen

14:30 45-1 **Chitosan-Silica Hybrids for Biomedical Applications**
Christos Pandis, Estela Pérez Roman, Sara Trujillo, Christos Chatzimanolis-Moustakas, Sotiria Kripotou, Apostolos Kyritsis and José Luis Gómez Ribelles
Physics Department, National Technical University of Athens, Greece

14:45 45-2 **Triphasic Scaffolds for the Regeneration of the Bone-Ligament Interface**
G. Criscenti, A. Di Luca, A. Longoni, P. S. B. de Sousa and L. Moroni
Department of Tissue Regeneration, University of Twente, The Netherlands

15:00 45-3 **Cellular Responses to Elastin-Collagen Composite Scaffolds**
D. Bax, C. Grover, P. Lee, R. Farndale, A. Weiss, S. Best, R. Cameron
Department of Materials Science and Metallurgy, University of Cambridge, UK

15:15 45-4 **Chitosan-Siloxane Porous Scaffold for Nerve Reconstruction**
Yuki Shirosaki, Satoshi Hayakawa, Akiyoshi Osaka, José D. Santos, Ana C. Maurício, Stefano Geuna
Frontier Research Academy for Young Researchers, Kyushu Institute of Technology, Japan

Clinical I Room 1B, 14:30 - 15:30

Chairs: Sheila McNeil, University of Sheffield
Assunta Borzacchiello, National Research Council of Italy
Pradip Paik, University of Hyderabad

14:30 46-1 **Nano-spun Meshes as Scaffolds for Regeneration and Stiffness Remodelling of Pelvic Floor Soft Tissues**
Mahshid Vashaghian, A. Ruiz Zapata, B. Zandie Doulabi, T.H. Smit
Obstetrics & Gynaecology, VU University Medical Center, Amsterdam, The Netherlands

14:45 46-2 **Coating of Polypropylene Mesh with Micro-Structured Gelatine as Potential Biomimetic Composite for Active Hernia Treatment**
Selestina Gorgieva, Maja Kaisersberger Vincek and Vanja Kokol
Institute for Engineering Materials and Design, University of Maribor, Slovenia

15:00 46-3 **Bioresorbable Polymer Based Novel Quick Vascular Closure Device (QVCD)**
Carsten Linti, Michael Doser, Sven Oberhoffner, Erhard Müller, Monika Renardy, Bernd Neumann, Hans-Peter Wendel
Institut für Textil- und Verfahrenstechnik Denkendorf, Germany

15:15 46-4 **Hydrophobically Modified, Cod-Derived Gelatins-Based Surgical Sealants Strongly Adhere onto Blood Vessel under Wet Condition**
Ryo Mizuta, Temmei Ito, Keiko Yoshizawa, Mikio Kajiyama, Toshimasa Akiyama, Katsuhiro Kamiya, Tetsushi Taguchi
Graduate School of life and Environmental Science, University of Tsukuba, Japan

Stem Cells V Room 1C, 14:30 - 15:30

Chairs: Matteo Santin, University of Brighton
Raechelle D'Sa, University of Liverpool
Elisabeth Engel, Institute for Bioengineering of Catalonia

14:30 47-1 **In situ-forming Pectin Hydrogels as Cell Delivery Systems**
SC Neves, DB Gomes, A Sousa, SJ Bidarra, P Petrini, L Moroni, CC Barrias, PL Granja
INEB - Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

14:45 47-2 **Double Layer Nanofiber Sandwich System in Effective Delivery of Growth Factors for Osteogenic Differentiation**
P. S. Gungor-Ozkerim, E. I. Bektas, A. S. Sarac, G.T. Kose, F. N. Kok
Molecular Biology Genetics and Biotechnology Programme, Istanbul Technical University, Turkey

15:00 47-3 **Patient-Customizable Scaffolds with Nano/Microenvironments Rich in Human Platelet's Lysate and Marine-Origin Polysaccharides for Bone Formation Induction**
Sara M. Oliveira, Rui L. Reis, João F. Mano
3B's Research Group – Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal

15:15 47-4 **Effect of Cyclic Compression on Osteogenesis of Self-Assembled Collagen-Cell Seeded Microspheres**
Maryam Shariatzadeh, Cécile M. Perrault, Damien Lacroix
Institute for in silico Medicine, University of Sheffield, UK

UKSB III: Alan Wilson prize Room 4, 14:30 - 15:30

Chairs: John Nicholson, University of Greenwich
Riaz Akhtar, University of Liverpool

14:30 48-1 **The Effect of Extrinsic Tooth Bleaching Agents on Restorative Dental Materials: A Review**
Paul Hatton
School of Clinical Dentistry, University of Sheffield, UK

Biomaterials X: Bioglass Hall 1, 16:00 - 18:00

Chairs: Aldo Boccaccini, University of Erlangen-Nuremberg
Muhammad Hasan, Dalhousie University
Marco Lopez, University of Marburg

16:00 49-1 **Ultra-thin Bioglass Fibres with Controlled Structures for Biomedical Applications**
Yangyang Li, Ding Zhao, Binbin Li, Qiuhong Zhang, Yike Fu, Mingwei Chang, Xiang Li
Department of Materials Science and Engineering, Zhejiang University, China

16:15 49-2 **Serious Adverse Event of Woven Fabrics Made of Bioactive Glass Fibres of the Na2O-K2O-MgO-CaO-B2O3-P2O5-SiO2 System in the Rabbit Spinal Fusion Model**
Janek P. Frantzén, Jessica J. Alm, Petteri Lankinen, Niko Moritz, Matias Röyttä, Hannu T. Aro
Orthopaedic Research Unit, University of Turku, Finland

16:30 49-3 **Towards Promoting Ability of Glass Ionomer Cements to Remineralise**
R. Albeshti, A. Bushby and N. Karpukhina
Institute of Dentistry, Queen Mary University of London, UK

16:45 49-4 **The Retarding Effect of Zinc Oxide on Dissolution and Apatite Formation of a Fluoride Containing Bioactive Glass**
Xiaohui Chen, Priyen Shah, Mohammed Mneimne, Robert G. Hill and Natalia Karpukhina
School of Dentistry, University of Manchester, UK

17:00 49-5 **Hypoxia Mimicking Glasses For Use As Chronic Wound Dressings**
AK Solanki, H Autefage, J Penide, F Quintero, J Pou, JR Jones, MM Stevens
Department of Materials, Imperial College London, UK

17:15 49-6 **Bioactive glasses: Instructive Biomaterials to Control Cell Microenviroment**
Elisabeth Engel, Aitor Aguirre, Nadege Sachot, Oscar Castaño, Arlyng Gonzalez, Miguel A. Mateos-Timoneda, Soledad Pérez-Amodio, Josep A. Planell
Biomaterials for Regenerative Therapies Group, Institute for Bioengineering of Catalonia, Barcelona, Spain

17:30 49-7 **Setting Kinetics and Micromechanical Properties of Flax Fibres Reinforced Restorative Glass Ionomers**
Ensanya A. Abou Neel, Wojciech Chrzanowski, Anne M. Young
Division of Biomaterials, King Abdulaziz University, Jeddah, Saudi Arabia

17:45 49-8 **Hypoxia Mimicking Bioactive Glasses for Chronic Wound Healing**
Maria Azevedo, Siwei Li, Wai Ho, Alex Burns, Luara Schoenewolf, Chris Nayar and Gavin Jell
Division of Surgery & Interventional Science, University College London, UK

Translational Research Symposium, part 4 Romo 3, 16:00 - 18:00

Chairs: Marc Bohner, RMS Foundation
David Eglin, AO Foundation
Yves Bayon, Covidien

16:00 50-1 **Non-Invasive and specific Attachment of Hernia Mesh by Click Chemistry**
R. Vestberg, M. Guerin, A. Radlovic, O. Lefranc, S. Ladet
Covidien, Trévoux, France

16:15 50-2 **Tubular Compressed Collagen Scaffolds Cultured in a Novel Flow-Bioreactor System for Ureter/Urethra Tissue Engineering Application**
Elif Vardar, Eva-Maria Balet, Hans Mattias Larsson, Jeffrey A. Hubbell and Peter Frey
Institute of Bioengineering, École Polytechnique Fèdèrale de Lausanne, Switzerland

16:30 50-3 **Making Medical Stent in the Way of Laser Spot Welding of Stainless Steel Wires L316**
Delaram Mansourian, Mahyar Fazeli and Jamshid Aghazadeh Mohandesi
Department of Material Science and Metallurgy Engineering , AmirKabir University of Technology, Iran

16:45 50-4 **Towards an Implantable Bioreactor: Synthesis and Surface Modification Strategy for a Soft Tissue Engineered Elastomer**
D-E. Mogosanu, J. Vanfleteren, P. Dubruel
Polymer Chemistry and Biomaterials Research Group, Ghent University, Belgium

17:00 50-5 **Development of an Original Model to Investigate Cell Communication in Bone Tissue Engineering**
A. Grémare, A. Aussel, R. Bareille, J. Guerrero, J. Amedee, D. Le Nihouannen
Bioingénierie Tissulaire, U1026, University of Bordeaux, France

17:15 50-6 **Fabrication of Porous Titanium Scaffolds by Stack Sintering of Microporous Titanium Spheres Produced with Centrifugal Granulation Technology**
Hongjie Chen, Xiangdong Zhu, Yujiang Fan, Xingdong Zhang
National Engineering Research Center for Biomaterials, Sichuan University, China

17:30 50-7 **Essential Model for Determining Biomaterial Attachment in Total Joint Replacement**
R. Bloebaum, N. Abdo, R. Olsen, A. Hofmann, J. Chalayon
George E. Wahlen Department of Veterans Affairs, Salt Lake City Health Care System, USA

17:45 50-8 **Incorporation of Polyelectrolyte Complexes into Alginate Hydrogels and their Effect on the Alginate Matrix**
R. Aston, T. Klein, G. Lawrie and L. Grøndahl
School of Chemistry and Molecular Biosciences, The University of Queensland, Australia

Tissue Engineering VI Room 11, 16:00 - 18:00

Chairs: Nicolas Blanchemain, University of Lille 2
David Shepherd, University of Cambridge
Anja Thiebes, RWTH Aachen

16:00 51-1 **Tissue Engineered Silk-fibroin Scaffolds for Meniscus Regeneration**
Joana Silva-Correia, Hélder Pereira, Le-Ping Yan, Ana Leite Oliveira, João Espregueira-Mendes, Joaquim Miguel Oliveira and Rui Luís Reis
3B's Research Group - Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal

16:15 51-2 **Design Functionalized Polyesters and Widen the Applicability in Porous Degradable 3D Scaffolds**
Anna Finne-Wistrand, Jenny Undin and Ann-Christine Albertsson
Department of Fibre and Polymer Technology, KTH Royal Institute of Technology, Sweden

16:30 51-3 **Investigation of the Role of Shear Stress and Compression Stimuli on Cell Seeded PCL Scaffolds**
M. Brunelli, C. M. Perrault, D. Lacroix
Institute for in silico medicine, University of Sheffield, UK

16:45 51-4 **Engineered Dermal Micro-Tissues For Bottom-Up Tissue Engineering And TOC Applications**
A. Garziano, F. Urciuolo, G. Imparato, P. Netti
University of Naples Federico II, Italy

17:00 51-5 **Jet-Sprayed 3D Nanofibrillar Environment Decreases Myofibroblastic Activation**
Halima Rabehi, Romain Debret, Pascal Sommer, Dominique Sigaudo-Roussel, Jérôme Sohier
Laboratory of Tissue Biology and Therapeutic Engineering (LBTI), CNRS, Lyon, France

17:15 51-6 **Fatty Tissue Equivalents – Build Up with Mature Adipocytes in a Gelatin Hydrogel**
Birgit Huber, Eva Hoch, Günter Tovar, Kirsten Borchers, Petra J. Kluger
Fraunhofer Institute for Interfacial Engineering and Biotechnology, Stuttgart, Germany

17:30 51-7 **Development of Photocrosslinkable Hyaluronan Hydrogels with Platelets lysates for Tissue Regeneration**
Ricardo Leandro Pires, Pedro S. Babo, Rui L. Reis and Manuela E. Gomes
3B's Research Group - Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal

17:45 51-8 **Poly(vinyl alcohol) Physical Hydrogels as Functional, Biodegradable Matrices for Tissue Engineering**
Bettina E. B. Jensen, Katrine Edlund, Anton A. A. Smith, Leticia Hosta-Rigau, Brigitte Städler and Alexander N. Zelikin
Department of Chemistry, Aarhus University, Denmark

Clinical II Room 1B, 16:00 - 18:00

Chairs: Sheila McNeil, University of Sheffield
Assunta Borzacchiello, National Research Council of Italy
Jacob Brubert, University of Cambridge

16:00 52-1 **Calcium Concentrations for the Development of New Bioactive Dressings to Improve Skin Wound Healing**
Claudia Navarro, Soledad Pérez-Amodio, Josep A. Planell and Elisabeth Engel
Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain

16:15 52-2 **Swelling and Sealing Properties of a Novel Hemostatic Biomaterial**
Daniel Spazierer, Paul Slezak and Heinz Gulle
Baxter Innovations GmbH, Vienna, Austria

16:30 52-3 **A Pilot Renal Artery Embolization Study: Evaluation of "Imageable" Embolic Microspheres using Hybrid (Landrace Yorkshire) Farm Pigs**
Sharon Kehoe, Robert Abraham, Charles Daly, Daniel Boyd
ABK Biomedical Inc., Halifax NS, Canada

16:45 52-4 **Optimizing Properties of Bioadhesive Systems using Fermentation Derived Human Albumin**
Assunta Borzacchiello, Luisa Russo, Birgitte M. Malle, Sara Poulsen, Luigi Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council, Naples, Italy

17:00 52-5 **Nanoengineered Biomaterials to Fight Gastric Infection: Exploring the Glycan-Adhesin Specific Interaction**
Inês C. Gonçalves, Ana M. S. Costa, A. Magalhães, Celso A. Reis, M. Cristina L. Martins
INEB - Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

17:15 52-6 **Highly Selective Nanoparticles Based on Vitamin E Derivatives for the Treatment of Cancer**
Raquel Palao, Maria Rosa Aguilar, Mar Fernandez, Juan Parra, Carolina Sánchez, Ricardo Sanz, Julio San Roman
Department of Polymeric Nanomaterials and Biomaterials, ICTP-CSIC, Madrid, Spain

17:30 52-7 **Enhancing In Vitro and In Vivo Viability and Functionality of Pancreatic Islets Through a Gelatine-Based Hydrogel**
Serena Bertoldi, Simona Marzorati, Rita Nano, Lorenzo Piemonti and Silvia Farè
Dept. of Chemistry, Materials, and Chemical Engineering "G. Natta", Politecnico di Milano, Italy

17:45 52-8 **Long-term Degradation of Electrospun Poly(ε-caprolactone) Fibre Yarns In Vivo: A 12-month Study**
Lucy A Bosworth, Richard Wong, Marie A O'Brien, Jason K Wong, Duncan A McGrouther and Sarah H Cartmell
School of Materials, University of Manchester, UK

Biomaterials XI: Hydrogels Room 1C, 16:00 - 18:00

Chairs: Luigi Ambrosio, National Research Council of Italy
Dirk Grijpma, University of Twente
Joana Magalhaes, Instituto de Salud Carlos III

16:00 53-1 **Design of Biomimetic Cell-Interactive Substrates using Hyaluronic Acid Hydrogels with Independently Tunable Stiffness and Biochemical Ligand Density**
Jing Jing, Marc R. Block and Rachel Auzély-Velty
Centre de Recherches sur les Macromolécules Végétales (CERMAV-CNRS), Grenoble, France

16:15 53-2 **Injectable Biocompatible and Biodegradable pH-Responsive Hollow Particle Gels Containing Poly(acrylic acid): The Effect of Copolymer Composition on Gel Properties**
S. Halacheva, D. Adlam, T. Freemont, J. Hoyland and B. Saunders
Institute for Materials Research and Innovation, University of Bolton, UK

16:30 53-3 **Dual Hydrogel System for Bioprinting of Strong Tissue Constructs**
Ferry Melchels, Wouter Dhert, Dietmar W. Hutmacher and Jos Malda
Department of Orthopaedics, University Medical Center Utrecht, The Netherlands

16:45 53-4 **Physical Hydrogels Based on Peptide Oligosaccharide Interaction**
Robert Wieduwild, Mikhail Tsurkan, Carsten Werner and Yixin Zhang
B CUBE Center for Molecular Bioengineering, Technische Universität Dresden, Germany

17:00 53-5 **The Physical Properties of Particles Dominate Cellular Uptake and Subsequent Influences on Cell Functions**
Zhengwei Mao, Weijun Liu, Pengfei Jiang, Dahai Yu, Xiangyan Zhou, Changyou Gao
MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Zhejiang University, China

17:15 53-6 **The Size Effect of PLGA Microspheres on the Controlled-release of Fluorescein Isothiocyanate–Dextran as a Model for Targeting Synovial Macrophages in Vitro**
Rui Chen, Colette Redmond, John Innes and John A. Hunt
Clinical Engineering, Institute of Ageing and Chronic Disease, University of Liverpool, UK

17:30 53-7 **Hybrid Hydrogel/Fiber Construct for Neural Engineering Applications**
P.A. Wieringa, R. Pinho, S. Micera, R. van Wezel, L. Moroni
MIRA, University of Twente, The Netherlands

17:45 53-8 **Decellularized Matrix /Fibroin Injectable Hydrogels for Vascularized Adipose Tissue**
Alisan Kayabolen, Dilek Keskin, Ferit Avcu, Andac Aykan, Fatih Zor and Aysen Tezcaner
Department of Biomedical Engineering, Middle East Technical University, Turkey

UKSB IV Room 4, 16:00 - 18:00

Chairs: John Nicholson, University of Greenwich
Riaz Akhtar, University of Liverpool

16:00 54-1 **Synthetic Defensins: Novel Antibacterial Agents for Surface Attachment**
Felicity de Cogan, Richard Williams, Anna Peacock, Artemis Stamboulis, Liam Grover, Robert Scott & Ann Logan
School of Clinical and Experimental Medicine, University of Birmingham, UK

16:15 54-2 **Development of Decellularised conjunctiva for Ocular Surface Reconstruction**
Shivani Kasbekar, Rosalind Stewart, Stephen Kaye, Rachel Williams and Paul Rooney
Department of Eye and Vision Science, University of Liverpool, UK

16:30 54-3 **Highly Swollen and Compressible Photo-Activated Collagen Hydrogels**
Giuseppe Tronci, Colin A. Grant, Neil H. Thomson, Stephen J. Russell, David J. Wood
Nonwovens Research Group, University of Leeds, UK

16:45 54-4 **Mechanical and Cytotoxic Evaluation of a Novel Hydrogel with Potential Application as a Corneal Bandage**
Andrew Gallagher, Don Wellings and Rachel Williams
Department of Eye and Vision Science, University of Liverpool, UK

17:00 54-5 **Linking Antimicrobial Peptides with the Surface of Metallic Implants**
Zuzanna Trzcińska, Anna Peacock and Artemis Stamboulis
Biomaterials Group, University of Birmingham, UK

17:15 54-6 **UKSB AGM**
Sanjukta Deb
King's College London, UK

Women in Science Symposium, part 1 Hall 1, 09:00 - 10:30

Chairs: Elizabeth Tanner, University of Glasgow
Claudia Loebel, AO Foundation
Monica Golda-Cepa, Jagiellonian University

09:00 55-1 **Reinforcement of Sol-Gel Processed Calcium Phosphate Cement using Functionalised CNTs**
K. Natesan, H. R. Le, C. Tredwin, R. Handy
School of Dentistry, University of Plymouth, UK

09:15 55-2 **Dynamics of Filopodium-Like Protrusion and Endothelial Cellular Motility on 1-D Extracellular Matrix Fibrils**
Niannan Xue, Cristina Bertulli, Amine Sadok, Yan Yan Shery Huang
The Institute of Cancer Research, London, UK

09:30 55-3 **The Importance of Interconnectivity for Cell Invasion and Percolation through Collagen Scaffolds**
J. Ashworth, P. Buxton, T. Hart, S. Best and R. Cameron
Cambridge Centre for Medical Materials, University of Cambridge, UK

09:45 55-4 **Novel Continuous Plastic Flow Synthesis of Phase Pure Nano-Sized Hydroxyapatite**
Aneela Anwar, Jawwad A. Darr
Clean Materials Technology Group, University College London, UK

10:00 55-5 **The Effects of Ascending and Descending Strain Rate on the Mechanical Properties of Canine Cranial Cruciate Ligaments**
Rosti Hama Rashid, Brendan Geraghty, Ahmed Elsheikh and Eithne Comerford
School of Engineering, University of Liverpool, UK

Bioactive Glass Symposium, part 1 Room 3, 09:00 - 10:30

Chairs: Julian Jones, Imperial College London
Richard Langford, University of Cambridge

09:00 56-1 **Larry's Influences: from Bioactive Glasses to Scaffolds for Tissue Engineering and Nanoparticles for Drug Delivery**
M. Vallet-Regí, A. Salinas and D. Arcos
Dpt. Química Inorgánica y Bioinorgánica, Universidad Complutense de Madrid, Spain

09:30 56-2 **Bioactive Glasses: from Hench to Hybrids**
Julian R. Jones
Department of Materials, Imperial College London, UK

10:00 56-3 **Clinical Use of S53P4 Bioactive Glass in Neurosurgery – Case Reports of Tumor Surgery, Infected Cervical Spine and Mucopyelocele of the Frontal Sinuses**
Janek Frantzén
Department of Neurosurgery, Turku University Hospital, Finland

10:15 56-4 **Bioactive Glass S53P4 in the Treatment of Osteomyelitis – Multicenter Study**
Nina Lindfors, Carlo Romano
Helsinki University Central Hospital, Finland

Biomaterials XII Room 11, 09:00 - 10:30

Chairs: James Kirkpatrick, University of Mainz
Giulia Gigliobianco, University of Sheffield
Gloria Huerta-Angeles, Contipro Pharma

09:00 57-1 **In Vivo and In Situ Bioprinting of Cells and Biomaterials to Guide Tissue Repair**
Virginie Keriquel, Sylvain Catros, Sophia Ziane, Reine Bareille, Murielle Rémy, Samantha Delmond, Benoit Rousseau, Joëlle Amédée, Fabien Guillemot and Jean-Christophe Fricain
Inserm U1026, Université Bordeaux Segalen, France

09:15 57-2 **In Vivo Evaluation of Bone Integration of Poly(Vinyl-Alcohol) Hydrogel Fibers for Ligament Reconstruction**
D. Moreau, A. Villain, M. Bachy, D.N. Ku, D. Hannouche, H. Petite and L. Corté
Centre des Matériaux Pierre-Marie Fourt, Mines Paristech, France

09:30 57-3 **Understanding Nuclear Deformation Capacity of Cancer Cells Thanks to Micropillared Surfaces**
Florent Badique, Melanie Eichhorn, Jürgen Rühe, Oswald Prucker, Jean-Noël Freund and Karine Anselme
Mulhouse Materials Science Institute (IS2M), Université de Haute-Alsace, France

09:45 57-4 **Fatigue Behaviour of Selective-Laser-Melted Nickel-Titanium Scaffolds**
Therese Bormann, Bert Müller, Waldemar Hoffmann, David Wendt and Michael de Wild
Institute of Medical and Analytical Technologies, University of Applied Sciences Northwestern Switzerland, Muttenz

10:00 57-5 **3D Printed Silica- Gelatin Hybrid Tissue Scaffolds**
Maria Nelson, Siwei Li, Oliver Mahony, Molly M. Stevens, Gowsihan Poologasundarampillai, Kamel Madi, Peter D. Lee, Julian R. Jones
Department of Materials, Imperial College London, UK

10:15 57-6 **Tailoring Crimp Patterns of Electrospun Fibers by Using Thermal Shrinkage**
H. Chen, D. Baptista, J. Crispim, D. Saris, H. Fernandes, C.A. van Blitterswijk, R. Truckenmuller, L. Moroni
Department of Tissue Regeneration, University of Twente, The Netherlands

Tissue Engineering VII Room 1B, 09:00 - 10:30

Chairs: Matthew Dalby, University of Glasgow
Abhay Pandit, National University of Ireland Galway
Wan Ting Sow, Nanyang Technological University

09:00 58-1 **Real Time Analysis of the Enzymatic Digestion of Chondroitin Sulfate: Role of the Sulfation Pattern**
Carla Silva, Ramon Novoa-Carballal, Rui Reis and Iva Pashkuleva
3B´s Research Group – Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal

09:15 58-2 **Development and Characterisation of a Decellularised Bovine Osteochondral Biomaterial for Cartilage Repair**
Hazel Fermor, Serena Russell, Sophie Williams, John Fisher and Eileen Ingham
Faculty of Biological Sciences, University of Leeds, UK

09:30 58-3 **An Injectable Silk-in-Silk System for Enhanced Proteoglycan Production**
Sumit Murab, Akshay Shrivastava, Juhi Samal, Alok Ranjan Ray, Sourabh Ghosh, Abhay Pandit
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

09:45 58-4 **Anatomically Shaped, Collagen-Fibre Reinforced Device for Meniscal Repair**
Jennifer Shepherd, Daniel Howard, Siddhartha Ghose, Simon Kew, John Wardale, Ruth Cameron, Serena Best
Department of Materials Science and Metallurgy, University of Cambridge, UK

10:00 58-5 **"Nonswellable" Hydrogel without Mechanical Hysteresis**
Hiroyuki Kamata, Ung-il Chung and Takamasa Sakai
Department of Bioengineering, University of Tokyo, Japan

10:15 58-6 **A Collagen-Based Multimodal Delivery System Provides Therapeutic Factors as well as Physical Support for Treatment of Spinal Cord Injury in the Rat**
R. Ronan, H. Kraskiewicz, B. Breen, T. Sargeant, A. Pandit, S. McMahon
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

UKSB V Room 4, 09:00 - 10:30

Chairs: Julie Gough, University of Manchester
Raechelle D'Sa, University of Liverpool

09:00 59-1 **Characterising the Micro- and Nano-mechanical Properties of Ageing and Diseased Soft Tissues**
Riaz Akhtar
Centre for Materials and Structures, University of Liverpool, UK

09:30 59-2 **Nanotubular Titania topography combined with amorphous calcium phosphate chemistry induces direct osteoblastic differentiation in mesenchymal stem cells**
Robert McLister, Mura McCafferty, George Burke, Brian J. Meenan
Biomaterials and Tissue Engineering Group, University of Ulster, Belfast, UK

09:45 59-3 **Microwave-assisted Synthesis of Calcium Phosphate Nanobiomaterials with Controlled Morphology**
P.J.T Reardon, J. Huang, J. Tang
Department of Chemical Engineering and Mechanical Engineering, University College London, UK

10:00 59-4 **A Dual Porosity Construct for Osteochondral Modelling and Repair**
Alexander A. Popov, George Roberts, David M. Grant, Colin A. Scotchford and Virginie Sottile
Wolfson Centre for Stem Cells, Tissue Engineering & Modelling, University of Nottingham, UK

10:15 59-5 **Radiological Assessment of Bioengineered Bone in a Muscle Flap for Reconstruction of a Critical-Size Mandibular Defect**
Randa Al-Fotawei, Edwared Odell, Kurt Naudi, Matthew J. Dalby, K. Elizabeth Tanner, J McMahon, Ashraf Ayoub
Glasgow Dental Hospital &School, UK

Women in Science Symposium, part 2 Hall 1, 11:00 - 12:30

Chairs: Elizabeth Tanner, University of Glasgow
Claudia Loebel, AO Foundation
Monica Golda-Cepa, Jagiellonian University

11:00 60-1 **Enhanced Control of Stem Cell Responses by Sub-Micron Material Parameters**
John Hunt, Rui Chen Sandra Fawcett, Judith Curran
Centre for Materials and Structures, University of Liverpool, UK

11:15 60-2 **Synthesis, Properties and In Vitro Toxicity of Magnetic Ferrite Nanoparticles**
Juan Sojo, Pier Bombilli, Karem Noris, Gema Gonzalez
Centro Ingeniería de Materiales y Nanotecnología, Caracas, Venezuela

11:30 60-3 **Osteogenic Micro-Nanopatterned Titania for Orthopaedics**
Laura E. McNamara, T Sjöström, P Herzyk, RMD Meek, B Su, MJ Dalby
Centre for Cell Engineering, University of Glasgow, UK

11:45 60-4 **Hydrogel-Based Injectable Systems for the Local Delivery of Sodium Alendronate - In Vitro Evaluation with Osteoblast- and Osteoclast-Like Cells**
Urszula Posadowska, Martin Parizek, Elena Filova, Krzysztof Pietryga, Lucie Bacakova, Elzbieta Pamula
Faculty of Materials Science and Ceramics, AGH – University of Science and Technology, Krakow, Poland

12:00 60-5 **Bio-Corrosion Behaviour of Chosen Magnesium Alloys from the Mg-Zn-Ca System**
Katarzyna Kubok and Lidia Litynska-Dobrzynska
Department of Functional and Structural Materials, Polish Academy of Sciences, Poland

12:15 60-6 **Biofunctionalization of CoCr Alloy for Bone Tissue Reparation**
Virginia Paredes, Emiliano Salvagni, Enriquez Rodríguez, José M. Manero
Antonio Nariño University (UAN), Colombia

Bioactive Glass Symposium, part 2 Room 3, 11:00 - 12:30

Chairs: Julian Jones, Imperial College London
Richard Langford, University of Cambridge

11:00 61-1 **Bioactive Glasses to Stimulate Angiogenesis**
Alejandro Gorustovich, Aldo R. Boccaccini
Institute of Biomaterials, University of Erlangen-Nuremberg, Germany

11:15 61-2 **Porosity Engineering in Bioactive Glasses: a Sol-Gel Approach**
J. Soulié, J. Lao, E. Jallot, J.M. Nedelec
Laboratoire des Matériaux Inorganiques, Clermont Université, Clermont-Ferrand, France

11:30 61-3 **Bioactive Glass-Ionomer Cements for Bone Tissue Regeneration**
Paul V. Hatton, Altair Contreras, Felora Mirvakily, Yulia Ryabenkova, Ian Brook, Aileen Crawford, Robert Moorehead, Andrew Rawlinson, Christine Freeman, Ian M. Reaney and Cheryl Miller
Bioengineering & Health Technologies Research Group, University of Sheffield, UK

11:45 61-4 **Well Ordered Mesoporous Bioactive Glasses for Bone Tissue Engineering and Drug Delivery**
Chengtie Wu
State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai, China

12:00 61-5 **Glass Fiber-Reinforced Composite Cranial Implant with Bioactive Glass**
Pekka K. Vallittu
Department of Biomaterials Science and Turku Clinical Biomaterials Centre, University of Turku, Finland

12:15 61-6 **Bioglass Transformations by Laser Assisted Techniques**
F. Lusquiños, J. del Val, R. Comesaña, F. Quintero, A. Riveiro, M. Boutinguiza, J.R. Jones, R.G. Hill, J. Pou
Applied Physics Department, Universidade de Vigo, Spain

Biomaterials XIII Room 11, 11:00 - 12:30

Chairs: James Kirkpatrick, University of Mainz
Damien Lacroix, University of Sheffield
Giulia Gigliobianco, University of Sheffield

11:00 62-1 **Cell Behaviour Affected by Properties of Electrospun Nanofibers**
Yan Wei, Wentao liu, Xuehui Zhang, Xuliang Deng
Department of Geriatric Dentistry, Peking University, China

11:30 62-2 **Two-Photon Polymerization as a High-Resolution Tool to Control Surface Structure of Polymeric Biomaterials at Micro- and Nanoscale**
David Barata, Paulo Dias, Clemens A. van Blitterswijk and Pamela Habibovic
Department of Tissue Regeneration, University of Twente, Enschede, The Netherlands

11:45 62-3 **Facile Photochemistry Enables Protein and Cell Micropatterning in Open and Closed Polymer Systems**
Esben Kjær Unmack Larsen, Morten Bo Mikkelsen and Niels B. Larsen
Department of Micro- and Nanotechnology, DTU Nanotech, Technical University of Denmark

12:00 62-4 **3D Plotting of Biopolymer-Based Hollow and Core/Shell Structures**
Ashwini Rahul Akkineni, Yongxiang Luo, Tilman Ahlfeld, Anja Lode, Michael Gelinsky
Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universität Dresden, Germany

12:15 62-5 **Magnetic PCL-Based Nanocomposites for Soft/Hard Tissue Regeneration**
Ugo D'Amora, Teresa. Russo, Roberto De Santis, Antonio Gloria, Monica Sandri, Anna Tampieri, L. Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council of Italy

Tissue Engineering VIII Room 1B, 11:00 - 12:30

Chairs: Matthew Dalby, University of Glasgow
David Shepherd, University of Cambridge
Kiruthika Natesan, Plymouth University

11:00 63-1 **Artificial Ligaments From Poly(Vinyl Alcohol) Hydrogel Fibers**
L. Corté, G. Zhang, F. Detrez, S. Cantournet, J.S. Bach and D.N. Ku
Centre des Matériaux Pierre-Marie Fourt, Mines-Paris Tech, France

11:15 63-2 **Bioactivity of Medium Chain Length Polyhydroxyalkanoate Scaffold for Soft Tissue-Engineering Applications**
Aitor Larrañaga, Jorge Fernández, Carmen Ronchel, José L. Adrio, Jose-Ramon Sarasua
Department of Mining-Metallurgy and Materials Science, Polymat, University of the Basque Country, Spain

11:30 63-3 **Bioinspired Composites: Link between Alignment Control, Platelets Content and Mechanical Properties**
Laetitia Galea, A. Studart, Thomas Graule and Marc Bohner
Skeletal Substitutes Group, RMS Foundation, Switzerland

11:45 63-4 **Development and Characterization of Bilayered Scaffolds Incorporated with Gold Nanoparticles as Potential Skin Substitutes**
Ömer Aktürk and Dilek Keskin
Department of Engineering Sciences, Middle East Technical University, Turkey

12:00 63-5 **Multi-Scale Geometric Control of Mechano-Transduction and Cell Behaviour Using Polymer Brushes**
John Connelly, Jenny Malmström, Duncan Sutherland and J. E. Gautrot
Institute of Bioengineering, Queen Mary University London, UK

12:15 63-6 **Is the Presence of Multinucleated Giant Cells Within the Implantation Bed of Natural-Based Biomaterials Physiological? Assessment of In Vitro and In Vivo Screening of Three Different Porcine Collagen Membranes by Means of Multichamber Three-Dimensional Systems**
Shahram Ghanaati, Carlos Mota, Mike Barbeck, Patrick Booms, Robert Sader, Clemens van Blitterswijk, Lorenzo Moroni, C James Kirkpatrick
Institute of Pathology, University Medical Center of the Johannes Gutenberg University Mainz, Langenbeckstraße 1, 55101 Mainz, Germany

UKSB VI Room 4, 11:00 - 12:30

Chairs: Julie Gough, University of Manchester
Raechelle D'Sa, University of Liverpool

11:00 64-1 **The Effect of a RF/DC Magnetron Sputtered Coating on the Dissolution Behaviour and Osteoblast Response to an Mg-Y-RE Alloy**
Natasha A Bhuiyan, Robert Thornton, Joseph Robson, Julie E Gough
Material Science Centre, University of Manchester, UK

11:15 64-2 **Novel Biomimetic Scaffolds for Osteochondral Repair**
Amy Prosser, Leander Poocza, Gerhard Hildebrand, Klaus Liefeith, Colin Scotchford, Virginie Sottile and David Grant
Division of Materials Mechanics and Structures, University of Nottingham, UK

11:30 64-3 **Investigation into the Ability to Accurately Mimic Natural Extracellular Matrix using Artificial Electrospun Scaffolds**
Kirstie Andrews
School of Engineering, Manchester Metropolitan University, UK

11:45 64-4 **Bioactive and Highly Porous Nanofibres via Solution Blow Spinning and their Formation into Macroporous Scaffolds**
Eudes Leonnan, Ana Letícia Braz, Isaque Jerônimo, Aldo R. Boccaccini, Showan N. Nazhat, Eliton S. Medeiros, Jonny J. Blaker
School of Materials, Manchester University, UK

12:00 64-5 **UKSB Closing Ceremony**
Sanjukta Deb
King's College London, UK

Biomaterials XIV Hall 1, 14:30 - 16:00

Chairs: Abhay Pandit, National University of Ireland Galway
Adrian Boyd, University of Ulster
Jacob Brubert, University of Cambridge

14:30 65-1 **In Vitro Bioactivity and Cell Differentiation Properties of Nanobioceramics with Different Nanostructure**
Cristian Covarrubias, Fabiola Arroyo, Consuelo Balanda, Isabel Celhay, Juan P. Rodríguez, Ana M. Pino, Carla Urra, Mario Díaz, Miguel Neira, Pablo Caviedes
Laboratorio Nanobiomateriales, Facultad de Odontología, Universidad de Chile

14:45 65-2 **The Modelling of Self-Inflating Tissue Expanders**
X. Min and J. T Czernuszka
Department of Materials, University of Oxford, UK

15:00 65-3 **Protein Nano-Carriers from Clicked Glycosaminoglycan Block Copolymers**
Ramon Novoa-Carballal, Carla Silva, Stephanie Möller, Matthias Schnabelrauch, Rui L. Reis and Iva Pashkuleva
3B's Research Group – Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal

15:15 65-4 **Treatment of a Degenerative/Pro-Inflammatory Intervertebral Disc Organ Culture with Chitosan/Poly-ɣ-Glutamic Acid Nanoparticles Carrying and Anti-Inflammatory Drug**
Graciosa Q. Teixeira, Catarina L. Pereira, Hans-Joachim Wilke, Anita Ignatius, Mário A. Barbosa, Cornelia Neidlinger-Wilke, Raquel Goncalves
Institute of Biomedical Engineering (INEB), Universidade do Porto, Portugal

15:30 65-5 **Detection of C-Reactive Protein using Highly Dispersible Gold Nanoparticles Bearing Phospholipid Block Copolymers**
Yasuhiko Iwasaki, Toshihiro Kimura, Masaki Orisaka, Hideya Kawasaki, Tatsuro Goda and Shin-ichi Yusa
Faculty of Chemistry, Kansai University, Japan

15:45 65-6 **Antibody Coated Microparticles to Fabricate Functional 3D Constructs in Combination with Cells**
C. A. Custódio, V. E. Santo, M.B. Oliveira, M. E. Gomes, R. L. Reis, J. F. Mano
3B's Research Group – Biomaterials, Biodegradables and Biomimetics, University of Minho, Portugal

Bioactive Glass Symposium, part 3 Room 3, 14:30 - 17:45

Chairs: Julian Jones, Imperial College London
Richard Langford, University of Cambridge

14:30 66-1 **Regulating Cellular Function Through Physicomechanical Engineering of the Nanobiointerface**
Manus Biggs, Shalom Wind, Matthew Dalby & Abhay Pandit
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

15:00 66-2 **The Response of Mesenchymal Stromal Cells to Strontium-Substituted Bioactive Glasses**
M. Santocildes-Romero, P. Hatton, R. Goodchild, A. Crawford, I. Reaney and C. Miller
School of Clinical Dentistry, The University of Sheffield, UK

15:15 66-3 **Unsupervised Techniques Unexpectedly Highlight Steroid Biosynthesis in the Global Response of Human MSC to Strontium-Substituted Bioactive Glasses**
H. Autefage, E. Gentleman, E. Littmann, M. Hedegaard, T. von Erlach, M. D. O'Donnell, M. Hedegaard, D. Winkler, M. M. Stevens
Craniofacial Development and Stem Cell Biology, King's College London, UK

15:30 66-4 **Application of FIBSEM and XRM to Study the Occlusion of Dentine Tubules From a Calcium Sodium Phosphosilicate Bioactive Glass (NovaMin™)**
Richard Langford, Jonathan Earl and Arno Merkle
Cavendish Laboratory, University of Cambridge, UK

15:45 66-5 **Osteoblast-Like Cell Reactions to Soluble Silicate Ions Released from Bioactive Glass and Siloxane-Containing Vaterite**
Akiko Obata, Norihiko Iwanaga, Hirotaka Maeda and Toshihiro Kasuga
Graduate School of Engineering, Nagoya Institute of Technology, Japan

16:00 66-6 **Atomic-scale Models of the Water-Bioactive Glass Interaction**
Antonio Tilocca and Alastair N Cormack
Inamori School of Engineering, Alfred University, USA

16:15 66-7 **Applications of solid state NMR to the characterisation of bioactive glasses**
Z. Lin, Julian R Jones, John V Hanna and Mark E Smith
Department of Physics, University of Warwick, Coventry, UK

16:30 66-8 **Chloride Containing Bioactive Glasses**
Robert Hill, Natalia Karpukhina and Xiaojing Chen
Dental Physical Sciences, Barts and The London, UK

16:45 66-9 **Solid-State NMR Study on Strontium-Substituted 45S5 Bioglass**
Kie Fujikura, Natalia Karpukhina, Akiko Obata, Toshi Kasuga, Delia S. Brauer, Robert G. Hill and Robert V. Law
Imperial College London, Department of Chemistry, UK

17:00 66-10 **Structural Evolution and Phase Formation During Synthesis of Phosphate-Containing Sol-Gel Derived Bioactive Calcium Silicate 58S Glasses**
John V. Hanna, B. Yu, Claudia Ionescu, Julian R. Jones and Mark E. Smith
Department of Physics, University of Warwick, Coventry, UK

17:15 66-11 **Nano/Micro Structured Bioglasses Synthesized via Sol-gel and Electrohydrodynamic (EHD) Approaches**
Yangyang Li, Ding Zhao, Binbin Li, Qiuhong Zhang, Yike Fu, Juan Wang, Mingwei Chang, Zhaohui Ren, Xiang Li
Department of Materials Science and Engineering, Zhejiang University, China

17:30 66-12 **A Unified In Vitro Evaluation for Apatite-Forming Ability of Bioactive Glasses and their Variants**
Anthony L. B. Maçon, Taek B. Kim, Esther Valliant, Katherine Goetschius, Richard Brow, Delbert Day, Alexander Hoppe, Aldo Boccaccini, Il-Yong Kim, Chikara Ohtsuki, Tadashi Kokubo, Akiyoshi Osaka, Maria Vallet-Regi, Daniel Arcos, Leandro Fraile, Antonio Salinas, Alexandra Teixeira, Yuliya Vueva, Rui Almeida, Marta Miola, Chiara Vitale-Brovarone, Enrica Verne and Julian Jones
Department of Materials, Imperial College London, UK

Biomaterials XV Room 11, 14:30 - 16:00

Chairs: Nicholas Dunne, Queen's University Belfast
Derfogail Delcassian, Imperial College London
Damien Lacroix, University of Sheffield

14:30 67-1 **Role of Stromal Vascular Fraction from Adipose Tissue in Association with a Phosphocalcic Scaffold to Regenerate Bone in Irradiated Area**
Florent Espitalier, Audrey Théry, Pauline Bléry, Jérôme Guicheux, Paul Pilet, Sophie Sourice, Pierre Weiss, Olivier Malard
INSERM U791, Center for Osteoarticular and Dental Tissue Engineering, University of Nantes, France

14:45 67-2 **Design of Stimuli-Responsive Film Trough Layer-by-Layer Assembly for the Control of Protein Adsorption**
A. Osypova, C.M. Pradier, C. Jérôme, J. Landoulsi, S. Demoustier-Champagne
Institute of Condensed Matter and Nanoscience (IMCN), Université Catholique de Louvain (UCL), Belgium

15:00 67-3 **Tissue Engineering Creates New Basis for Scientific Research in Cell-Biomaterial Interaction**
Malgorzata Lewandowska-Szumiel, Slawomir Ruminsk, Katarzyna Walenko, Barbara Ostrowska, Wojciech Swieszkowski
Department of Histology and Embryology, Medical University of Warsaw, Poland

15:15 67-4 **Wear and Friction of PEEK and CFR-PEEK Materials for Cervical Total Disc Replacement Bearings**
Ksenija Vasiljeva, Phil Hyde, John Fisher, Richard Hall
University of Leeds, UK

15:30 67-5 **Nanofiber-Based Biomaterials Used to Direct Cellular Responses Associated with Epithelial-Mesenchymal Transition**
Raquel C. Barros, Edith Gelens, Menno de Jong, Roel Kuijer, Theo G. van Kooten
Department of Biomedical Engineering, University Medical Center Groningen, University of Groningen, The Netherlands

15:45 67-6 **Characterising the Effects of Different Sterilisation Techniques on Electrospun Fibre Scaffolds**
Lucy A Bosworth and Sarah H Cartmell
School of Materials, The University of Manchester, UK

Bone V Room 4, 14:30 - 16:00

Chairs: John Nicholson, University of Greenwich
Elisabeth Engel, Institute for Bioengineering of Catalonia
Kambiz Farbod, Radboud University Medical Center

14:30 68-1 **Novel Electric Discharge Assisted Mechanical Milling method as a mean of biomaterials synthesis in the Al-Zr-O system**
M. Wyszomirska, A. Calka, D. Wexler
Mechanical, Material & Mechatronic, University of Wollongong, Australia

14:45 68-2 **Biofabrication of Osteochondral Grafts Via 3D Printing of Cell-Laden Microcarriers in a Gelatin Methacrylamide/Gellan Gum Bioink**
Riccardo Levato, Jetze Visser, Josep A. Planell, Elisabeth Engel, Jos Malda, Miguel A. Mateos-Timoneda
Institute for Bioengineering of Catalonia, Barcelona, Spain

15:00 68-3 **Controlled and Reliable Carbonation of Low Temperature Calcium Phosphates**
Anna Díez-Escudero, Montserrat Espanol, Yassine Maazouz and Maria-Pau Ginebra
Department of Materials Science and Metallurgical Engineering, Technical University of Catalonia, Spain

15:15 68-4 **Characterization and Biocompatibility of a Collagen/Hydroxyapatite-Microsphere Composite Scaffold for Bone Regeneration**
Rahmat Cholas, Sanosh Kunjalukkal Padmanabhan, Francesca Gervaso, Gayatri Udayan, Graziana Monaco, Alessandro Sannino and Antonio Licciulli
Department of Engineering for Innovation, University of Salento, Italy

15:30 68-5 **PEO Physicochemical Modification of Novel Low-modulus β-Ti Alloys Shows Comparable Cellular Behaviour to Commercial α- and (α+β)-Ti Alloys**
Mehdi Golozar, Constantin-Edi Tanase, Roger A. Brooks and Serena M. Best
Cambridge Centre for Medical Materials, University of Cambridge, UK

15:45 68-6 **Machining of Metallic Biomaterials: Comparison between Co-Cr-Mo and Ti-Al-Nb Alloys**
Timotius Pasang, Mamoru Takahashi, Daiki Shinohara, Patrick Conor, Kiyoshi Tanaka and Osamu Kamiya
Department of Mechanical Engineering, AUT University, Auckland, New Zealand

Poster Presentation Programme

P1 **Mechanical Properties of Zirconia 3-Unit Fixed Dental Prostheses Machined on a CAD/CAM System**
Carlos Nelson Elias, Heraldo Elias Salomão dos Santos, Claudinei dos Santos
Instituto Militar de Engenharia, Brazil

P2 **Nano-Crystallite TCP Synthezied by Mechanical Activation To Use Tissue Engineering**
Hassan Gheisari Dehsheikh, Ebrahim Karamian
Department of Material Engineering, Islamic Azad University, Isfahan, Iran

P3 **Hyperbranched Poly(β-Amino Ester) for High Performance Gene Delivery**
Dezhong Zhou, Wenxin Wang
Charles Institute of Dermatology, University College Dublin, Ireland

P4 **Optimisation of Macromolecular Crowding Conditions for Enhanced Extracellular Matrix Deposition i*n vitro***
Diana Gaspar, Abhay Pandit, Dimitrios Zeugolis
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

P5 **Enhanced Extracellular Matrix Deposition and Maintenance of Mesenchymal Stem Cell Phenotype *In Vitro* using Macromolecular Crowding and Low Oxygen Tension**
D. Cigognini, P. Kumar, A. Satyam, C. Sanz-Nogués, T. O'Brien, A. Pandit and D. Zeugolis
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

P6 **Synthesis and characterization of novel bioglass-ceramic CaO-Na_2O-SiO_2-$P_2O_5$$ZrO_2$-TCP by sol-gel processing**
Parisa Eslami, Giovanni Baldi, Valentina Faso
Ce. Ri. Col Research Center of Colorobbia Italia, Italy

P7 **WITHDRAWN**

P8 **Interconnected porous calcium phosphate forming cement consisting of α-TCP foam granules and calcium phosphate acidic solution**
Khairul Anuar Shariff, Kanji Tsuru, Kunio Ishikawa
Department of Biomaterials, Kyushu University, Japan

P9 **Antithrombogenic Surface on Poly(ether ether ketone) Prepared by Self-initiated Photoinduced Graft Polymerization of 2-Methacryloyloxyethyl Phosphorylcholine**
Kazuhiko Ishihara, Masayuki Kyomoto, Tetsuji Yamaoka, Sachiro Kakinoki
Department of Materials Engineering, The University of Tokyo, Japan

P10 **Development of bioengineered designer scaffolds for full thickness skin wound healing**
Naveen Kumar
Division of Surgery, Indian Veterinary Research Institute, Uttar Pradesh, India

P11 **Synthesis and *In Vitro* Biocompatibility of Carbonated Hydroxyapatite for Bone Tissue Engineering Application**
Yanny M. Baba Ismail, Oana Bretcanu, Kenneth W. Dalgarno, Alicia J. El Haj
Institute for Science and Technology in Medicine, Keele University, Stoke-on-Trent, UK

P12 **Modification of Magnesium Coated Titanium Surfaces to Control Its Corrosion Rate**
O. Mazmanoglu, S. Onder, F. N. Kok, K. Kazmanlı, M. Urgen
Molecular Biology Genetics and Biotechnology Programme, İstanbul Technical University, Turkey

P13 **Dip TIPS as a Novel Process for Preparation of Anisotropic Channeled Porous Polymer Scaffolds for Guided Tissue Engineering Applications**
Naresh Kasoju, Dana Kubies, Marta M. Kumorek, Luďka Machová, Jan Kříž, Daniel Jirák, Eva Fabryová, František Rypáček
Institute of Macromolecular Chemistry, Academy of Sciences of Czech Republic, Prague

P14 **Different cryogel architectures as basis for 3D cell culture of prostate cancer cells**
Anne Baecker, Bettina Goeppert, F.J. Gruhl
Karlsruher Institute of Technology, Germany

P15 **Rapid screening of potential biomedical zirconium alloys with 1 wt. % alloy additions**
F.Y. Zhou, Y.F. Zheng
Center for Biomedical Materials and Engineering, Harbin Engineering University, China

P16 **Iron Oxide Colloids as hyperthermia agents**
Paula Soares, Isabel Ferreira and João Paulo Borges
Department of Materials Science, FCT-UNL, Caparica, Portugal

P17 **Biodegradable Shape Memory Polymer Composite for Endovascular Embolization**
Yee Shan Wong, Subbu S. Venkatraman, Kiang Hiong Tay, Wei Min Huang and William R. Birch
School of Materials Science and Engineering, Nanyang Technological University, Singapore

P18 **Analysis of PVA- hydrogels loaded with propolis for burn healing application**
Renata N. Oliveira, Regis Rouze, Brid Quilty, Gloria D.A. Soares, Rossana M.S.M. Thiré and Garrett B. McGuinness
Department of Materials and Metallurgical Engineering, Federal University of Rio de Janeiro, Brazil

P19 **Bone regeneration in human bone defect by octacalcium phosphate collagen composite**
Tadashi Kawai, Shinji Kamakura, Keiko Matsui, Yuji Tanuma, Seishi Echigo, Osamu Suzuki and Tetsu Takahashi
Division of Oral and Maxillofacial Surgery, Tohoku University Graduate School of Dentistry, Japan

P20 **Biological performance of injectable octacalcium phosphate-hyaluronic acid composites on bone augmentation**
Kentaro Suzuki, Takahisa Anada, Tatsuya Miyazaki, Naohisa Miyatake, Masami Hosaka [4] Hideki Imaizumi, Eiji Itoi and Osamu Suzuki
Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Japan

P21 **Mathematical Design and Experimental Evaluation of Borate Based Glass Ionomer Cements (GICs): Towards Predicting Antibacterial Efficacy and Ion Release**
X.F. Zhang, H. O'Shea, D. Boyd
Department of Applied Oral Sciences, Dalhousie University, Canada

P22 **Pre-osteoblast cell responses on phosphate and calcium co-immobilized titanium**
Sunarso, Riki Toita, Kanji Tsuru, Kunio Ishikawa
Department of Biomaterials, Kyushu University, Japan

P23 **Nanohybrid Approach to Create Cell–Compatible Degradable Copolymer Thermogels as Cell Delivery Carriers**
Naho Oyama and Koji Nagahama
Department of Nanobiochemistry, Konan University, Japan

P24 **Self-assembly of PEI Modified Biodegradable Complex Micelles as Gene Transfer Vector for Proliferation of ECs**
Juan Lv, Jing Yang, Xuefang Hao and Yakai Feng
School of Chemical Engineering and Technology, Tianjin University, China

P25 **Ultrasonic non-invasive monitoring of the mechanical properties of collagen vascular scaffolds in bioreactors**
Bernard Drouin, Ramiro M. Irastorza and Diego Mantovani
Laboratory for Biomaterials and Bioengineering, Laval University, Quebec City, Canada

P26 **Scaffold and tissue engineering by self-assembly therapies for tendon repair**
Dimitrios Zeugolis
Network of Excellence for Functional Biomaterials (NFB), National University of Ireland, Galway

P27 **Characterization of PCL based nano/micro fibrous scaffold for Bone Tissue Engineering**
Izabella Rajzer, Elżbieta Menaszek
Department of Mechanical Engineering Fundamentals, University of Bielsko-Biała, Poland

P28 **Mechanism of Electrodeposition of Poly(Ethylene Glycol) to Titanium Surface**
Takao Hanawa, Osamu Fukushima, Yusuke Tsutsumi, Hisashi Doi and Maki Ashida
Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan

P29 **Effects of Combination of Biomaterial and Stem cell Implants on the Hard and Soft Tissue of Experimental Animals**
Mara Pilmane, Andrejs Skagers, Ilze Salma, Sandris Petronis, Dagnija Loca, Janis Locs
Institute of Anatomy and Anthropology, Riga Stradins University, Latvia

P30 **Several drugs and model molecules controlled release studies from nanometric vesicles of polymer-lipid complexes**
Virginia Saez-Martinez, Anisa Mahomed, Brian J. Tighe
Biomaterials Research Unit, Aston University, Birmingham, UK

P31 **Modification of PVC catheters with a binary graft of PEGMA and AAc to improve their biocompatibility**
L. Islas, G. Burillo
Instituto de Ciencias Nucleares, Universidad Nacional Autonoma de México

P32 **Antibiotic-loaded silica nanoparticles/collagen composite hydrogels with prolonged antimicrobial activity for wound infection prevention**
Christophe Hélary, Gisela S. Alvarez, Andrea M. Mebert, Xiaolin Wang, Thibaud Coradin and Martin F. Desimone
Materials and Biology Team, University Pierre and Curie, Paris, France

P33 **Fibroin reinforced calcium phosphate cement**
Martha Geffers, Jürgen Groll, Uwe Gbureck
Department of Functional Materials in Medicine and Dentistry, University of Würzburg, Gemany

P34 **Influence of heat treatment and additives of alkali substituted calcium phosphate cements on their properties**
Martha Geffers, Laura Straub, Jürgen Groll, Uwe Gbureck
Department of Functional Materials in Medicine and Dentistry, University of Würzburg, Gemany

P35 **Development of an in situ culture-free screening test for the rapid detection of Staphylococcus aureus within healthcare environments**
Adam Le Gresley, Alex Sinclair, Lauren E. Mulcahy, Lynsey Geldeard Samerah Malik and Mark D. Fielder
Pharmacy and Chemistry, Kingston University, London, UK

P36 **New Technology Based on Combination of Cryogel and Nanoparticles for Wound Management**
Timur Saliev, Gulsim Kulsharova, Alma Akhmetova, Talgat Nurgozhin, Ray D.L. Whitby and Sergey Mikhalovsky
School of Engineering, Nazarbayev University, Kazakhstan

P37 **Rapid Patterning of 1-D Collagenous Topography as an ECM Protein Fibril Platform for Image Cytometry**
Niannan Xue, Xia Li, Cristina Bertulli, Zhaoying Li, Atipat Patharagulpong, Amine Sadok, Yan Yan Shery Huang
Department of Engineering, University of Cambridge, UK

P38 **Control of Bone Conduction on Pure Titanium by Surface Modification**
Masato Ueda, Masahiko Ikeda, Richard Langford, Jeremy Skepper, Ruth E. Cameron and Serena M. Best
Faculty of Chemistry, Kansai University, Japan

P39 **Modification Of Electrospun Nanofibrous Scaffold By Ink-Jet Printing**
Izabella Rajzer, Monika Rom, Elżbieta Menaszek
Department of Mechanical Engineering Fundamentals, University of Bielsko-Biała, Poland

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P41 **Chelate Bonding Mechanism of a Novel Magnesium Phosphate Bone Cement**
Theresa Christel, Martha Geffers, Susanne Christ, Jürgen Groll and Uwe Gbureck
Department for Functional Materials in Medicine and Dentistry, University of Würzburg, Germany

P42 **Biocompatibility and Solubility of Calcium Doped Magnesium Phosphate Cement Granules**
Theresa Christel, Martha Geffers, Susanne Christ, Uwe Klammert, Berthold Nies, Andreas Höß, Jürgen Groll and Uwe Gbureck
Department for Functional Materials in Medicine and Dentistry, University of Würzburg, Germany

P43 **Study and design of RGD-Self-assembling peptide hydrogels**
Deidda Graziano, Mitraki Anna
Materials Science Department, University of Crete, Heraklion, Greece

P44 **Structure and Properties Study of Calcium Apatites**
Y. Gao, R.V. Law, N. Karpukhina, R.G. Hill
Department of Chemistry, Imperial College London, UK

P45 **Development and study of poly(butylene succinate)/chitosan/hemp fiber fully biodegradable composites**
Z. Terzopoulou, V. Nikolaidis, D. Bikiaris, E. Athanassiadou, E. Papadopoulou
Department of Chemistry, Aristotle University of Thessaloniki, Greece

P46 **Effect of Albumin Adsorption on MC3T3-E1 and RAW264.7 Cell Response to Hydroxyapatite and a-Alumina**
Masakazu Kawashita, Jumpei Hayashi, Tada-aki Kudo, Hiroyasu Kanetaka, Zhixia Li, Toshiki Miyazaki, Masami Hashimoto
Graduate School of Biomedical Engineering, Tohoku University, Japan

P47 **New Insights into the Control of 3D Architecture and Porosity in Collagen Scaffolds for Tissue Engineering**
K. M. Pawelec, A. Husmann, S. Best, R. Cameron
Cambridge Centre for Medical Materials, University of Cambridge, UK

P48 **Characterization and cytocompatibility of nanocellulose films**
K.Hua, D.O.Carlsson, M.Strømme, A.Mihranyan, N.Ferraz
Nanotechnology and Functional Materials, Uppsala University, Sweden

P49 **L-Lactide, D-Lactide and ε-caprolactone or δ-valerolactone based terpolymers for application in the medical field**
J. Fernández, A. Larrañaga, A. Etxeberria and J. R. Sarasua
Department of Mining-Metallurgy Engineering and Materials Science, University of the Basque Country, Bilbao, Spain

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P51 **Ionic liquid-doped and *p*-NIPAAm-based temperature responsive copolymer: Extraordinary entrapping and releasing behaviors of BSA at 38-42 ^{o}C**
Jae-won Seo, Ueon Sang Shin
Institute of Tissue Regeneration Engineering, Dankook University, South Korea

P52 **Synthesis of a Bifunctional Silver-containing Biocomposite**
Anna A. Ivanova, Roman A. Surmenev, Maria A. Surmeneva, Timur Mukhametkaliyev, Kateryna Loza, Oleg Prymak, Matthias Epple
Department of Theoretical and Experimental Physics, National Research Tomsk Polytechnic University, Russia

P53 **Osteoinduction and survival of human osteosarcoma MG-63 cells on nanoporous hydroxyapatite scaffolds**
M. Beaufils-Hugot, F. Burgio, S. Stevanovic, P. Chavanne, O. Braissant, P. Gruner, R. Schumacher, U. Pieles
FHNW, University of Applied Sciences and Arts of Northwestern Switzerland, Muttenz

P54 **Protein Adsorption onto Polymer-based Nanocarriers for Vaccine Delivery**
Nitesh Kunda, Gillian Hutcheon and Imran Saleem
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, UK

P55 **Surface functionalization of electro-spun Poly(L)Lactic Acid scaffolds with heparin to induce angiogenesis**
Giulia Gigliobianco, Sabiniano Roman, Chuh K. Chong and Sheila MacNeil
Kroto Research Institute, University of Sheffield, UK

P56 **Neuronal growth on nano-pillar substrates**
Nahoko Kasai, Rick Lu, Touichiro Goto, Yoshiaki Kashimura, Azusa Oshima and Koji Sumitomo
NTT Basic Research Laboratories, Atsugi, Japan

P57 **Biodegradable and Bioadhesive Hemostatics Comprising Polymer Complex Gel and Chitosan**
Tomoko Ito, Masazumi Eriguchi and Yoshiyuki Koyama
Japan Anti-tuberculosis Association, Shin-Yamanote Hospital, Japan

P58 **The Effect of Water Saturation on the Compressive Properties of Calcium Sulphate Dihydrate**
I Koh, A López, B Helgason and S Ferguson
Institute for Biomechanics, ETH-Zürich, Switzerland

P59 **Flexural Properties of Calcium Sulphate Dihydrate and Dicalcium Phosphate Dihydrate: Potential Role of Degradation with Water Saturation**
I Koh, B Helgason and S Ferguson
Institute for Biomechanics, ETH-Zürich, Switzerland

P60 **Osteoconductivity of Super Hydrophilic Valve Metals and Titanium Alloys**
Kensuke Kuroda and Masazumi Okido
EcoTopia Science Institute, Nagoya University, Japan

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P62 **Evaluation of Dense Collagen Matrices as Wound Dressing for the Treatment of Foot Diabetic Ulcers**
Christophe Hélary, Gervaise Mosser, Aicha Abed, Didier Letourneur, Liliane Louedec, Thibaud Coradin, Marie Madeleine Giraud-Guille and Anne Meddahi-Pellé
Materials and Biology Team, University Pierre and Curie, Paris, France

P63 **Electrodeposition of Nanostructured Zinc Oxide on Zinc with Potential for Bioresorsable Medical Devices**
M. Alves, C. Santos, M. J. Carmezim and F. Montemo
Instituto Superior Técnico, Universidade Técnica de Lisboa, Portugal

P64 **Mechanical Strength and Microstructure of Biomedical Beta-type Ti Alloy Subjected to Fine Particle Bombarding**
Toshikazu Akahori, Yurie Oguchi, Tomokazu Hattori, Hisao Fukui, and Mitsuo Niinomi
Faculty of Science and Technology, Meijo University, Japan

P65 **Stoichiometric Control for Hydroxyapatite Thin Film Prepared by Pulsed Laser Deposition Technique**
Hiroaki Nishikawa, Ryota Yoshikawa
Faculty of Bio-Oriented Science and Technology, Kinki University, Japan

P66 **The Influence of PBS and Lactic acid on vacuum-sintered bodies of a novel apatite for artificial bone and tooth**
Kenichi Tamura and Tomohiro Uchino
College of Engineering, Nihon University, Japan

P67 **Sol-gel assisted preparation of collagen hydrolysate scaffold: A Novel biomaterial for the treatment of chronic wounds**
Satiesh Kumar Ramadass, Sathiamurthi Perumal and Balaraman Madhan
Central Leather Research Institute, Tamil Nadu, India

P68 **Stress and Deformation in a Sutured Tendon Repair; an *in silico* Model**
S D Rawson, L Margetts, J K F Wong and S H Cartmell
School of Materials, University of Manchester, UK

P69 **Chemically cross-linked peptide-based hydrogels with potential biomedical applications**
M.A. Elsawy, A. Smith, A.F. Miller and A. Saiani
School of Materials, University of Manchester, UK

P70 **Calcium phosphate spheres incorporated into PMMA cement for enhanced antibacterial properties**
Tao Qin, Alejandro López, Caroline Öhman, Håkan Engqvist, Cecilia Persson, Wei Xia
Department of Engineering Sciences, Uppsala University, Sweden

P71 **MP-SPR New characterization method for interactions and ultrathin films**
Annika Jokinen, Niko Granqvist, Willem M. Albers and Janusz Sadowski
BioNavis Ltd., Finland

P72 **A Dimensionless Number for Electrospinning**
William W. Sampson
School of Materials, University of Manchester, UK

P73 **Acidic pH resistance of grafted chitosan on dental implant**
Doris M. Campos, Bérengère Toury, Mélanie D'Almeida, Ghania N. Attik, Alice Ferrand, Pauline Renoud and Brigitte Grosgogeat
UFR d'Odontologie, Université Claude Bernard Lyon, France.

P74 **Ex vivo osteo-chondral organ culture**
Andrea Schwab, Jenny W Reboredo, Heike Walles
Tissue Engineering & Regenerative Medicine, University Hospital Wuerzburg, Germany

P75 **3D powder printing of structured TCP/Alginate scaffolds for bone tissue engineering**
Miguel Castilho, Jorge Rodrigues, Inês Pires, Barbara Gouveia, Manuel Pereira, Claus Moseke, Jürgen Groll, Uwe Gbureck, Elke Vorndran
Instituto Superior Técnico, Universidade de Lisboa, Portugal

P76 **Surface modification of Ti-6Al-4V alloy controlling OCP nucleation by electron cyclotron resonance plasma oxidation**
Hiroshi Masumoto, Mayumi Oikawa, Yusuke Orii, Takahisa Anada, Osamu Suzuki and Keiichi Sasaki
Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan

P77 **Evaluation the Cellular Behavior on Poly Lactic-co-Glycolic Acid - Gelatin Scaffolds by Electrospinning Method**
Farnaz Ghorbani, Haniyeh Nojehdehyan, Ali Zamanian
Biomedical Engineering Department, Islamic Azad University, Tehran, Iran

P78 **Conducting Polymer Platform for Anti-Cancer Drug Delivery**
K. Krukiewicz, T. Jarosz, J.K. Zak, M. Łapkowski, P. Ruszkowski, T. Bobkiewicz-Kozlowska, B. Bednarczyk-Cwynar
Department of Physical Chemistry and Technology of Polymers, Silesian University of Technology, Poland

P79 **Stability of self-assembled hyaluronan polymeric micelle cores in aqueous solutions and whole human blood**
Daniela Šmejkalová, Kristina Nešporová, Jana Šógorková, Pavlína Halamková, Jaroslav Novotný, Jakub Syrovátka, Gloria Huerta-Angeles
Contipro Pharma, Dolní Dobrouč, Czech Republic

P80 **Extracellular matrix proteins regulate Adipose Derived Mesenchymal Stem Cells and Amniotic Fluid Stem Cells attachment and proliferation: utility for tissue and organ regeneration**
Anna Bajek, Joanna Olkowska, Natalia Gurtowska, Tomasz Drewa
Departament of Tissue Engineering, Nicolaus Copernicus University, Bydgoszcz, Poland

P81 **Development of a new biomaterial based on Hyaluronan and oleic acid for drug delivery applications**
Gloria Huerta-Angeles, Martin Bobek, Daniela Šmejkalová Kristina Nešporová and Vladímir Velebný
Contipro Pharma, Dolní Dobrouč, Czech Republic

P82 **Imaging of Biofilm Removal on Titanium and Glass by Dental Instruments**
E. Pecheva, N. Vyas, R.L. Sammons and A.D. Walmsley
School of Dentistry, University of Birmingham, UK

P83 **Poly (ε-lysine) dendrons as modulators of quorum sensing in *Pseudomonas aeruginosa***
Rahaf Issa, Steve Meikle, Stuart James and Ian R. Cooper
School of Pharmacy and Biomolecular Sciences, University of Brighton, UK

P84 **Comparative Osteogenesis of Calcium Silicate Cement and Calcium Phosphate Cement**
Shinn-Jyh Ding and Shu-Ching Huang
Institute of Oral Science, Chung Shan Medical University, Taichung, Taiwan

P85 **A study on PLLA/MWCNT nanocomposites compatibilized with pyrene-end-functionalized PLLA**
I. Martínez de Arenaza, M. Obarzanek-Fojt, J. R. Sarasua, E. Meaurio, F. Meyer, J. M. Raquez, P. Dubois and A. Bruinink
Materials Biology Interactions, EMPA, St Gallen, Switzerland

P86 **Microgels Immobilizing Eudragit Nanoparticles for Indomethacin Release**
Mihaela Nicoleta Holban, Anca Niculina Cadinoiu, Elena Folescu and Vasile Burlui
Acad. Ion Haulica Research Institute, Apollonia University of Iasi, Romania

P87 **Design of Biomimetic Fibronectin Fragment Used in Multi-layer Film Coating for Tissue Engineering**
C. Dridi, B. Miladi, G. Bœuf, A. Elmarjou, S. Changotade, F. Poirier, D. Lutomski, A. Elm'selmi
Laboratoire de Biologie Moléculaire, Ecole de Biologie Industrielle, France

P88 **Effect of increasing alanine content in self-assembling FEK octapeptides**
Andrew Smith, Stephen Boothroyd, Aline F. Miller and Alberto Saiani
School of Materials and Manchester Institute of Biotechnology, University of Manchester, UK

P89 **Structural alterations in the dura mater after exposure to clinically relevant CoCr nanoparticles. An organ culture approach**
Papageorgiou Iraklis, Abberton Thomas, Fuller Martin, Tipper Joanne L, Fisher John, Ingham Eileen
Institute of Medical & Biological Engineering, University of Leeds, UK

P90 **New Materials with Antibacterial Action of Functionalized Au Nanoparticles and Ga^{3+} Ions**
Mario Kurtjak, Marija Vukomanović and Danilo Suvorov
Advanced Materials Department, Jožef Stefan Institute, Slovenia

P91 **Biomimetic mineralization of early caries lesions with a self-assembling peptide**
Sabrina Stevanovic, Lucy Kind, Iwona Dziadowiec, Bert Müller, Uwe Pieles
Institute of Chemistry and Bioanalytics, University of Applied Sciences and Arts Northwestern Switzerland

P92 **Bacterial Adhesion and Biofilm Formation Reduced by the Immobilization of hLf1-11 Peptide onto Titanium Surface: A Comparison Study between Direct and ATRP based Covalent Immobilization**
Maria Godoy-Gallardo, Carlos Mas-Moruno, Kai Yu, Jose M. Manero, Javier Gil, Jayachandran N. Kizhakkedathu, Daniel Rodríguez
Department of Material Science, Technical University of Catalonia, Spain

P93 **A Preliminary Examination of Composition-Property Relationships for Methotrexate-Loaded Germanium-Based Glass Ionomer Cements**
Lauren Kiri, Daniel Boyd
School of Biomedical Engineering, Dalhousie University, Canada

P94 **PEI – Starch Nanospheres for siRNA based Gene Silencing Therapy for Cancer**
Berke Bilgenur Kandemir, Bülent Özpolat, Gamze Torun Köse, Vasıf Hasırcı
Middle East Technical University, Department of Biotechnology, Ankara, Turkey

P95 **Intracellular delivery system based on acylated hyaluronan**
Kristina Nešporová, Jana Šógorková, Lucie Vištejnová, Daniela Šmejkalová, Hana Kolářová, Vladimír Velebný
Contipro Biotech, Czech Republic

P96 **In vivo Investigations of the Early Stages of Bone Healing with Microdialysis**
Yvonne Foerster, Claudia Rentsch, Stefan Kalkhof, Martin von Bergen, Stefan Rammelt
University Centre of Orthopaedics and Trauma Surgery, University Hospital Carl Gustav Carus, Dresden, Germany

P97 **Characterization of Oxygen Plasma-treated Dental All-Ceramic Zirconia**
Hsiang Kao, Chung-Kai Wei and Shinn-Jyh Ding
Institute of Oral Science, Chung Shan Medical University, Taichung, Taiwan

P98 **High throughput screening of hMSC response to algorithm generated micro-topographies**
Frits F.B. Hulshof, Bernke J. Papenburg, Roman K. Trückenmuller, M. Hulsman, Natalie Fekete, Shantanu Sing, Clemens A. van Blitterswijk, Anne E. Carpenter, Dimitrios Stamatialis, Jan de Boer
Department of Tissue regeneration, University of Twente, Enschede, The Netherlands

P99 **On the Biocompatibility of UV Pre-irradiated Hydrothermally Grown TiO_2-coatings**
Martina Lorenzetti, Giulia Bernardini, Katja Trinkaus, Iztok Dogsa, Thomas Luxbacher, Katrin Susanne Lips, Annalisa Santucci, Reinhard Schnettler, David Stopar, Saša Novak and Spomenka Kobe
Department of Nanostructured Materials, Jožef Stefan Institute, Ljubljana, Slovenia

P100 **Fabrication of Tissue Engineering Scaffolds from Poly(ester-anhydride) by Projection Stereolithography**
Harri Korhonen, Pekka Lehtinen, Jouni Partanen, Jukka Seppälä
Laboratory of Polymer Technology, Aalto University, Finland

P101 **Immobilization Strategies to Functionalize Tantalum Surfaces with Cell-Adhesive Peptides: Physicochemical and Biological Characterization**
Carlos Mas-Moruno, Beatriz Garrido, Daniel Rodriguez, Elisa Ruperez, F. Javier Gil
Biomaterials, Biomechanics and Tissue Engineering Group, Universitat Politècnica de Catalunya, Spain

P102 **Novel sol-gel synthesis of $(P_2O_5)_{50}$-$(CaO)_{30}$-$(Na_2O)_{15}$-$(Fe_2O_3)_5$ glasses for biomedical application**
Farzad Foroutan, Nora de Leeuw and Jonathan Knowles
Division of Biomaterials and Tissue Engineering, University College London, UK

P103 **Development of novel nanofunctionalised glass ionomer cements containing chlorhexidine-hexametaphosphate nanoparticles: mechanical properties and method of incorporation**
Candice A Bellis, James A Holder, Dominic J O'Sullivan, Michele E Barbour
Oral Nanoscience, UK Kemdent

P104 **Evaluation of the effect of polymer content on drug release and mechanical strength of a Geopolymer ER Formulation for opioid drugs**
Bing Cai, Håkan Engqvist, Susanne Bredenberg
Division for Applied Materials Science, Uppsala University, Sweden

P105 **Poly(butylene succinate) nanocomposites containing strontium hydroxyapatite nanorods for tissue engineering applications**
M. Nerantzaki, Z. Terzopoulou, E. Roumeli, D. Papageorgiou, D. Bikiaris, J. Will, J. Hum, A. Hoppe, J.A. Roether, A.R. Boccaccini
Chemistry Department, Aristotle University of Thessaloniki, Greece

P106 **New N-(2-carboxybenzyl)chitosan hybrid biocomposites for scaffolds applications**
M. Nerantzaki, Z. Terzopoulou, M. Mavidou, D.N. Bikiaris, M.D. Anastasopoulou, M.A. Karakassides, A.R. Boccaccini
Chemistry Department, Aristotle University of Thessaloniki, Greece

P107 **Release of Propranolol hydrochloride from Polyethyleneglycol Modified Lactone Polymers**
Sanja Asikainen, Minna Malin and Jukka Seppälä
Research Group of Polymer Technology, Aalto University, Finland

P108 **Titanium oxide coated cobalt-chromium-molybdenum; improving the osteogenic response of mesenchymal stem cells *in vitro***
N Logan, A Cross, S Collins, A Trayner, I Parkin, L Bozec and P Brett
Biomaterials and Tissue Engineering, University College London, UK

P109 **Autophagy Modification by Intracellular Controlled Release of Rapamycin**
Junpei Nagata, Makoto Matsui and Yasuhiko Tabata
Department of Biomaterials, Kyoto University, Japan

P110 **Bioactive orthopeadic devices for the local delivery of Gentamicin Sulfate preventing nosocomial infections**
Loic Pichavant, Hélène Carrié, Laurent Plawinski, Valérie Héroguez and Marie-Christine Durrieu
Laboratoire de Chimie des Polymères Organiques, Université de Bordeaux, Pessac, France

P111 **Design of a new composite structure based on resorbable synthetic and natural polymers for anterior cruciate ligament reconstruction**
Coline Pinese, Xavier Garric, Benjamin Notellet, Jean Coudane, Christian Gagnieu
Artificial Biopolymers department, Montpellier I University, France

P112 **Impact of silver-coated wound dressings on bacteria biofilm viability for the prevention of skin infections**
Federica Paladini, Cinzia Di Franco, Angelica Panico, Gaetano Scamarcio, Alessandro Sannino, Mauro Pollini
Dhitech Scarl, Lecce, Italy

P113 **Characterization of Antibacterial Nano-Silver Coated Hydrogel Fibers for Biomedical Applications**
Riccardo Raho, Fiorella Anna Lombardi, Federica Paladini, Sandro Boccarella, Alessandro Sannino, Mauro Pollini
Department of Engineering for Innovation, University of Salento, Lecce, Italy

P114 **Optimization of Silicone as Implant Material for the Application in the Middle Ear: Incorporation of Functionalized Nanoporous Silica Nanoparticles**
Tanja Heemeier, Mandy Jahns, Songül Noyun, Laura Doniga-Crivat, Silke Besdo, Peter Behrens
Institute for Inorganic Chemistry, Leibniz University of Hannover, Germany

P115 **Temporary implant surfaces equipped with an anti-adhesive plasma fluorocarbon polymer film**
Birgit Finke, Holger Testrich, Henrike Rebl, J. Barbara Nebe, Rainer Bader, Uwe Walschus, Michael Schlosser, Klaus-Dieter Weltmann, Jürgen Meichsner
Leibniz Institute for Plasma Science and Technology, Greifswald, Germany

P116 **Biocompatible Conductive Coatings based on Carbon Nanotubes**
Niklas Burblies, Katharina Kranz, Athanasia Warnecke, Peter Behrens
Institute of Inorganic Chemistry, Leibniz Universität Hannover, Germany

P117 **Installing multifunctionality on titanium with RGD-decorated polymeric nanocapsules: Towards new osteointegrative therapies**
Pau Rocas-Alonso, Mireia Hoyos-Nogués, Josep Rocas, Fernando Albericio, José M. Manero, Javier Gil, Carlos Mas-Moruno
Institute for Research in Biomedicine, Barcelona, Spain

P118 **Improvement of Electrode Surfaces for Biomedical Applications by Nanoporous Platinum Coatings**
Kim D. Kreisköther, Nina Ehlert, Natalja Wendt, Hans-Christoph Schwarz, Athanasia Warnecke, Katharina Kranz, Peter Behrens
Institute of Inorganic Chemistry, Leibniz Universität Hannover, Germany

P119 **Vancomycin loaded bioactive orthopeadic devices preventing infections**
Hélène Carrié, Loic Pichavant, Laurent Plawinski, Gilles Amador, Valérie Héroguez and Marie-Christine Durrieu
Laboratoire de Chimie des Polymères Organiques, Université de Bordeaux, Pessac, France

P120 **Amidation via DMTMM: A New and Efficient Method for Hyaluronan Biomaterials Preparation**
Matteo D'Este, Mauro Alini, David Eglin
AO Research Institute Davos, Switzerland

P121 **Silver nano-coatings on silk sutures for the prevention of surgical infections**
De Simone Serena, Gallo Anna Lucia, Paladini Federica, Sannino Alessandro, Pollini Mauro
Dhitech Scarl, Lecce, Italy

P122 **Functionalisation of polyurethane films using YIGSR poly(ε-lysine) linked dendrons to manipulate the human mesenchymal cell response**
Anna Guildford, Nicola Contessi, Mariagemiliana Dessi, Steve Meikle, Serena Bertoldi, Silvia Fare, Maria Cristina Tanzi and Matteo Santin
School of Pharmacy and Biomolecular Sciences, University of Brighton, UK

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P124 **Synthesis and Characterization of Chitosan/Hydroxyapatite Biocomposite Scaffolds for Potential Bone Repair Applications**
Vitor César Dumont, Nádia S. Vieira Capanema, Alexandra A. Piscitelli Mansur and Herman Sander Mansur
Center of Nanoscience, Nanotechnology and Innovation-CeNano^{2}I, Federal University of Minas Gerais, Brazil

P125 **Synthesis of morphology controlled calcium phosphate nanobiomaterials for biomedical applications**
P.J.T. Reardon, J. Huang, J. Tang
Department of Chemical Engineering and Mechanical Engineering, University College London, UK

P126 **Dextran as a Versatile Scaffold for Hydrogel Formation with Hyaluronic Acid**
Nick Dibbert, Bastian Dieter, Gerald Dräger and Andreas Kirschning
Institute of Organic Chemistry, Leibniz University Hannover, Germany

P127 **Adsorption of Col I on poly(NaSS) grafted Ti6Al4V surfaces improves MC3T3-E1 osteoblast-like cells mineralization**
Helena Felqueiras and Véronique Migonney
Laboratory of Biomaterials and Specialty Polymers, Université Paris XIII, France

P128 **Enhancement of integrin-mediated cell attachment by pre-adsorbed model proteins on poly(NaSS)-functionalized Ti6Al4V susbstrates: a QCM-D study**
Helena Felqueiras, Sven Sommerfeld, N. Sanjeeva Murthy, Joachim Kohn and Véronique Migonney
Laboratory of Biomaterials and Specialty Polymers, Université Paris XIII, France

P129 **Predicting Change in Constitutive Behaviour of Degrading Polymers**
Hassan Samami, Jingzhe Pan
Department of Engineering, University of Leicester, UK

P130 **Nitric oxide releasing polyester blends for topical skin vasodilation**
Victor Baldim and Marcelo Ganzarolli de Oliveira
Institute of Chemistry, University of Campinas, Brazil

P131 **Structural Integrity Assessment of a Polymer-based Knee Implant**
Y. Fong, P. Reed, F. Pierron and M. Browne
Bioengineering Science Research Group, University of Southampton, United Kingdom

P132 **Fabrication of hydroxyapatite thin film with entirely c-plane surface**
Masanobu Kusunoki, Yasuhiro Sakoishi, Katsuya Asano, Naoki Fujita, Takayuki Makino, Daisuke Oka
Faculty of Biology-Oriented Science and Technology, Kinki University, Japan

P133 **A Parametric Study of a Mathematic Model for Degradation of Bioresorbable Polymers**
X. Chen and J. Pan
Department of Engineering, University of Leicester, UK

P134 **Patient Specific Implants Using a Novel Rapid Template Approach**
A. Chan, P. Boughton, J. van Gelder, N. Young and A. Ruys
Biomedical Engineering, University of Sydney, Australia

P135 **Use of Ivory to Assess Composite Dentine Bonding**
Saad Liaqat, Paul Ashley, Laurent Bozec, Anne Young
Eastman Dental Institute, University College London, UK

P136 **Preparation of Porous Titanium-Polyglycolide Composites**
Nobuyuki Hayashi, Shun Kojima, Masato Ueda, Masahiko Ikeda, Kenji Doi, Kazuki Hanami, Shigeo Mori, Hisashi Kitagaki, Shuntaro Terauch
Graduate School of Science and Engineering, Kansai University, Japan

P137 **Mechanical Properties and Surface of Ultrafine Grained Titanium for Dental Implants**
Carlos Nelson Elias, Daniel J. Fernandes, Jochen Roestel
Instituto Militar de Engenharia, Brazil

P138 **Preparation and Characterization of Novel Composite Agarose Films for Wound Healing**
Alma Akhmetova, Matthew Illsley, Timur Saliev, Talgat Nurgozhin, Sergey Mikhalovsky and Iain Allan
Department of Translational Medicine, Longevity and Global Health, Nazarbayev University, Kazakhstan

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Pres L'Unam, CNRS UMR 6230, Nantes, France

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Raquel Costa Richard, Renata Nunes Oliveira, Rossana Mara da Silva Moreira Thiré
Department of Materials Engineering, Federal University of Rio de Janeiro, Brazil

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Gerlind Schneider and Dirk Linde
Department of Othorhinolaryngology, Friedrich Schiller University Hospital, Jena, Germany

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Y.Saidi, Z.Fares
Department of Physics, Mentouri University, Constantine, Algeria

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U. Danookdharree, H. R. Le, R. Handy and C. Tredwin
School of Marine Science and Engineering, University of Plymouth, UK

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L. Vecbiskena, L. Altomare, L. De Nardo, R. Chiesa
Institute of Biomaterials and Biomechanics, Riga Technical University, Latvia

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Michael Ansorge, Jiranuwat Sapudom, Tilo Pompe
Institute of Biochemistry, Universität Leipzig, Germany

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Caroline Amaral, Fabiola Ormiga and José Ponciano Gomes
Department of Metallurgy and Materials, Federal University of Rio de Janeiro, Brazil

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Patricia Taladriz-Blanco and Marcelo G. de Oliveira
Institute of Chemistry, University of Campinas, Brazil

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Wan Ting Sow and Kee Woei Ng
School of Materials Science and Engineering, Nanyang Technological University, Singapore

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Department of Biomaterials, Radboud University Medical Centre, The Netherlands

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Department of Industrial Engineering, Università di Bologna, Italy

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Carla Pereira, Francisca Araújo, Pedro L. Granja, Bruno Sarmento
Instituto de Engenharia Biomédica, University of Porto, Portugal

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Biomaterials, Biomechanics and Tissue Engineering group, Technical University of Catalonia, Barcelona, Spain

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Ortal Levi, Guy Hochbaum and Ronit Bitton
Department of Chemical Engineering, Ben-Gurion University of the Negev, Israel

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Gemma Mestres, Carlos F Santos, Lars Engman, Cecilia Persson, Marjam Karlsson Ott
Department of Engineering Sciences, Uppsala University, Sweden

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Dental School, University of Athens, Greece

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Department of Orthopedics, Dongguk University, Ilsan Hospital, Korea

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Department of Biological Sciences, Cork Institute of Technology, Ireland

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Bioengineering Department, Hacettepe University, Turkey

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S. Gill, B.J Tighe , N. Roohpour, C. Jeffrey
Biomaterials Research Unit, Aston University, Birmingham, UK

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Laboratory of Surface Engineering, Laval University, Canada

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Department of Chemistry , University of Sheffield, UK

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Anne Canning, Paul Roach, Ying Yang, James Richardson
Institute of Science and technology, University of Keele, UK

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Steven L Percival, Rebecca Booth and Sean Kelly
Institute of Ageing and Chronic Disease, University of Liverpool, UK

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Institute of Ageing and Chronic Disease, University of Liverpool, UK

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Scapa Healthcare, Manchester, UK

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Steven L Percival, Rebecca Booth and Sean Kelly
Institute of Ageing and Chronic Disease, University of Liverpool, UK

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Scapa Healthcare, Manchester, UK

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K. Sevim and J. Pan
Department of Engineering, University of Leicester, UK

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Jie Wei, Zhaoying Wu, Han Guo, Changsheng Liu
Key Laboratory for Ultrafine Materials, East China University of Science and Technology, P.R. China

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Network of Excellence in Functional Biomaterials, National University of Ireland, Galway

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Graduate School of Science and Technology, Meijo University, Japan

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Graduate School of Science and Technology, Meijo University, Japan

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Taishi Yokoi, Sota Terasaka and Masanobu Kamitakahara
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J. Y. Bae, Y. Ida, K. Sekine, F. Kawano and K. Hamada
Department of Biomaterials and Bioengineering, University of Tokushima, Japan

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Bioingénierie Tissulaire, Université Bordeaux, France

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Mi Lan Kang, Ji Yun Ko, Ji Eun Kim, Gun Il Im
Department of Orthopedics, Dongguk University Ilsan Hospital, Korea

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Masayasu Mie, Shinya Hashimoto, Mami Kaneko and Eiry Kobatake
Department of Environmental Chemistry and Engineering, Tokyo Institute of Technology, Japan

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Eiry Kobatake and Masayasu Mie
Department of Environmental Chemistry and Engineering, Tokyo Institute of Technology, Japan

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Erkan Türker Baran and Vasif Hasirci
Center of Excellence in Biomaterials and Tissue Engineering, Middle East Technical University, Turkey

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R. Mizota, Y. Morita and E. Nakamachi
Graduate School of Life and Medical Sciences, Doshisha University, Japan

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S. Inui, E. Uyama, E. Honda and K. Hamada
Institute of Health Biosciences, University of Tokushima, Japan

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Biomaterials Department, INNOVENT eV, Jena, Germany

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Li-yen Wong, Ernst Wolvetang, Justin Cooper-White
Tissue Engineering and Microfluidics Laboratory, University of Queensland, Brisbane, Australia

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J H Edwards, J Fisher and E Ingham
Institute of Medical and Biological Engineering, University of Leeds, UK

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Alieh Aminian, Bahareh Shirzadi, Laura Treccani and Kurosch Rezwan
Advanced Ceramics, University of Bremen, Germany

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Department of Biological Sciences, Middle Eastern Technical University, Turkey

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Department of Biomaterials, School of Dentistry, University of Athens, Greece

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Nerea Argarate, Beatriz Olalde, Garbiñe Atorrasagasti, Jesus Valero, Sandra Carolina Cifuentes, Rosario Benavente, Marcela Lieblich, Jose Luis González-Carrasco
Networking Research Centre on Bioengineering, Biomaterials and Nanomedicine, Spain

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Han Guo, Jie Wei, Changsheng Liu, Tiqiao Xiao
Shanghai Institute of Applied Physics, CAS, P R China

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Paola Losi, Enrica Briganti, Luisa Mancuso, Alice Gualerzi,Tamer Al Kayal, Simona Celi, Silvia Volpi, Giacomo Cao, Giorgio Soldani
Laboratory of Biomaterials & Graft Technology, Institute of Clinical Physiology, Massa, Italy

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Laura Kelly, Laura Platt, Sheila MacNeil, Paul Genever, Tim Chico, Stephen Rimmer
Department of Chemistry, University of Sheffield, UK

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Sayaka Miyabe, Yushi Fujinaga, Hiroaki Tsuchiya and Shinji Fujimoto
Division of Materials and Manufacturing Science, Osaka University, Japan

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Matthias Schumacher, Arne Helth, Anja Lode, Anne Bernhardt, Anja Henß, Marcus Rohnke, Seemun Ray, Ulrich Thormann, Volker Alt and Michael Gelinsky
Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universität Dresden, Germany

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Matthias Schumacher and Michael Gelinsky
Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universität Dresden, Germany

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AGH University of Science and Technology, Department of Biomaterials, Kraków, Poland

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R&D Department, Limacorporate, Italy

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Dept. Biologia Cellular, Fisiologia i Immunologia, Universitat Autònoma de Barcelona, Spain

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Department of Industrial Engineering, Università di Bologna, Italy

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Christopher Hickling, Helen Toogood, Alberto Saiani, Nigel Scrutton and Aline Miller
Chemical Engineering and Analytical Sciences, Manchester Institute of Biotechnology, University of Manchester, UK

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NMI Natural and Medical Sciences Institute, Reutlingen, Germany

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Department of Surgery, University Medical Center Greifswald, Germany

P204 **Differentiation of Macrophage Involvement in Tissue Regeneration Following Implantation of Biodegradable Matrices in Rats**
Silke Lucke, Uwe Walschus, Andreas Hoene, Jens-Wolfgang Pissarek, Matthias Schnabelrauch, Michael Schlosser
Department of Medical Biochemistry and Molecular Biology, University Medical Center Greifswald, Germany

P205 **In vitro and *in vivo* osteoinductive potential of polycaprolactone-based bioactive composite scaffold fabricated via additive manufacturing technology**
Patrina S. P. Poh, Dietmar W. Hutmacher, Boris M. Holzapfel, Molly M. Stevens and Maria A. Woodruff
Institute of Health and Biomedical Innovation, Queensland University of Technology, Australia

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João S. Fernandes, Ricardo A. Pires, Rui L. Reis
3B's Research Group, University of Minho, Guimarães, Portugal

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I. Nawi, V. L. Workman, A. M. Smith, A. F. Miller and A. Saiani
School of Materials & Manchester Institute of Biotechnology, The University of Manchester, UK

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Department of Mechanical Engineering, University College London, UK

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Jason Burke, Sarah Cartmell, Nicola Tirelli
Institute of Inflammation & Repair, University of Manchester, UK

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Ikuhiko Nakase
Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, Japan

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P. Rico, A. Rodrigo-Navarro, M. Salmerón-Sánchez
Center for Biomaterials and Tissue Engineering, Universitat Politécnica de València, Spain

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Y.Kato, A. Ito, T. Hattori, T. Akahori, N.Kimata, K. Sato
Dept. of Materials Science and Engineering, Meijo University, Nagoya, Japan

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Department of Biomaterials, University of Glasgow, UK

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A. Ito, Y. Kato, T. Hattori, T. Akahori, N.Kimata, K. Sato
Dept. of Materials Science and Engineering, Meijo University, Nagoya, Japan

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Department of Physics, Indian Institute of Technology Ropar, Punjab, India

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P. Rico, H. Mnatsakanyan, M. Salmerón-Sánchez
Center for Biomaterials and Tissue Engineering, Universitat Politécnica de València, Spain

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Department of Molecular Science and Technology, Ajou University, Suwon, Republic of Korea

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School of Pharmacy, Queen's University Belfast, UK

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Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Japan

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Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Japan

P221 **Reciprocating Sliding Friction of Polyvinyl Alcohol Hydrogels as Articular Cartilage Substitutes**
Takashi Hayami, Koji Morimoto, Yoshihiro Kimura, Noriyasu Hirokawa and Tadashi Shibue
Faculty of Biology-Oriented Science and Technology, Kinki University, Japan

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Marianne Sommer, Jolanda Vetsch, Jessica Leemann, Ralph Müller, Sandra Hofmann and André Studart
Department of Materials, ETH Zurich, Switzerland

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Institute of Organic Chemistry, Gottfried Wilhelm Leibniz Universität Hannover, Germany

P224 **Evaluation of network and pore morphology of self-assembling peptides for biomimetic therapy**
Franziska Koch and Uwe Pieles
ICB/Nanotechnology, University of Applied Sciences, Muttenz, Switzerland

P225 **Morphological Gradients for Protein-Adsorption and Blood-Interaction Studies**
Rebecca P. Huber, Katharina Maniura-Weber, Nicholas D. Spencer
Department of Materials, ETH Zurich, Switzerland

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Yi-Shiang Huang, Virginie Bertrand, Dimitriya Bozukova, Christophe Pagnoulle, Edwin De Pauw, Marie-Claire De Pauw-Gillet and Marie-Christine Durrieu
Institut Européen de Chimie et Biologie, University of Bordeaux I, Pessac, France

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Computational Biophysics and Imaging Group, Tampere University of Technology, Finland

P228 **Adsorption Profiles of Inflammatory Cytokines by Activated Carbon Beads and Monoliths for Haemoperfusion**
Alma Akhmetova, Sergey Mikhalovsky, Timur Saliev, Talgat Nurgozhin
Department of Translational Medicine, Nazarbayev University, Kazakhstan

P229 **Evaluation of short-term degradation of bicomponent electrospun fibres via AFM analysis**
Marica Marrese, Vincenzo Guarino, Valentina Cirillo, Luigi Ambrosio
Institute for Polymers, Composites and Biomaterials, National Research Council of Italy, Naples, Italy

P230 **Optimization of titanium foam scaffold with bioactive surface obtained by chemical treatment**
Cristina Caparrós, Mónica Ortiz-Hernandez, Meritxell Molmeneu, Miquel Punset, Jose Antonio Calero, F. Javier Gil
Biomaterials, Biomechanics and Tissue Engineering Group, Technical University of Catalonia, Barcelona, Spain

P231 **Application of Central Composite Design to Evaluate the Effect of Dry-Spinning Parameters on Poly (ε-caprolactone) Fibers Properties**
B. Azimi, P. Nourpanah, M. Rabiee, M. G. Cascone, A. Baldassare, S. Arbab, L. Lazzeri
Department of Textile Engineering, Amirkabir University of Technology, Tehran, Iran

P232 **Gentamicin-Loaded Microparticles Immobilized on Porous Scaffolds for Prevention of Biomaterials-Related Bone Infections**
Urszula Posadowska, Malgorzata Krok-Borkowicz, Lucja Rumian, Elzbieta Pamula
Faculty of Materials Science and Ceramics, AGH – University of Science and Technology, Krakow, Poland

P233 **Investigating Mesenchymal Stem Cell Self-Renewal on Nanotopography**
L.C.Y. Lee, L-A. Turner, N. Gadegaard, S. Yarwood, R.M.D. Meek, M.J. Dalby
Centre for Cell Engineering, University of Glasgow, UK

P234 **Elastomeric Polycaprolatone scaffold for cardiovascular tissue engineering**
Shraddha Thakkar, Anita Mol Driessen and Frank Baaijens
Soft Tissue Biomechanics & Tissue Engineering, Eindhoven University of Technology, the Netherlands

P235 **New Injectable Elastomeric Materials for Hernia Repair and their Biocompatibility in vitro and in vivo**
J. Skrobot, L. Zair, W. Ignaczak, M. Ostrowski, M. El Fray
Division of Biomaterials and Microbiological Technologies, West Pomeranian University of Technology, Szczecin, Poland

P236 **Corrosion resistance assessment of NiTi alloys in 0.9% NaCl solution**
Camila Dias dos Reis Barros (Camila Barros) and José Antônio da Cunha Ponciano Gomes (Ponciano Gomes)
Department of Metallurgy and Materials Engineering, Federal University of Rio de Janeiro, Brazil

P237 **Supermacroporous Cryogels for Bioligand Binding**
Ganesh Ingavle, Yishan Zheng, Carol Howell, Irina Savina and Susan Sandeman
Biomaterials and Medical Devices Research Group, University of Brighton, UK

P238 **Modification of nanofiber scaffold by biologically active substances and study of biocompatibility**
Mária Hnátová, Monika Michliková, Jana Dragúňová, Dušan Bakoš
Faculty of Chemical and Food Technology, Slovak University of Technology, Bratislava, Slovakia

P239 **Pre-clinical Evaluation of Additive Manufactured Surfaces for Orthopaedic Applications**
Grace Stevenson, John Haycock, Sarrawat Rehman, James Hunt and Edward Draper
JRI Orthopaedics Ltd, Sheffield, UK

P240 **Central Venous Catheters Functionalised with Chlorhexidine-Hexametaphosphate Nanoparticles for Prolonged Anti-Biofilm Efficacy**
Helena Grady, Sarah Maddocks, Rachel Dommett, Rikke Meyer, Mira Okshevsky, Andrew Collins, Sameer Rahatekar, Michele Barbour
Bristol Centre for Functional Nanomaterials, University of Bristol, UK

P241 **Preliminary data on sol-gel silicate glasses containing magnesium and zinc for dental tissue regeneration**
G. Theodorou, E. Kontonasaki, L. Papadopoulou, N. Kantiranis, G. Zachariades, O.M. Goudouri, A. R. Boccaccini, K.M. Paraskevopoulos, P. Koidis
Department of Physics, Aristotle University of Thessaloniki, Greece

P242 **Material-driven fibronectin networks: modulating the degree of fibrillogenesis**
Hayk Mnatsakanyan, Aarón Maturana Candelas, Alexandre Rodrigo-Navarro, Patricia Rico, José Antonio Gómez Tejedor, Manuel Salmerón-Sánchez, Roser Sabater i Serra
Center for Biomaterials and Tissue Engineering, Universitat Politècnica de València, Spain

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P244 **Development of Biodegradable Virus and miRNA Eluting Stent Technology**
Hannah Stepto, Keith Oldroyd, Lee Cronin, Andrew H Baker
College of Medical Veterinary and Life Sciences, University of Glasgow, UK

P245 **Composite bone cement to improve the primary stability of orthodontic mini-screws**
Alberto Lagazzo, Fabrizio Barberis, Elisabetta Finocchio, Cristian Restano, Marco Capurro
Department of Civil, Chemical and Environmental Engineering, University of Genoa, Italy

P246 **Characteristics and Cytocompatibility of Novel Borophosphate Glasses**
Chenkai Zhu, Ifty Ahmed, Xiaoling Liu, Andy Parsons, Jingsong Liu, Chris Rudd
Division of Materials, Mechanics and Structures, University of Nottingham, UK

P247 **Gelatin/Chitosan Microspheres for a Modulated Drug Delivery System**
Costantino Del Gaudio, Valentina Crognale, Pierluca Galloni, Domenico Ribatti, Alessandra Bianco
Department of Enterprise Engineering, University of Rome "Tor Vergata", Italy

P248 **Design of Multi-Component Artificial Extracellular Matrices and their Effects on Cells Relevant to Wound Healing**
S. Rother, S. Thönes, J. Salbach-Hirsch, S. Moeller, M. Schnabelrauch, U. Anderegg, L. C. Hofbauer, V. Hintze, D. Scharnweber
Max Bergmann Center of Biomaterials, TU Dresden, Germany

P249 **Nanowires on Ti-6Al-4V for Creation of Antimicrobial Orthopaedic Implant Surfaces**
Terje Sjöström, Angela Nobbs and Bo Su
School of Oral & Dental Sciences, University of Bristol, UK

P250 **Evaluation of In Vitro Cytocompatibility of Alginate-Gelatin Crosslinked Hydrogels**
Bapi Sarker, Raminder Singh, Judith A. Roether, Rainer Detsch, Iwona Cicha and Aldo R. Boccaccini
Institute of Biomaterials, University of Erlangen-Nuremberg, Germany

P251 **Osteoblastic Differentiation Induced by Bioactive Glass-Ceramic Surfaces**
E.P. Ferraz, P.T. de Oliveira, M.M. Beloti, M.C. Crovace, O. Peitl-Filho, A.L. Rosa
School of Dentistry of Ribeirão Preto, University of São Paulo, Brazil

P252 **Effect of surfaces properties on bone differentiation in composite scaffolds**
Vincenzo Guarino, Marica Marrese, Francesca Veronesi, Paola Torricelli, Monica Sandri, Anna Tampieri, Milena Fini, Luigi Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Naples

P253 **Controlling Mechanical Properties of Electrospun Gelatin Scaffolds**
Kaido Siimon, Paula Reemann, Uno Mäeorg, Martin Järvekülg
Institute of Physics, University of Tartu, Estonia

P254 **Nanoscale Imaging and Quantitative Nanomechanical Characterization of Biomaterials by Atomic Force Microscopy**
Rob Field, Alex Winkel, Elmar Hartmann, Torsten Mueller, Florian Kumpfe, Joerg Barner
JPK Instruments Ltd, Cambridge, UK

P255 **Transfer of CVD Graphene onto Polymer Substrates: Implications to Blood-Contacting Surfaces**
Gordon Xiong, Antonio Castro Neto, Cleo Choong
School of Materials Science and Engineering, Nanyang Technological University, Singapore

P256 **Contribution of new analgesic or antibacterial properties on an implant for parietal refection: an in vitro and in vivo evaluation**
Nicolas Blanchemain, Guillaume Vermet, Stephanie Degoutin, Feng Chai, Christel Rousseaux, Christel Neut, Bernard Martel, Frederic Hildebrand
INSERM U1008, Biomaterial Research group, University Lille 2, France

P257 **Novel nano-particular calcium phosphate and carbonate phases made by electro-migration technique. A component of silica/collagen based bone replacement materials**
Benjamin Kruppke, Christiane Heinemann, Sascha Heinemann, Anne Keroué, Maria Jäger and Thomas Hanke
Max-Bergmann-Centre of Biomaterials, Technische Universität Dresden, Germany

P258 ***In-situ*** **Synthesized Silver Nanoparticles in Silk Fibroin Nanofibers: Effect of Fibroin Morphology on Ag+ Release Kinetics**
Semih Calamak, Eda Ayse Aksoy, Nusret Ertas, Ceren Erdogdu, Meral Ozalp, Kezban Ulubayram
Graduate Department of Nanotechnology and Nanomedicine, Hacettepe University, Ankara, Turkey

P259 **Sustained Release of Azithromycin from an Electrospun Polycaprolactone Membrane for Guided Tissue Regeneration**
Asha Mathew, Cedryck Vaquette, Dietmar Hutmacher and Saso Ivanovski
Tissue Engineering and Regenerative Medicine, Griffith University, Australia

P260 **Functional Characterisation of SDF-1α GAG Binding Variants**
Nydia Panitz, Lars Baumann, Stephan Theisgen, Daniel Huster and Annette G. Beck-Sickinger
Institute of Biochemistry, University Leipzig, Germany

P261 **Polystyrene Sodium Sulfonate Grafted Electrospun Membrane for Applications in Guided Bone Regeneration**
C. Vaquette, V. Migonney, S. Ivanovski, D. Hutmacher
Institue of Health and Biomedical Innovation, Queensland University of Technology, Australia

P262 **Chlorhexidine-based Antimicrobial Nanoparticles as a Coating for Dental Implants**
Natalie Wood, Howard Jenkinson, Dominic O'Sullivan, Sean Davis and Michele Barbour
Bristol Centre for Functional Nanomaterials, University of Bristol, UK

P263 **PEGylation as a method of modification of collagen-elastin based scaffolds for tissue engineering**
Joanna Skopinska-Wisniewska, Anna Bajek, Justyna Sitkowska, Alina Sionkowska
Faculty of Chemistry, Nicolaus Copernicus University, Torun, Poland

P264 **Gelatin Biofunctionalization of Poly(L-Lactide-co-Glycolide) Surfaces by Post-Plasma Grafting of AEMA**
Malgorzata Krok-Borkowicz, Olga Musial, Paulina Kruczala, Timothy Douglas, Sandra Van Vlierberghe, Peter Dubruel, Elzbieta Pamula
Department of Biomaterials, AGH University of Science and Technology, Krakow, Poland

P265 **Osteoinductive effects of simvastatin loading on mesoporous silica and titania nanoscaled thin films**
Miriam López-Álvarez, Vanesa López-Puente, Jorge Pérez-Juste, Julia Serra, Isabel Pastoriza-Santos, Pío González
New Materials Group, University of Vigo, Spain

P266 **Chitosan-catechol/graphene nanocomposite for biosensing applications**
Peter Sobolewski, Magdalena Pilarz, Małgorzata Aleksandrzak, Ewa Mijowska, Jacek Podolski, Mirosława El Fray
Division of Biomaterials and Microbiological Technologies, West Pomeranian University of Technology, Szczecin, Poland

P267 **Fabrication of microparticles and patterned substrates for directing stem cell growth**
Y. Yang, L. Glennon-Alty, A. Ahmed, L. Qian, P. Murray, D. Bradshaw and H. Zhang
Department of Chemistry, University of Liverpool, UK

P268 **Selenium-doped calcium phosphate coatings on titanium implants with inhibition properties on cancerous osteoblasts**
Cosme Rodríguez-Valencia, Miriam López-Álvarez, Julia Serra, Pío González
Department of Applied Physics, University of Vigo, Spain

P269 **Effects of stirring condition and fluid perfusion on the in-vitro degradation of calcium phosphate cement**
Jie An, J.G.C.Wolke, S.C.G.Leeuwenburgh, J.A.Jansen
Department of Biomaterials, Radboud University Medical Center, The Netherlands

P270 **Ultrastructural features of mesenchymal stem cells in calcium alginate hydrogel during osteogenic differentiation by means of FIB-SEM**
Jakub Grzesiak, Krzysztof Marycz, Agnieszka Śmieszek, Anna Siudzińska
Electron Microscopy Laboratory, Wroclaw University of Environmental and Life Sciences, Poland

P271 **High Throughput Production and Analysis of Tissue Engineering Scaffolds prepared using Combinatorial Chemistry**
Erwin Zant, Maarten M. Blokzijl, Dirk W. Grijpma
Department of Biomaterials Science and Technology, University of Twente, The Netherlands

P272 **Relationship between physical properties and biological response in tyrosine-derived polyarylates explored by association rules**
Daniela C. Soto and Loreto M. Valenzuela
Department of Chemical and Bioprocess Engineering, Pontificia Universidad Católica de Chile

P273 **Generation of functional oxygen groups on parylene C for enhanced biocompatibilty: LDI-MS investigations**
M. Gołda-Cępa, N. Aminlashgari, M. Hakkarainen, K. Envall, A. Kotarba
Faculty of Chemistry, Jagiellonian University, Krakow, Poland

P274 **Controlled Drug Delivery From Bioresorbable Magnesium Orthopaedic Implants**
Jessica A. Lyndon, Ben J. Boyd and Nick Birbilis
Department of Materials Engineering, Monash University, Australia

P275 **Effect of Different Crosslinking Treatments on the Physical Properties of Collagen-based Scaffolds**
Luca Salvatore, Deborah Pedone, Emanuela Calò, Valentina Bonfrate, Marta Madaghiele
Department of Engineering for Innovation, University of Salento, Italy

P276 **Degradation and mechanical properties of biodegradable PLGA film**
Reyhaneh Neghabat Shirazi, Yury Rochev, Peter McHugh
Mechanical and Biomedical Engineering, National University of Ireland, Galway

P277 **Temporal Analysis of Dissolution By-Products and Genotoxic Potential of Spherical Zn-Si Bioglass: "Imageable beads" for Transarterial Embolization**
Muhammad Sami Hasan, Sharon Kehoe and Daniel Boyd
Department of Applied Oral Sciences, Dalhousie University, Halifax, Canada

P278 **A modular flow-chamber bioreactor as a tool for the analysis of degradable materials**
Frank Feyerabend, Ralf Pörtner and Regine Willumeit
Institute of Materials Research, Helmholtz-Zentrum Geesthacht, Germany

P279 **Use of a PTMC-PEG-PTMC coated PTMC film as a postoperative adhesion barrier**
Vincent Verdoold, Ruben R.M. Vogels, Kevin W.Y. van Barneveld, Nicole D. Bouvy and Dirk W. Grijpma
MIRA Institute for Biomedical Technology and Technical Medicine, University of Twente, The Netherlands

P280 **Comparison of Sr-substituted Hydroxyapatite Obtained of Various Precursors through Neutralization Reaction: Characterisation at the Bulk and Particle Level**
L. Stipniece, K. Salma-Ancane and L. Berzina-Cimdina
Institute of General Chemical Engineering, Riga Technical University, Latvia

P281 **Hybrid Multi-layered Coatings for Surface Functionalization of Magnesium alloys for biomedical applications**
Laura Córdoba, Christophe Hélary, Thibaud Coradin, Fátima Montemor
Instituto Superior Técnico, Technical University of Lisbon, Portugal

P282 **Degradation in the Jar: Optimising the *in vitro* enzymatic degradation of collagen-based devices**
Ayelén L Helling, Eleni Tsekoura, Gerard Wall, Yves Bayon, Abhay Pandit, Dimitrios Zeugolis
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway

P283 **Composite Collagen/Bioceramics Strips, Plugs for Bone Filling Defect Repair: A Comparative Study**
Thomas Miramond, Thibaut Galtier, Guy Daculsi, Pascal Borget
Inserm UMRS 791, Université de Nantes, France

P284 **Development of Artificial Stem Cell Microenvironments for Tissue Engineering Applications**
Ilida Ortega Asencio, Sheila MacNeil, Aileen Crawford, Paul Hatton, Frederik Claeyssens
School of Clinical Dentistry, University of Sheffield, UK

P285 **Fabrication of dispersible nanocrystals of bioceramics via a modified Pechini method under non-stoichiometric condition**
Yuko Omori, Masahiro Okada, Shoji Takeda, Naoyuki Matsumoto
Graduate School of Dentistry, Osaka Dental University, Japan

P286 **Titanium with Nanotopography Drives Mesenchymal Stem Cells to Osteoblast Differentiation through miR-4448, -4708 and -4773 Downregulation**
R.B. Kato, B. Roy, F.S. de Oliveira, E.P. Ferraz, P.T. de Oliveira1, M.Q. Hassan, A.L. Rosa, M.M. Beloti
School of Dentistry of Ribeirão Preto, University of São Paulo, Brazil

P287 **Semi-interpenetrating polymer networks (SIPNs) incorporating polygalacturonic acid as biocompatible materials for implantable medical devices**
A. O' Carroll, C. McCoy and L. Carson
School of Pharmacy, Queen's University Belfast, UK

P288 **In Vivo Assessment of Titanium Devices loaded with gentamicin in a methicillin-resistant *Staphylococcus aureus* Rabbit Osteomyelitis Experimental Model**
Gilles Amador, Loic Pichavant, Hélène Carrié, Laurent Plawinski, Valérie Héroguez, Cédric Jacqueline and Marie-Christine Durrieu
Faculté de Médecine, Université de Nantes, France

P289 **Radially Aligned Collagen Scaffolds for Deterministic 3D Models of Cancer Migration**
Anke Husmann, Jonathan Campbell, Samuel Troughton, Robert Hume, Christine J. Watson and Ruth Cameron
Department of Materials Science and Metallurgy, University of Cambridge, UK

P290 **Recombinant Production of Antimicrobial Spider Silk for Wound Dressing Materials**
L. Nilebäck, R. Jansson and M. Hedhammar
Department of Anatomy, Physiology and Biochemistry, Swedish University of Agricultural Sciences, Sweden

P291 **Sol-Gel Hybrids with RAFT-Polymerised Branched Methacrylate Copolymers as Organic component for Tissue Engineering**
Justin Chung, Anthony Maçon, Theoni Georgiou, Julian R. Jones
Department of Materials, Imperial College London, UK

P292 **In vitro Evaluation of a Novel Injectable Thermo-Responsive Polymeric Hydrogel for the Delivery of Self-Assembly Peptide Nanoparticles Containing an Osteoconductive Agent**
S. Pentlavalli, P. Chambers, A. Massey, M. O'Doherty, H. McCarthy and N. Dunne
School of Mechanical and Aerospace Engineering, Queen's University Belfast, UK

P293 **Design of Drug-immobilized Polylactide-graft-Poly(ethyle glycol) as a Temperature-Responsive Injectable Polymer for Controlled Release of Low-molecular-weight Water Soluble Drugs**
Yuichi Ohya, Masay Umezaki, Yasuyuki Yoshida, Akihiro Takahashi and Akinori Kuzuya
Department of Chemistry and Materials Engineering, Kansai University, Japan

P294 **Localized Corrosion Behaviour of Stainless Steel and Titanium Based Hard Tissue Implants**
Ilven Mutlu and Enver Oktay
Metallurgical and Materials Engineering Department, Istanbul University, Turkey

P295 **Degradation of Calcium-Phosphate Based Glasses Controlled by TiO_2 Addition**
A. M. B. Silva, J. M. Oliveira, M. H. V. Fernandes
Centre for Research in Ceramics and Composite Materials, University of Aveiro, Portugal

P296 **Comparison of UV and EDC Cross-linking on Mechanical Properties of Collagen-based Scaffolds for Myocardial Tissue Engineering**
Natalia Davidenko, Carlos Schuster, Ruth Cameron, Serena Best
Department of Materials Science and Metallurgy, University of Cambridge, UK

P297 **Electrochemical Corrosion Behaviour of Highly Porous Beta-Type Ti-Nb-Cu Alloy**
Ilven Mutlu
Metallurgical and Materials Engineering Department, Istanbul University, Turkey

P298 **Recombinant Affinity Silk for Presentation of Active Protein Domains**
R. Jansson, N. Thatikonda, P.-Å. Nygren, M. Hedhammar
Department of Anatomy, Physiology and Biochemistry, SLU, Sweden

P299 **One-pot synthesis of hybrid biocompatible hydrogels based on methacrylamide gelatin and polyacrylamide**
A. Serafim, C. Tucureanu, D. Petre, D.M. Dragusin, A. Salageanu, S. Van Vlierberghe, P. Dubruel, I.C. Stancu
University Politehnica of Bucharest, Romania

P300 **Bactericidal and cell compatible titanium surfaces with TiO_2 nanowires**
T. Diu, M. Ryadnov, N. Faruqui, B. Lamarre, H. Jenkinson and B. Su
School of Oral and Dental Sciences, University of Bristol, UK

P301 **Precise Hyaluronan-tyramine synthesis for tailored cellular microenvironments**
Claudia Loebel, Matteo D´Este, Mauro Alini, Marcy Zenobi-Wong and David Eglin
AO Research Institute Davos, Switzerland

P302 **Hyaluronic Acid-Coated Chitosan Nanoparticles: the Influence of Hyaluronic Acid Presentation**
Arianna Gennari, Erwin Hohn, Abdulaziz Almalik, Nicola Tirelli
Institute of Inflammation and Repair, University of Manchester, UK

P303 **Real-time Monitoring of DNA Plasmid Interactions with Poly (ε-lysine) Dendrons using Optical Waveguide Lightmode Spectroscopy (OWLS)**
Steve Meikle, Valeria Perugini, Mariagemiliana Dessi, Wanda Lattanzi, Enrico Pola, Giandomenico Logroscino, Gary Phillips, Matteo Santin
School of Pharmacy and Biomolecular Sciences, University of Brighton, UK

P304 **The Atomic-Scale Structure of Bio-Resorbable Glasses: Na_2O:P_2O_5**
David Pickup, Robert Moss, Jenni Vibert and Robert Newport
School of Physical Sciences, University of Kent, UK

P305 **Preparation and characterization of Sr, Zn, Si and Fe-doped hydroxyapatite nanoparticles**
Zhitong Zhao, Montserrat Espanol, Maria-Pau Ginebra
Department Materials Science and Metallurgy, Technical University of Catalonia, Spain

P306 **Endothelization and thrombogenicity response of CoCr alloy nano depth patterns for cardiovascular stents**
R. Schieber, M. Fernández-Yagüe, M. Hans, M. Díaz-Ricart, G. Escolar, F. Javier Gil, F. Mücklich, M. Pegueroles
Materials Science Department, Universitat Politècnica de Catalunya, Spain

P307 **Cell Spraying Approach *in vitro* for Coating of Respiratory Tissue Engineered Constructs**
A. L. Thiebes, S. Albers, S. Jockenhoevel and C. G. Cornelissen
Helmholtz-Institute, RWTH Aachen University, Germany

P308 **Biodegradable hyper-branched tissue adhesives for meniscus tears**
Agnieszka I. Bochyńska, Tony G. van Tienen, Gerjon Hannink, Pieter Buma, Dirk W. Grijpma
Department of Orthopaedics, Radboud University Nijmegen Medical Centre, The Netherlands

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P310 **Impact of Surface Treatment on the Properties of Dental Implant Materials**
M. Murphy, R. Lindsay, A. Thomas and N. Silikas
School of Materials, University of Manchester, UK

P311 **Monodisperse microspheres loaded with gentamicin dioctyl sodium sulfosuccinate for the treatment of orthopaedic infections**
Gert-Jan A. ter Boo, Dirk W. Grijpma, Geoff Richards, Fintan T. Moriarty and David Eglin
AO Foundation, Davos, Switzerland

P312 **Retention of Myoblast Differentiation Capacity in 3D Culture on TIPS Microspheres**
Nina Parmar Richard Day
Applied Biomedical Engineering Group, University College London, UK

P313 **Corrosion behaviour of beta titanium alloys containing zirconium for dentistry**
J. Fojt, L. Joska, A. Bernatikova and J. Malek
Department of Metals and Corrosion Engineering, Institute of Chemical Technology in Prague, Czech Republic

P314 **Surface modification of Ti-surfaces by alginate polyelectrolyte layers**
Dana Kubies, Ognen Pop-Georgievski, Eliška Mázl-Chánová, Josef Zemek, Neda Neykova, Roman Deminachuk, Milan Houska, Elena Filová, Lucie Bačáková, František Rypáček
Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic

P315 **Hydrophobic quaternized chitosan for efficient nanoparticle formation and transfection of therapeutic oligonucleotides**
Pedro M.D. Moreno, Joyce C. Santos, Carla P. Gomes, Aida Varela-Moreira, Artur Costa, Francisco Mendonça, Ana P. Pêgo
Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

P316 **In Vitro Response of Human Osteoprogenitor Cells to Cross-Linked Poly(Lactide-co-Caprolactone) Dimethacrylate for Bone Repair**
Laura Brown, Jessica Gwynne, David Shepherd, Leander Poocza, Gerhard Hildebrand, Klaus Liefeth, Roger Brooks, Serena Best
Department of Materials Science & Metallurgy, University of Cambridge, UK

P317 **Drug delivery carriers based on two functionalized spider silk proteins: a novel approach for cancer therapy**
Anna Florczak, Katarzyna Jastrzebska, Andrzej Mackiewicz, Hanna Dams-Kozlowska
NanoBioMedical Centre, Adam Mickiewicz University, Poznan, Poland

P318 **Controlling Intramembranous Bone Mineralisation using a Bone Tissue Engineering Approach**
Anthony J. Deegan, Halil M. Aydin, Bin Hu, Sandeep Konduru, Jan H. Kuiper, Ying Yang
Institute of Science and Technology in Medicine, Keele University, UK

P319 **Generation of electrospun yarns for use as tissue engineered blood vessel scaffolds**
Richard O'Connor and Garrett B.McGuinness
Centre for Medical Engineering Research, Dublin City University, Ireland

P320 **Injectable Thermo-responsive Hyaluronan Hydrogel in a Rabbit Osteochondral Defect Model**
D. Eglin, M. D'Este, I. Dresing and M. Alini
AO Research Institute Davos, Switzerland

P321 **Modification of Porcine Pericardium with Low-Energy Non-thermal Electron Beam**
Jessy Schönfelder, Eberhard Spörl, Richard Funk, Christiane Wetzel
Fraunhofer Institute for Electron Beam and Plasma Technology, Germany

P322 **Developing a Method for Tracking and Quantifying Metallic Particle Internalisation**
Hayley Floyd, Janet Lord, Edward Davies, Owen Addison, Hamid Dehghani, Liam Grover
School of Chemical Engineering, University of Birmingham, UK

P323 **Endothelialization of gas exchange membranes to provide antithrombogenicity**
A. Wenz, K. Linke, M. Schandar, F. Metzger, E. Novosel, J. Schneider, P. Kluger
Institute of Interfacial Process Engineering and Plasma Technology, University of Stuttgart, Germany

P324 **Influence of TCP Content on Chitosan Agglomerated Scaffold Properties**
Martyna Kucharska, Katarzyna Walenko, Małgorzata Lewandowska-Szumieł, Tomasz Brynk, Tomasz Ciach
Biomedical Engineering Laboratory, Warsaw University of Technology, Poland

P325 **In-situ Charge Formation on Hydroxylapatite Coatings**
L. Pluduma, K. A. Gross, H. Koivuluoto, P. Vuoristo, M. Kylmälahti, A. Bystrova, Yu. Dekhtyar
Institute of Biomaterials and Biomechanics, Riga Technical University, Latvia

P326 **Preparation and Characterization of Porous Hydroxyapatite Based Microcarriers for Cell and Drug Delivery**
Merve Guldiken, Sibel Ataol, Caner Durucan, Can Özen, Dilek Keskin and Ayşen Tezcaner
Department of Biotechnology, Middle East Technical University, Ankara, Turkey

P327 **In Vitro studies to measure the inflammatory response of crosslinked poly(lactide-co-caprolactone) dimethacrylate scaffolds**
David Shepherd, Laura Brown, Leander Poozca, Gerhard Hildebrand, Klaus Liefeith, Roger Brooks, Serena Best
Department of Materials Science and Metallurgy, University of Cambridge, UK

P328 **A comparison of two approaches to the formation of antibacterial surfaces: doping with bactericidal element vs drug loading**
I.V. Batenina, D.V. Shtansky, Ph.V. Kiryukhantsev-Korneev, A.N. Sheveyko, N.Yu. Anisimova and N.A. Gloushankova
National University of Science and Technology "MISIS", Russia

P329 **Investigation of Factors Influencing Deposition of Nanocomposite Coating onto Open Cell Foams using Layer-by-Layer Assembly: Design of Experiment Approach**
Monika Ziminska, Helen McCarthy, Nicholas Dunne and Andrew Hamilton
School of Mechanical & Aerospace Engineering, Queen's University Belfast, UK

P330 **In-vivo response of a novel Ti-Ta-Zr-Nb alloy for medical implants**
Patrik Stenlund, Omar Omar, Ulrika Brohede, Susanne Norgren, Lena Emanuelsson, Jukka Lausmaa, Peter Thomsen and Anders Palmquist
BIOMATCELL VINN Excellence Center of Biomaterials and Cell Therapy, Sweden

P331 **Adipose derived stem cells cultured in 2D and 3D settings for the use in bone tissue engineering**
Claudia Kleinhans, Inga Satller, Lena Schmohl, Jakob Barz, Thomas Schiestel, Günter Tovar, Petra J. Kluger
Institute for Interfacial Process Engineering and Plasma Technology, University of Stuttgart, Germany

P332 **Bioengineered spider silk spheres as anti-cancer drug carriers**
Katarzyna Jastrzebska, Anna Florczak, Yinnan Lin, Rosalyn Abbott, Andrzej Mackiewicz, David L. Kaplan, Hanna Dams-Kozlowska
NanoBioMedical Centre, Adam Mickiewicz University, Poznan, Poland

P333 **Aligned electrospun PLGA fibres reinforcing tubular small intestine submucosa**
Omaer Syed, Richard Day, Jonathan Knowles
Eastman Dental Institute, University College London, UK

P334 **Hyaluronic Acid Regulation of Cytokine Secretion, GAG Production and Permeability in Urothelial Cells**
Peadar Rooney, Akshay Srivastava, Leo Quinlain, Abhay Pandit
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway

P335 **Nanohelical Shape and Periodicity dictate Stem Cell Fate**
R. K. Das, O. F. Zouani , G. Kemper, L.Plawinski, C. Labrugère, R. Oda and M-C. Durrieu
Institute of Chemistry & Biology of Membranes & Nanoobjects, Université Bordeaux, Pessac, France

P336 **Controlling the Modulus of Gellan Gum Hydrogels for Inkjet Printing Cell Culture Substrates**
Sam Moxon & Alan M Smith
Department of Pharmacy, University of Huddersfield, UK

P337 **Nano-Micro Architectural Hybrid Composite Scaffold for Bone Tissue Engineering**
Prabhash Dadhich, Bodhisatwa Das, Pavan Kr. Srivas, Pallabi Pal, Sabyasachi Ray, Santanu Dhara
School of Medical Science and Technology, Indian Institute of Technology Kharagpur, India

P338 **Bioactive and Highly Porous Nanofibres via Solution Blow Spinning**
Jonny J. Blaker, Eudes Leonnan, Ana Letícia Braz, Isaque Jerônimo, Aldo R. Boccaccini, Juliano E. Oliveira, Eliton S. Medeiros, Showan N. Nazhat
Materials Science Centre, Manchester University, UK

P339 **The Reciprocal Relationship between Pore Size and Crosslinking, and Their Impact on Porous Scaffold Strength**
S. Ali Poursamar, Alexander N. Lehner, A.P.M. Antunes
Institute for Creative Leather Technology, University of Northampton, UK

P340 **Tuning the 3D Architecture of Gelatin Hydrogel-PLLA Combination Scaffolds**
Jasper Van Hoorick, Marica Markovic, Aleksandr Ovsianikov, Tristan Fowler, Oskar Hoffmann, Peter Dubruel and Sandra Van Vlierberghe
Polymer Chemistry & Biomaterials Research Group, Ghent University, Belgium

P341 **Fine-Tuning Self-Assembling Peptide Hydrogels for Cell Culture Applications**
Laura Szkolar, Alberto Saiani, Aline F Miller, Julie E Gough
School of Materials, University of Manchester, UK

P342 **Sol-Gel Dip-Coating for Immobilization of Poly (ε-lysine) Dendrons on Biomaterials Surfaces for Regenerative Medicine Applications**
Maria Elena Verdenelli, Steve Meikle, Matteo Santin, Roberto Chiesa
Department of Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Italy

P343 **Characterization of Silicone-polycarbonate-urethane/PDMS based Material for Polymeric Heart Valves**
Marianna Asaro, Tamer Al Kayal, Silvia Volpi, Paola Losi, Simona Celi, Mattia Glauber, Giorgio Soldani
National Council of Research, Institute of Clinical Physiology, Massa, Italy

P344 **Study of the effect of SLS manufacturing parameters on the porosity of PHB scaffolds for tissue engineering**
Tatiana F. Pereira, Bruna N. Teixeira, Sara C Marques, Marcelo F. Oliveira, Izaque A. Maia, Jorge V. L. Silva, Gutemberg G. Alves, Marysilvia F. Costa, Rossana M. S. M. Thiré
Programa de Engenharia Metalúrgica e de Materiais, Federal University of Rio de Janeiro

P345 **Assessment of the Corrosion Behaviour and Cytocompatibility of a Nano-fluorided Coating Obtained by Simple Chemical Conversion on AZ31 Biodegradable Mg Alloy**
Emerson Alves Martins, Dorota Artymowicz, Kwangchul Shin, Andrey I. Shukalyuk, Roger C. Newman
Department of Chemical Engineering and Applied Chemistry, University of Toronto, Canada

P346 **Mechanical Response of Calcium Phosphate Biocements**
D.E. Mouzakis, S.P. Zaoutsos, S. Rokidi, N.Bouropoulos
Department of Mechanical Engineering, Technological Educational Institute of Thessaly, Larissa, Greece

P347 **Bacterial Cellulose Based Electrospun Scaffolds for Bone Tissue Engineering**
Deniz Atila, Ayten Karataş, Dilek Keskin, Ayşen Tezcaner
Department of Engineering Sciences, Middle East Technical University, Ankara, Turkey

P348 **WITHDRAWN**

P349 **The Influence of Porosity and Pore Shape of PCL Electro-spun Nano-fibrous Meshes on Macrophage Activation**
Kieran P. Fuller, Colm O'Dowd, Abhay Pandit, and Dimitrios Zeugolis
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway

P350 **Production and Characterization of a Chitosan Coating on Titanium with Silver Nanoparticles**
Daniel Rodríguez, María Godoy-Gallardo, Marc Avilès, Montserrat Español, F. Javier Gil
Biomaterials, Biomechanics and Tissue Engineering group, Technical University of Catalonia, Barcelona, Spain

P351 **Photo-crosslinkable and biopolymer-based inks for inkjet-bioprinting of artificial cartilage**
Eva Hoch, Achim Weber, Günter E.M. Tovar and Kirsten Borchers
Institute for Interfacial Process Engineering, University of Stuttgart, Germany

P352 **A Bioreactor-based 3D Culture System for skeletal Muscle Engineering in Fibrin Scaffolds**
Philipp Heher, Christiane Fuchs, Johanna Prüller, Babette Maleiner, Josef Kollmitzer, Dominik Rünzler, Andreas Teuschl, Susanne Wolbank and Heinz Redl
Trauma Care Consult, Vienna, Austria

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P354 **Functionalization of Polyurethane Substrates with Dendrons for Stem Cell Culture**
Nicola Contessi, Serena Bertoldi, Steven Meikle, Anna Guildford, Silvia Farè, Matteo Santin and Maria Cristina Tanzi
Department of Chemistry, Materials and Chemical Engineering "G. Natta", Politecnico di Milano, Italy

P355 **Quantification of Volume and Size Distribution of Internalised Calcium Phosphate Particles and Their Influence on Cell Fate**
Richard Williams, Midhat Salimi, Gary Leeke, Paula Mendes, Liam Grover
School of Chemical Engineering, University of Birmingham, UK

P356 **Functional PEPM-A-HA cryogels for drug conjugation and cartilage integration**
Joana Magalhaes, Luis Rojo del Olmo, Lara M. Nieto Couce, Julio San Roman and Francisco J. Blanco
CIBER in Bioengineering, Biomaterials and Nanomedicine, Spain

P357 **Biaxial stretching of poly(L-lactide) tubes for improvement of mechanical properties**
A. Løvdal, J. Wenzel Andreasen, L. Pilgaard Mikkelsen, K. Agersted, K. Almdal
Department of Micro- and Nanotechnology, Technical University of Denmark

P358 **Controlled IL-2 Delivery from Novel Photocured Biodegradable Poly (decane-co-tricarballylate) Elastomers**
Husam M. Younes and Mohammad Shaker
Pharmaceutics and Polymeric Drug Delivery Research laboratory, Qatar University, Doha

P359 **Incorporation of Elastin Enhancement Agents on Nano-scale Fibers**
F. Damanik, C. van Blitterswijk, J. Rotmans and L. Moroni
Department of Tissue Regeneration, University of Twente, The Netherlands

P360 **Mineralized Porous Pullulan Microcarriers for Bone Tissue Engineering**
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Biomedical Engineering, Middle East Technical University, Turkey

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Department Biologia Cellular, Fisiologia i Immunologia, Universitat Autònoma de Barcelona, Spain

P362 **Expression of Bone Markers in Pre-Osteoblastic Cells Grown on Titanium Surface with Nanotopography**
L. M. S. de Castro-Raucci, L. N. Teixeira, P.T. de Oliveira, A. L. Rosa, M.M. Beloti
School of Dentistry of Ribeirão Preto, University of São Paulo, Brazil

P363 **A novel method to measure the primary stability of dental implants and orthodontic screws**
Fabrizio Barberis, Alberto Lagazzo, Stefano Benedicenti, Marco Migliorati, Marco Capurro
Department of Civil, Chemical and Environmental Engineering, University of Genoa, Italy

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Victoria Kearns, Robert Poole, Albert Caramoy and Rachel Williams
Department of Eye and Vision Science, University of Liverpool, UK

P365 **Ambient Temperature Patterning of Bioactive Deposits on Curved Metallic Substrates For Orthopaedic Implants**
A. Nithyanandan and M. Edirisinghe
Mechanical Engineering, University College London, UK

P366 **Effect of Substrate Geometry on Mineralization and Cell Proliferation of Calcium Phosphate Ceramics**
E.R. Urquia Edreira, Astghik.Hayrapetyan, J.G.C. Wolke, J.A. Jansen, J.J.J.P. van den Beucken
Department of Biomaterials, Radboud University Nijmegen Medical Center, The Netherlands

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M. Montazerolghaem, L. Nyström, H. Engqvist and M. Karlsson Ott
Department of Engineering Sciences, Uppsala University, Sweden

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Department of Materials Science and Engineering, University of Sheffield, UK

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Łukasz Łapaj, Justyna Wendland, Adrian Mróz, Jacek Markuszewski, Tomasz Wiśniewski
Department of General Orthopaedics, Musculoskeletal Oncology and Trauma Surgery, Poznan University of Medical Sciences, Poland

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N. K. Chana, S. C.F. Rawlinson and K. A. Hing
School of Engineering and Materials Science, Queen Mary University of London, UK

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Ana Gantar, Rok Kocen and Saša Novak
Department for Nanostructured materials, Jožef Stefan Institute, Slovenia

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E. Jablonská, J. Lipov, J. Fojt, L. Joska, T. Ruml
Department of Biochemistry and Microbiology, Institute of Chemical Technology, Prague, Czech Republic

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Network of Excellence for Functional Biomaterials, National University of Ireland, Galway

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Ying-Chiang Ho and Yi-Chang Chung
Institute of Biotechnology, National University of Kaohsiung, Taiwan, ROC

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Department of Obstetrics University Hospital, Zürich, Switzerland

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Institute of Macromolecular Chemistry of the Academy of Sciences of the Czech Republic, Prague

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Necati Harmankaya, Johan Karlsson, Anders Palmquist, Mats Halvarsson, Martin Andersson and Pentti Tengvall
Department of Biomaterials, Sahlgrenska Academy at University of Gothenburg, Sweden

P378 **Localized cell differentiation with BMP-2 in a PEG scaffold using a streptavidin linker**
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Department of Obstetrics, University Hospital Zurich, Switzerland

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David Shepherd, Roger Brooks and Serena Best
Department of Materials Science and Metallurgy, University of Cambridge, UK

P380 **Candida glabrata in mouthwash -coated endotracheal tubes: antibiofilm activity by electronically scanning microscopy**
Danielle Bezerra Cabral, Evandro Watanabe and Denise de Andrade
Fundamental Nursing, University of São Paulo at Ribeirão Preto, Brazil

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Kennedy Omoniala, David Armitage, Susannah Walsh
Leicester School of Pharmacy, De Montfort University, Leicester, UK

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Amany Mostafa, Hassane Oudadesse and Mayyada El Sayed
Biomaterials Department, National Research Centre, Cairo, Egypt

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Brian G. Cousins, Niloofar Ajdari & Alexander M. Seifalian
Centre for Nanotechnology & Regenerative Medicine, University College London, UK

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M. Cantini, K. Gomide, C. González-García, and M. Salmerón-Sánchez
Biomedical Engineering Research Division, University of Glasgow, UK

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Bose Corporation, ElectroForce Systems Group, Eden Prairie, USA

P386 **Biological Performance of Cell-Laden Methacrylated Gellan Gum Hydrogels**
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3B's Research Group, University of Minho, Guimarães, Portugal

P387 **Melt Electrospinning Of PCL/Bioactive Glass Composites In Direct Writing For Highly Ordered Scaffolds For Non-Load Bearing Defects**
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Institute of Health & Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

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Division of Biomedical Engineering, University of Glasgow, UK

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Isabel Hopp, Rachel Williams, Simon Dixon, Patricia Murray
Institute of Translational Medicine, University of Liverpool, UK

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Filiz Kara, Eda Ayse Aksoy, Serpil Aksoy and Nesrin Hasirci
Center of Excellence in Biomaterials and Tissue Engineering, Middle East Technical University, Turkey

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Department of Mining and Materials Engineering, McGill University, Montreal, Canada

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Helmholtz-Zentrum Geesthacht, Zentrum für Material- und Küstenforschung, Germany

P393 **Surface modification of poly(D,L-lactic acid) scaffolds for orthopedic applications: a biocompatible, non-destructive route via diazonium chemistry**
H. Mahjoubi, J. Kinsella, M. Murshed and M. Cerruti
Materials Engineering, McGill University, Montreal, Canada

P394 **Bioactive glass for treatment of tooth hypersensitivity during or after treatment with bleaching**
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Department for Nanostructered Materials, Jožef Stefan Institute, Slovenia

P395 **Selenium-containing hydroxyapatites – spectroscopic studies**
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Department of Inorganic and Analytical Chemistry, Medical University of Warsaw, Poland

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L. Joska, J. Fojt, A. Bernatikova
Department of Metals and Corrosion Engineering, Institute of Chemical Technology in Prague, Czech Republic

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Douglas Ramos Marques, Luis Alberto dos Santos, Sarah Harriet Cartmell, Julie Elizabeth Gough
Materials Science Centre, University of Manchester, UK

P398 **Calcium phosphate nanoparticles carrying BMP-7 plasmid DNA induce osteogenic differentiation in MC3T3-E1 pre-osteoblasts**
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Department of Materials Science and Technology, University of Crete, Heraklion, Greece

P399 **Synthesis and *in vitro* Bioactivity of Cu and Zn doped sol-gel- silicate bioactive glasses**
J. Bejarano, H. Palza, P. Caviedes
Department of Chemical Engineering and Biotechnology, University of Chile

P400 **A pH-responsive polymer-based drug-delivery platform demonstrating intracellular siRNA target-gene knockdown**
D Roebuck and R Chen
Department of Chemical Engineering, Imperial College London, UK

P401 **Using Simulation to Predict the Thermomechanical behaviour Of the Hydrogel Matrix Applied in Drug Delivery System**
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Mathematical Research Institute, University of Rennes, France

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Kroto Research Institute, University of Sheffield, UK

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Samaneh Kheyrrooz, Patricia Y.W. Dankers, Rint P. Sijbesma
Laboratory for Macromolecular and Organic Chemistry, Eindhoven University of Technology, The Netherlands

P404 **Biomineralized hydroxyapatite nanocrystals/graphene oxide as filler for bone tissue engineering**
Maria Grazia Raucci, Daniela Giugliano, Angela Longo, Stefania Zeppetelli, Gianfranco Carotenuto and Luigi Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Naples

P405 **Effects on growth and osteogenic differentiation of mesenchymal stem cells by the strontium-added sol-gel hydroxyapatite gel materials**
Maria Grazia Raucci, Daniela Giugliano, M.A. Alvarez-Perez, C. Demitri and Luigi Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Naples

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Atefeh Mobasseri, Alessandro Faroni, Julie Gough, Giorgio Terenghi, Adam Reid
School of Materials, University of Manchester, UK

P407 **From Bench to bedside: realization of a bioartificial, wearable lung assist device**
Esther Novosel, Annika Wenz, Kirsten Borchers, Markus Schandar, Jörg Schneider, Georg Matheis, Petra Kluger
Novalung GmbH, Heilbronn, Germany

P408 **Gelatin/hydroxyapatite multicomponent system with a modulate biological signals**
Daniela Giugliano, Maria Grazia Raucci and Luigi Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Naples

P409 **Osteogenic differentiation induced by biomineralized gelatin scaffold**
Daniela Giugliano, Maria Grazia Raucci and Luigi Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Naples

P410 **Implantable biocomposite based radical oxigen species scavengers as a therapeutic strategy to manage age related macular degeneration**
Marta O. Freitas, Ana S. Neto, B. Moreno, E. Chinarro and Ana P. Pêgo
Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

P411 **Soft Matrices vs. Hard Minerals: Biomimetic Morphogenesis of Calcium Phosphate in Lyotropic Liquid Crystals**
Wenxiao He and Martin Andersson
Department of Chemical and Biological Engineering, Chalmers University of Technology, Sweden

P412 **Development of titanium alloy-based scaffold by 3D printing for bone tissue engineering**
Pavan Kumar Srivas, Kausik Kapat, Prabhsh Dadhich
Indian Institute of Technology Kharagpur, West Bengal, India

P413 **Mechanical-stress-assisted rapid cell sheets recovery from poly(*N*-isopropylacrylamide) grafted PDMS surfaces**
Yoshikatsu Akiyama, Miki Matsuyama, Naoya Takeda, Masayuki Yamato and Teruo Okano
Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Japan

P414 **The Oceans as a Source and as an Inspiration for Biomaterials Development: Some key examples**
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3B's Research Group, Guimarães, Portugal

P415 **Development and Characterization of Lithium-Releasing Silicate Bioactive Glasses for Bone Repair**
Valentina Miguez-Pacheco, A. Malchere, J. Chevalier and Aldo Boccaccini
Institute of Biomaterials, University of Erlangen-Nuremberg, Germany

P416 **Effect of magnesium extract on osteoblastic progenitor cells differentiation**
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Structural Research on Macromolecules, Helmholtz-Centre Geesthacht, Germany

P417 **Fabrication of bilayer nano/microfibrous scaffold for skin tissue engineering**
Pallabi Pal, Pavan Kumar Srivas, Prabhash Dadhich, Bodhisatwa Das, Santanu Dhara
School of Medical Science & Technology, Indian Institute of Technology Kharagpur, West Bengal, India

P418 **Chemical Guiding of Magnetic Nanoparticles in Dispersed Media Containing Poly(methylmethacrylate-co-vinylpyrrolidone)**
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Polymer Chemistry and Biomaterials Group, Ghent University, Belgium

P419 **Influence of Surface Roughness Parameters on MG63 Cell Viability: Studies on Laser Microtextured Ti6Al4V Surfaces**
Sumanta Mukherjee, Partha Saha, Santanu Dhara
Mechanical Engineering Department, Indian Institute of Technology Kharagpur, India

P420 **Extended Release Drug Layer for POSS-PCU Cardiac Stents**
Megan Livingston and Alexander Seifalian
Division of Surgical and Interventional Sciences, University College London, UK

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C. Brochhausen, H. B. Winther and C. J. Kirkpatrick
Institute of Pathology, University Medical Centre, Mainz, Germany

P422 **Cryostructured hierarchical scaffolds with zonal biochemistry and anisotropic porosity for biomimetic in situ cartilage tissue engineering**
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Department for Functional Materials in Medicine and Dentistry, University of Würzburg, Germany

P423 **Additive Manufactured 3D Scaffolds with Tailorable Surface Topography by a Single-Step Method**
SC Neves, C Mota, CC Barrias, PL Granja, L Moroni
Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

P424 **Biodegradable Biopolymer and Calcium Phosphate Composites Manufactured via Impregnation Method**
Marina Sokolova, Janis Locs
Rudolfs Cimdins Riga Biomaterials Innovations and Development Centre, Riga Technical University, Latvia

P425 **Collagen IV and Fibroblasts as Supportive Factors in Angiogenesis Performed in a Perfusion Bioreactor Setup**
Franziska Kreimendahl, Stefan Weinandy, Julia Frese, Michael Vogt and Stefan Jockenhoevel
Tissue Engineering and Textile Implants, RWTH Aachen University, Germany

P426 **Asymmetric Biodegradable Scaffolds for Vascular Tissue Engineering**
Patrycja Domalik-Pyzik, Anna Morawska-Chochół, Jan Chłopek, Elżbieta Menaszek, Izabella Rajzer
Department of Biomaterials, AGH University of Science and Technology, Krakow, Poland

P427 **Biodegradation studies on some magnesium alloys without Al for biomedical application**
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Department Materials Science and Engineering, University Politehnica of Bucharest, Romania

P428 **Glucose sensitive gelation of hydrogel based on hyaluronan-tyramine conjugate**
Lenka Kohutová, Martin Pravda, Julie Bystroňová, Lucie Wolfová, Vladimír Velebný
Contipro Biotech s.r.o., Dolní Dobrouč, Czech Republic

P429 **Surface modification of injectable microspheres for cell therapy applications**
Abdulrahman Baki, Omar Qutachi, Toby Gould, Emily Overton, Kevin Shakesheff and Cheryl Rahman
Drug Delivery and Tissue Engineering Department, University of Nottingham, UK

P430 **Photocrosslinkable divinyl-fumarate poly-ε-caprolactone for stereolithography application**
A. Ronca, S. Ronca, G. Forte, A. Gloria, R. De Santis, L. Ambrosio
Institute for Polymers, Composites and Biomaterials, National Research Council of Italy, Napoli, Italy

P431 **Novel radiopaque UHMWPE sublaminar wires in a growth-guidance system for the treatment of early onset scoliosis: feasibility in a large animal model**
Alex Roth, Rob Bogie, Paul Willems, Lodewijk van Rhijn, Jacobus Arts
Department Orthopaedic Surgery, Maastricht University Medical Centre, the Netherlands

P432 **3D Plotting of hydrogels based on fibrillar collagen to create scaffolds with defined inner and outer architecture**
Anja Lode, Kristin Faulwasser, Sophie Brüggemeier, Birgit Hoyer, Hagen Baltzer, Michael Meyer, Claudia Winkelmann, Frank Sonntag, Michael Gelinsky
Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universität Dresden, Germany

P433 **Porous bioactive glass foam scaffolds: Comparison of 3 compositions**
Amy Nommeots-Nomm, Aine Delvin, Naomi Todd, Robert Law, Hua Geng, Christopher Mitchell, Peter D. Lee, Julian R. Jones
Department of Materials, Imperial College, London, UK

P434 **Biodegradable nanoparticles coated with hyaluronic acid for targeted and sustained drug delivery to tumors**
Laura Mayol, Marco Biondi, Luisa Russo, Carla Serri, Assunta Borzacchiello, Luigi Ambrosio
Institute of Polymers, Composites and Biomaterials, National Research Council, Naples, Italy

P435 **Human bone marrow as a unique source of both microvascular endothelial cells and mesenchymal stem cells for vascularised bone tissue engineering**
Julien Guerrero, Hugo de Oliveira, Sylvain Catros, Robin Siadous, Reine Bareille, Mohammed Derkaoui, Didier Letourneur, Joelle Amédée
Inserm, U1026 Tissue Bioengineering, University of Bordeaux, France

P436 **Effect of Calcium Phosphate Ceramics Substrate Geometry on Mineralization and Cell Organization and Differentiation**
E.R. Urquia Edreira, A. Hayrapetyan, J.G.C. Wolke, J.A. Jansen, J.J.J.P. van den Beucken
Department of Biomaterials, Radboud University Medical Center, The Netherlands

P437 **Biomechanical & morphological analysis of blend polymeric electrospun scaffolds for Cardiovascular Tissue Engineering**
Alexandros Repanas, Birgit Glasmacher and Dimosthenis Mavrilas
Laboratory for Biomechanics & Biomedical Engineering, University of Patras, Greece

P438 **Biological interaction between a novel Sr-substituted bone cement and mesenchymal stem cells**
M. Montesi, M. Dapporto, S. Panseri, S. Sprio, A. Tampieri
Institute of Science and Technology for Ceramics, National Research Council, Faenza, Italy

P439 **In vitro study of the combined effect of hydroxyapatite nanoparticles and lactoferrin in bone homeostasis**
Monica Montesi, Silvia Panseri, Michele Iafisco, Alessio Adamiano, Anna Tampieri
Institute of Science and Technology for Ceramics, National Research Council, Faenza, Italy

P440 **Fabrication of De-epithelialized Amniotic Membrane/Silk Nanofibre Scaffolds for Skin Tissue Engineering**
Shaghayegh Arasteh, Somaieh Kazemnejad, Mohammad Mehdi Akhondi, Hamed Heidari-Vala, Afsaneh Mohammadzadeh, Sahba Mobini
Reproductive Biotechnology Research Centre, Avicenna Research Institute, ACECR, Iran

P441 **Bioprinting of vasculature at cell-compatible conditions**
Jing Yang, Kevin Shakesheff
Division of Drug Delivery and Tissue Engineering, University of Nottingham, UK

P442 **Creating albumin-binding nanostructured surfaces using a thrombin-inhibiting peptide**
Sidónio C. Freitas, Sílvia Maia, Ana C. Figueiredo, Paula Gomes, Pedro J.B. Pereira, Mário A. Barbosa, M. Cristina L. Martins
Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

P443 **Electrochemical deposition of calcium phosphate coatings on Ti6Al4V substrate**
Richard Drevet, Nader Ben Jaber, Ahmed Tara, Joël Faure and Hicham Benhayoune
Université de Reims Champagne-Ardenne, France

P444 **Soft-matrices based on keratin/alginate for regenerative medicine**
Raquel Silva, Raminder Singh, Bapi Sarker, Judith A. Roether, Iwona Cicha, Joachim Kaschta, Dirk W. Schubert, Rainer Detsch and Aldo R. Boccaccini
Department Materials Science and Engineering, University of Erlangen-Nuremberg, Germany

P445 **In Vitro Evaluation of Nanohydroxyapatite Biocompatibility in 2D vs 3D Cell Culture Systems**
Aileen Crawford, Abigail Pinnock, Veronika Hruschka, Heinz Redl, Paul V Hatton, Cheryl A Miller
Bioengineering & Health Technologies Research Group, University of Sheffield, UK

P446 **Engineering of Staple Electrospun Fibres for Biodegradable Nanocomposites by Particle Enhanced Ultrasonication**
E. Mulky, G. Yazgan, K. Maniura-Weber, R. Luginbuehl, G. Fortunato, A. M. Buehlmann-Popa
Chemistry & Biology, RMS Foundation, Switzerland

P447 **Electrochemically grown mesoporous titania layers**
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Department of Physics, University of Genova, Italy

P448 **Characterisation of DNA Interactions with Cationic Polymer Brush**
Mahentha Krishnamoorthy and Julien Gautrot
School of Engineering & Materials Science, Queen Mary, University of London, UK

P449 **Physicochemical Characterization and *In Vitro* Hemolysis Evaluation of UV Poly(ethylene glycol) Hydrogels**
M. Flores-Reyes, J. Flores-Estrada, M.V. Dominguez-Garcia, M.S. Camarillo-Romero, M.V. Flores-Merino
Research Center in Biomedical Science, UAEM, Mexico

P450 **Gold-Containing PMMA Microspheres. A Route to New Highly Radiopaque Cements for Vertebroplasty**
Leo H. Koole, Ketie Saralidze, Eva Jacobs, Alex Roth, and Paul Willems
Department of Biomedical Engineering, Maastricht University, The Netherlands

P451 **3D Direct Laser Writing of Biomimetic Structures for Osteogenesis Enhanchment**
Attilio Marino, Carlo Filippeschi, Barbara Mazzolai, Virgilio Mattoli, Gianni Ciofani
Center for Micro-BioRobotics, Istituto Italiano di Tecnologia, Pontedera, Italy

P452 **Understanding material properties of 3D poly(ε-caprolactone)-based ternary composite scaffolds responsible for highly improved colonization by Human Bone Marrow Mesenchymal Stem Cells**
J. Idaszek, A. Bruinink, J. Rębiś, V. Zell, W. Święszkowski
Faculty of Materials Science and Engineering, Warsaw University of Technology, Poland

P453 **The vascularization of porous calcium phosphate ceramics: an in vitro and in vivo study**
Ying Chen, Xiangdong Zhu, Yujiang Fan, Xingdong Zhang
National Engineering Research Center for Biomaterials, Sichuan University, People's Republic of China

P454 **Thermal Ageing Effect on the Micromechanical Properties of Fiber-Reinforced Composites for Orthopaedic Applications**
Radek Sedláček, Tomáš Suchý, Karel Balík, Zbyněk Sucharda, Zdeněk Padovec
Department of Mechanics, Biomechanics and Mechatronics, CTU in Prague, Czech Republic

P455 **Fabrication of a Bone Graft Substitute based on a Pre-set Bioactive Glass-Ionomer Cement**
Altair Contreras, Paul V. Hatton, Ian Brook, Abigail Pinnock and Cheryl A Miller
Bioengineering & Health Technologies Research Group, University of Sheffield, UK

P456 **In vivo Response of Biodegradable Biphasic 3D Printed Scaffolds for Bone Tissue Engineering**
S. Ghanaati, M Barbeck, T. Serra, P. Booms, R. Sader, J. A. Planell, M. Navarro, C. J. Kirkpatrick
Institute of Pathology, University Medical Center of the Johannes Gutenberg University Mainz, Germany

P457 **Cobalt alloy specific regulation of bone remodelling via HIF: a cause of aseptic orthopaedic implant failure?**
Yutong Li, Johannes Staufenberg, Jay Mashari, Divyahline Logitharajah and Gavin Jell
Division of Surgery & Interventional Science, University College London, UK

P458 **Trimethyl Chitosan-Based Nanoparticles Intracellular Trafficking and Transfection: a Bioimaging Study**
Aida Varela-Moreira, Carla Pereira Gomes, Maria Gomez-Lázaro, Pedro Miguel Moreno, Ana Paula Pêgo
Instituto de Engenharia Biomédica, Universidade do Porto, Portugal

P459 **Electrospun Polyvinylpyrrolidone Nanocomposites Mesh with Silica-coated Magnetic Nanoparticles**
Rebecca Zhiyu Yuan, Jian Ping Fan and Jie Huang
Department of Mechanical Engineering, University College London, UK

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P461 **Laser surface modification of anodically grown oxide of titanium for biomedical applications**
Diego Pedreira de Oliveira, Laís Tereza Duarte, Adriano Otuka, Claudemiro Bolfarini
Departamento de Engenharia de Materiais, Federal University of São Carlos, Brazil

P462 **Fibrin-Hyaluronic Acid Interpenetrating Network Hydrogel with Improved Fibrin Stability**
Yu Zhang, Philipp Heher, Sujit. Kootala, Heinz Redl, Jöns Hilborn and Dmitri Ossipov
Department of Chemistry-Ångström, Uppsala University, Sweden

P463 **Effect of Preconditioning on 70S30C Bioactive Glass Foam Structure and Protein Adsorption**
Gowsihan Poologasundarampillai, Peter D Lee, Dave Clark, Julian R Jones
Department of Materials, Imperial College, London, UK

P464 **Synthesis and Characterization of Silicate Glasses with the Sol-Gel Process Containing ZnO or SrO**
G. Theodorou, E. Kontonasaki, K. Chrissafis, L. Papadopoulou, N. Kantiranis, T. Zorba, K.M. Paraskevopoulos, P. Koidis
Department of Physics, Aristotle University of Thessaloniki, Greece

P465 **Mechanical Stabilisation of Non-Toxic Collagen Fibres for Tendon Repair**
Anna Sorushanova, India Sweeny, Abhay Pandit, Dimitrios Zeugolis
Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland

P466 **Cell Osteogenic Function Enhancement and Selective Apoptosis by Hydroxyapatite Nanoparticles**
Fangzhu Qing, Zhe Wang, Yanfei Tan and Xingdong Zhang
National Engineering Research Center for Biomaterials, Sichuan University, P. R. China

P467 **Low Temperature Aqueous Precipitation of Nanocrystalline Hydroxyapatite Containing Strontium and Magnesium for Biomedical Application**
Kristine Salma-Ancane, Liga Stipniece and Liga Berzina-Cimdina
Rudolfs Cimdins Riga Biomaterials Innovation and Development Centre, Riga Technical University, Latvia

P468 **Controlled release of nucleic acid to enhance bone regeneration**
Bita Sedaghati, Alexander Ewe, Achim Aigner, Michael C. Hacker, Michaela Schulz-Siegmund
Pharmaceutical Technology, University of Leipzig, Germany

P469 **Determination of Anti-Cancer and Anti-Bacterial Efficacy of Selenium Doped Hydroxyapatite Coating on Titanium Alloy**
Bengi Yılmaz, Zafer Evis, Aysen Tezcaner and Sreeparna Banerjee
Department of Biomedical Engineering, Middle East Technical University, Turkey

P470 **Microfluidic neuronal circuitry – towards therapies for Huntington's disease**
Munyaradzi Kamudzandu, Paul Roach and Rosemary A. Fricker
Institute for Science and Technology in Medicine, Keele University, UK

P471 **Nanoscale Analyses of *Parawixia bistriata* Synthetic Spider Silk Fibres**
Valquíria A Michalczechen-Lacerda, Giovanni R Vianna, André M Murad, Luciano P Silva, Elibio L Rech
Department of Cell Biology, University of Brasilia, Brazil

P472 **Characterization and *In Vitro* Testing of Calcium Phosphate Coatings on Dense and Porous Substrates**
Alexandre Antunes Ribeiro, Roseli Marins Balestra, Mônica Calixto de Andrade, Emanuela Prado Ferraz, Adalberto Luiz Rosa, Paulo Tambasco de Oliveira, Marize Varella de Oliveira
Powder Technology Laboratory, National Institute of Technology, Brazil

P473 **Synthesis and Characterization of Novel Chitosan Hydrogels for Biomedical Applications**
Krzysztof Pazdan, Kinga Pielichowska, Jan Chłopek
Department of Biomaterials, AGH University of Science and Technology, Kraków, Poland

P474 **Silver Nanoparticles Modified Titanium for Medical Implants**
Barbara Szaraniec, Magdalena Oćwieja, Marta Kujda and Bartosz Piec
Department of Biomaterials, Faculty of Materials Science and Ceramics, AGH – University of Science and Technology, Poland

P475 **Synergistic Reinforcement of Poly(e-caprolactone)/Gelatin Nerve Tissue Engineering Scaffolds by Graphene Oxide Nanosheets**
S. Soltanian-Zadeh, Z. S. Ghazali, M. Rabiee, F. Moztarzadeh, M. Mozafari
Biomedical Engineering Department, Amirkabir University of Technology, Tehran, Iran

P476 **Mechanical reinforcement of chitosan-poly(lactic-co-glycolic) acid scaffolds by 58S bioactive glass**
Katayoun Nazemi, Fathollah Moztarzadeh, Masoud Mozafari
Biomedical Engineering Department, Amirkabir University of Technology, Iran

P477 **Co-culture of human monocytes and mesenchymal stem cells in order to simulate the bone remodelling processes**
Claudia Kleinhans, Freia Schmid, Franziska Schmid, Petra J. Kluger
Institute for Interfacial Process Engineering and Plasma Technology, University of Stuttgart, Germany

P478 **Electrospun Poly(ε-caprolactone)/Gelatin Scaffold Electrophoretically Coated with Graphene Oxide for Nerve Tissue Engineering**
Z.S. Ghazali, S. Soltanian-Zadeh, F. Moztarzadeh, M. Mozafari
Biomedical Engineering Department, Amirkabir University of Technology, Iran

P479 **Morphometry of bone tissue around endossal implantation of Hap/TCP granules and autologous mesenchymal cells in rabbits with experimental osteoporosis**
Aleksandrs Grishulonoks, Vita Zalite, Inese Cakstina, Arvids Jakovlevs, Andrejs Skagers
Department of Oral and Maxillofacial Surgery, Riga Stradins University, Latvia

P480 **A Study On 45S5 Bioglass® Foam Dissolution**
V. Melli, L.-P. Lefebvre, L. Altomare, L. De Nardo
Dipartimento di Chimica, Materiali e Ingegneria Chimica G. Natta, Politecnico di Milano, Italia

P481 **Biocompatibility of Poly High Internal Phase Emulsion Scaffolds prepared using Stereolithography**
Atra Malayeri, Ilida Ortega, Frederik Claeyssens, Colin Sherborne, Neil R Cameron, Paul V. Hatton
School of Clinical Dentistry, University of Sheffield, UK

P482 **Implantable hybrid composite for reducing inflammation in age related macular degeneration**
E. Chinarro, L. Pires, Ana P. Pêgo and B. Moreno
Instituto de Cerámica y Vidrio, CSIC, Madrid, Spain

P483 **Hypoxia inducible factor-1α (HIF-1α) stabilization for enhanced cell and tissue construct survival**
Wai Ho, Barry Fuller and Gavin Jell
Division of Surgery and Interventional Science, University College London, UK

P484 **Practical fixation issues of multifunctional bioresorbable miniplates for osteotomies**
Karol Gryń, Anna Morawska-Chochół, Barbara Szaraniec, Magdalena Ziąbka, Jan Chłopek
Department of Biomaterials, AGH University of Science and Technology, Krakow, Poland

P485 **Dynamic Surfaces for Stem Cell Differentiation and Retention of Stem Cell Phenotype**
Laura E. McNamara, Jemma N. Roberts, Jugal Sahoo, Karl V. Burgess, Jake Hay, Hilary Anderson, Richard O.C. Oreffo, Rein Ulijn and Matthew J. Dalby
Centre for Cell Engineering, University of Glasgow, UK

P486 **Cytotoxicity control of SiC nanoparticles introduced into polyelectrolyte multilayer films**
Aldona Mzyk, Roman Major, Bogusław Major
Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Poland

P487 **Effects of Plasma Electrolytic Oxidation Treatment of Titanium and Titanium-Niobium-Zirconium alloys on Leucocyte Inflammatory Response and Human Osteoblast Mineralization**
Constantin-Edi Tanase, Mehdi Golozar, Kim Hoenderdos, Serena M. Best, Roger A Brooks
Division of Trauma & Orthopaedic Surgery, Addenbrooke's Hospital, University of Cambridge, UK

P488 **Development of new bioactive phosphate-based glasses and study of the particle size effects on osteoblasts response for bone implant applications**
Martin Stefanic, Xiang Zhang
Lucideon Ltd., Stoke-on-Trent, UK

P489 **Backside wear in fixed-bearing total knee arthroplasty : the effect of liner locking mechanism and surface roughness of tibial tray**
Łukasz Łapaj, Jacek Markuszewski, Justyna Wendland, Adrian Mróz, Jacek Kruczyński
Deptartment of General Orthopaedics, Musculoskeletal Oncology and Trauma Surgery, Poznan University of Medical Sciences, Poland

P490 **Paraffin versus frozen sectioning in the histologic evaluation of biomaterial implants – a pilot study**
Volker H. Schmitt, Christoph Brochhausen, Dominic Schwarz, Christine Tapprich, Andreas Mamilos, Helmut Hierlemann, Heinrich Planck, C. James Kirkpatrick
Institute of Pathology, University Medical Centre, Johannes Gutenberg-University Mainz, Germany

P491 **WITHDRAWN**

P492 **Composition-Property Relationships for Gallium-Borate Glasses**
K. O'Connell, H. O'Shea, Muhammad Hasan, D. Boyd
Department of Oral Sciences, Dalhousie University, Canada

P493 **RF-Magnetron Sputter Deposited Cap-Based Coatings on the Surface of Titanium**
Maria A. Surmeneva, Roman A. Surmenev, Oleg Prymak, Matthias Epple, Irina I. Selezneva
Department of Theoretical and Experimental Physics, National Research Tomsk Polytechnic University, Russia

P494 **Electrochemical Surface Treatment for Making Antibacterial Porous Oxide Layer on Ti**
Yusuke Tsutsumi, Naofumi Niizeki , Peng Chen, Maki Ashida, Hisashi Doi, Kazuhiko Noda and Takao Hanawa
Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan

P495 **Imaging the structure, dissolution, and bone ingrowth into Bioactive Glass scaffolds**
Peter D. Lee, Taek Bo Kim, Wouter van den Bergh, Hua Geng, Sheng Yue, Christopher Mitchell, Julian Jones
School of Materials, University of Manchester, UK

P496 **Bioactive hydrogels supporting angiogenesis produced by EB-irradiation**
Bozena Rokita, Slawomir Kadlubowski, Piotr Komorowski, Bogdan Walkowiak, Janusz M. Rosiak
Institute of Applied Radiation Chemistry, Technical University of Lodz, Poland

P497 **Nanostructured Organic Layers via Polymer Demixing to Control Mesenchymal Stem Cell Response**
Mohammed Khattak, John Hunt and Raechelle A. D'Sa
Department of Musculoskeletal Biology, Institute of Ageing and Chronic Disease, University of Liverpool, UK

P498 **Role of Gallium doped phosphate-based glasses in the Management of Periodontitis**
Bernadette Lackey, Rohan Sahdev, Quentin Nunes, Tahera Ansari, Susan Higham, David Fernig, Sabeel Valappil
Department of Health Services Research, University of Liverpool, UK

P499 **Antibacterial TiO_2nanotubes incorporated with silver nanoparticles**
Zhijun Guo and Li Zhang
Research Center for Nano-biomaterials, Sichuan University, China

P500 **Bone Nodule Formation by Osteoblast-Like Cells Incubated with a Novel Silane Modification of Glass**
Sandra Fawcett, Nicholas Rhodes, John Hunt and Judith Curran
Department of Musculoskeletal Biology, University of Liverpool, UK

P501 **Manufacturing of AZ91D Implants with Micro-Scale Features by Powder Metallurgy Route**
Aydin Tahmasebifar, Said Murat Kayhan, Zafer Evis, Yusuf Usta and Muammer Koç
Engineering Sciences, Middle East Technical University, Turkey

P502 **Nerve Tissue Engineering Using Blends of Polyhydroxyalkanoates**
L.R. Lizarraga-Valderrama and Ipsita Roy
Faculty of Science and Technology, University of Westminster, London, UK

P503 **Polyethyleneimine-iron oxide hybrid nanomaterials – structure and biocompatibility**
Roxana Mioara Piticescu, Laura Madalina Popescu, Alexandrina Burlacu, Ana-Maria Rosca, Eugeniu Vasile, Andrea Danani
Laboratory of Nanostructured Materials, National R&D Institute for Non-ferrous and Rare Metals, Romania

P504 **Regulation of Sclerostin Expression by ATP and PTH at Different Stages of Human Bone Development**
Osman M Azuraidi, Peter J Wilson, Nicholas P Rhodes and James A Gallagher
UK Centre for Tissue Engineering, Department of Musculoskeletal Biology, University of Liverpool, UK

P505 **Hemocompatible Biomaterial Based on Fibrin Coatings**
Ondřej Kaplan, Tomáš Riedel, Milan Houska, and Eduard Brynda
Department of Biomaterials and Bioanalogous Systems, Academy of Sciences of the Czech Republic, Prague

P506 **Inflammation-modulating biomaterial impacts neutrophil-monocyte juxacrine and paracrine regulation**
Hannah Caitlin Cohen, Tyler Jacob Lieberthal, W. John Kao
Pharmaceutical Sciences Division, School of Pharmacy, University of Wisconsin-Madison, USA

P507 **A Heterotypic Microfluidic Model of PDAC Microenvironment for Investigating Stroma-Tumor Interactions and Therapeutic Evaluations**
Cole Drifka, Kevin Eliceiri, Agnes Loeffler, Sharon Weber, W. John Kao
Department of Biomedical Engineering, University of Wisconsin, Madison, USA

P508 **Enhanced migration of Mesenchymal stem cell spheroids towards glioma**
Smruthi Suryaprakash, Hon Fai Chan and Kam W Leong
Department of Biomedical Engineering, Duke University, USA

P509 **Feasibility study of developing mosaic and tissue engineering pulmonary valved conduits**
Xiufang Xu, Jinhui Ma, Wenbin Li, Haiping Guo, Sheng Wang, Haifeng Shi, Yi Xin, Xuejun Ren, Zifan Zhou
Department of Cardiac Surgery, Beijing Anzhen Hospital, Capital Medical University, China

P510 **A Novel Soft Tissue Model for Biomaterial-Associated Infection and Inflammation – Bacteriological, Morphological and Molecular Observations**
Sara Svensson, Margarita Trobos, Maria Hoffman, Birgitta Norlindh, Sarunas Petronis, Jukka Lausmaa, Felicia Suska and Peter Thomsen
Department of Biomaterials, Sahlgrenska Academy at University of Gothenburg, Sweden

P511 **Pore Structure and Imaging of Collagen- and Elastin-based Scaffolds for Vascular Grafts**
H. Frank, J. Shepherd, S. Best, R. Cameron
Department of Materials Science and Metallurgy, University of Cambridge, U

P512 **Sustained Release of Naproxen Sodium from Electrospun Aligned PLLA/PCL Scaffold for Tendon Tissue Regeneration**
Yuan Siang Lui, Mark P. Lewis, Joachim Say Chye Loo
School of Materials Science and Engineering, Nanyang Technological University, Singapore

P513 **Analysis of cells proliferation after dynamic culture on cross-linked synthetic collagen peptide based microcarriers**
M. La Marca and Suzan van Dongen
Fujifilm Manufacturing Europe, The Netherlands

P514 **Cell Response on the Ti-15Mo alloy Surface after Nanotubes Growth**
Ana Paula Rosifini Alves Claro, André Luiz Reis Rangel, Nathan Trujillo, Ketul C. Popat
Materials and Technology Department, University of Estadual Paulista, São Paulo, Brazil

P515 **Elaboration of degradable PCL-based shape memory materials**
Thomas Defize, Raphaël Riva, Jean-Michel Thomassin, Michaël Alexandre, Bernard Gilbert and Christine Jérôme
Center for Education and Research on Macromolecules, University of Liege, Belgium

P516 **Surface immobilization of a green fibronectin-like protein onto cold plasma modified polystyrene substrates**
O. M. Ba, A. Ponche, O. Gallet, P. Marmey, A.C. Duncan, K. Anselme
Institut de Science des Matériaux de Mulhouse, UMR CNRS 7361, France

P517 **Peptide-Polysaccharide Based Injectable Hydrogel for Sustained Delivery of Active Agents**
Cem Bayram, Ekin Çelik and Emir Baki Denkbaş
Chemistry Department, Aksaray University, Turkey

P518 **Characterisation of Freeze-Dried Collagen-Fibrinogen Constructs**
Jennifer Shepherd, Charlotte Rasser, Serena Best, Ruth Cameron
Department of Materials Science and Metallurgy, University of Cambridge, UK

P519 **Nanosized grooves controlling neuronal cell-organization and axonal outgrowth for cochlear implant optimization**
Alexey Klymov, Joost te Riet, John A Jansen and X Frank Walboomers
Department of Biomaterials, Radboud University Medical Center, Nijmegen, The Netherlands

P520 **The effectiveness of tetra sodium EDTA as an anti-biofilm agent for use in biomaterials**
Steven L Percival and Peter Kite
Institute of Ageing and Chronic Disease, University of Liverpool, UK

P521 **Composite scaffolds from gelatin and elastin-like block polypeptides for tissue engineering**
Duc H. T. Le, Tatsuya Okubo, Ayae Sugawara-Narutaki
Department of Chemical System Engineering, The University of Tokyo, Japan

P522 **Pelvic Floor Repair Materials Releasing Vitamin C to Promote Extracellular Matrix Production**
Naside Mangir, Anthony J Bullock, Sabiniano Roman, Nadir Osman, Christopher Chapple, Sheila MacNeil
Department of Materials Science Engineering, University of Sheffield, UK

P523 **Synthetic collagen peptide based microspheres/ hydrogel hybrid system for bone growth factor delivery**
L. de Miguel, G. van Osch and S.G.J.M. Kluijtmans
Fujifilm Life Sciences, Tilburg, the Netherlands

P524 **Development of a Novel Composite Polymer Material to Facilitate Regeneration of Chronic Non-Healing Wounds**
Alma Akhmetova, Matthew Illsley, Timur Saliev, Gulsim Kulsharova, Talgat Nurgozhin, Sergey Mikhalovsky, Iain Allan
Department of Translational Medicine, Longevity and Global Health, Nazarbayev University, Kazakhstan

P525 **The effect of amphiphilic and anionic b-sheet peptides on blood clotting**
Ziv Azoulay and Hanna Rapaort
Avram and Stella Goldstein-Goren Department of Biotechnology Engineering, Ben-Gurion University of the Negev, Beer - Sheva, Israel

P526 **Processing and Mechanical Properties of Biodegradable βTCP-15Fe15Mg Composites**
Sanjaya K. Swain, Irena Gotman, Elazar Y. Gutmanas
Department of Materials Science and Engineering, Technion, Haifa, Israel

P527 **Economical Production of Medium Chain Length Polyhydroxyalkanoates**
Yiangos Psaras
Faculty of Science and Technology, University of Westminster, London, UK

P528 **A New Method to Rapidly Retrieve Encapsulated Cells from Alginate Hydrogels using Pyrophosphate**
David C. Bassett and Pawel Sikorski
Department of Physics, Norwegian University of Science and Technology, Norway

P529 **Stable Electrospun Hyaluronan Matrices: Production and In Vitro Characterization for the Evaluation as Skin Substitute**
Annalisa La Gatta, Marcella Cammarota, Antonella D'Agostino, Agata Papa, Stefano Guido, Chiara Schiraldi
Department of Experimental Medicine, Second University of Naples, Italy

P530 **Collagen and PNIPAM Hydrogels: An Injectable Solution to Repair the Knee**
Amanda Barnes, J Lapworth, Mark Coles, Stephen Rimmer and Paul Genever
Biomedical Tissue Research Group, University of York, UK

P531 **WITHDRAWN**

P532 **Antimicrobial efficacy and biocompatibility of silver-including nanocomposite carbon coatings**
Dorota Bociaga, Piotr Komorowski, Witold Jakubowski, Anna Jędrzejczak, Anna Olejnik
Division of Biomedical Engineering and Functional Materials, Lodz University of Technology, Poland

P533 **The Impact of Serum, Plasma, and Platelet-Rich Plasma Derived After Exposure to Exercise, Altitude and Recombinant Human Erythropoietin (rHuEpo) on Mesenchymal Stem Cells**
C. Coombs, P. Watt, A. Guildford, G. Bruinvels, Y. Pitsiladis
Brighton Centre for Regenerative Medicine, University of Brighton, UK

P534 **Towards a 3-Dimensional Model of Neural Tissue with Integrated Recording Sites**
H. Lancashire, C. Pendegrass, A. Vanhoestenberghe and G. Blunn
Institute of Orthopaedics and Musculoskeletal Science, University College London, UK

P535 **Indirect Prototyped Polyurethane Urea Scaffolds for Cardiac Tissue Engineering**
Roberto Hernandez-Cordova, Donna A Mathew, Alberto Ceballos-Villanueva, Hugo J Carrillo-Escalante, Araida Hidalgo-Bastida, Fernando Hernandez-Sanchez
Manchester Metropolitan University, UK

P536 **RF Magnetron Sputtering of Multicomponent Ion Doped Phosphate Glasses**
Bryan Stuart, M. Gimeno-Fabra, D. Grant, I. Ahmed and J. Segal
Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham, UK

P537 **Manufacture of Bioresorbable Fibre Reinforced Composites for Fracture Fixation Devices**
Fernando Barrera Betanzos, Miquel Gimeno-Fabra, Joel Segal, David Grant and Ifty Ahmed
Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham, UK

P538 **Development of a Soft Tissue in vitro Model for Ameloblastoma**
T. Eriksson, S. Fedele, R. Day, V. Salih
Eastman Dental Institute, University College London, UK

P539 **Porous Electrospun PCL fibres for Osteo-Differentiation**
Selene Alcantara-Barrera, Zandra Flores, Ricardo Vera-Graziano, Alfredo Maciel- Cerda, L. Araida Hidalgo-Bastida
Manchester Metropolitan University, UK

P540 **Atomic Layer Deposition of Silver on High Aspect Ratio Structures for Medical Implants**

Zahra Golrokhi
Department of Materials Science and Engineering, University of Liverpool, UK

P541 **Characteristics and Cytocompatibility of Novel Borophospahte Glasses**

Chenkai Zhu, Ifty Ahmed, Xiaoling Liu, Andy Parsons, Jingsong Liu, Chris Rudd
Division of Materials, Mechanics and Structures, University of Nottingham, UK

YSF Rapidfire Presentation Programme

Rapidfire Session I Hall 2, Sunday 31st August 12:30 - 13:30

Chairs: Nicholas Bryan, University of Liverpool
Theun van Veen , University of Liverpool
Lorenzo Moroni, University of Twente
Sandra van Vlierberge, University of Gent
Anna-Finne Wistrand, KTH Royal Institute of Technology

1-1 **Carlos Elias**
Mechanical Properties of Zirconia 3-Unit Fixed Dental Prostheses Machined on a CAD/CAM System

1-2 **Sandra Fawcett**
Bone Nodule Formation by Osteoblast-Like Cells Incubated with a Novel Silane Modification of Glass

1-3 **Annika Jokinen**
MP-SPR New characterization method for interactions and ultrathin films

1-4 **Prabhjeet Kaur Dhillon**
Nanoscale Roughness Influences on Cell Proliferation

1-5 **Kasai Nahoko**
Neuronal growth on nano-pillar substrates

1-6 **Annabelle Chan**
Patient Specific Implants Using a Novel Rapid Template Approach

1-7 **Stéphanie Metzger**
Mobilization of Mesenchymal Progenitor Cells to Improve Bone Healing

1-8 **Febriyani Damanik**
Incorporation of Elastin Enhancement Agents on Nano-scale Fibers

1-9 **Helena Grady**
Central Venous Catheters Functionalised with Chlorhexidine-Hexametaphosphate Nanoparticles for Prolonged Anti-Biofilm Efficacy

1-10 **Gloria Huerta-Angeles**
Development of a new biomaterial based on Hyaluronan and oleic acid for drug delivery applications

1-11 **Natalie Wood**
Chlorhexidine-based Antimicrobial Nanoparticles as a Coating for Dental Implants

1-12 **Matteo Gherardi**
Plasma assisted production of residual solvent free PLLA electrospun scaffolds

1-13 **Irina Batenina**
A comparison of two approaches to the formation of antibacterial surfaces: doping with bactericidal element vs drug loading

1-14 **Lorena del Rosario Lizarraga Valderrama**
Nerve Tissue Engineering Using Blends of Polyhydroxyalkanoates

1-15 **Åukasz Åapaj**
Backside wear in fixed-bearing total knee arthroplasty : the effect of liner locking mechanism and surface roughness of tibial tray

1-16 **Danielle Cabral**
Candida glabrata in mouthwash -coated endotracheal tubes: antibiofilm activity by electronically scanning microscopy

1-17 **Prabhash Dadhich**
Nano-Micro Architectural Hybrid Composite Scaffold for Bone Tissue Engineering

1-18 **Diego de Oliveira**
Laser surface modification of anodically grown oxide of titanium for biomedical applications

1-19 **Matteo D'Este**
Amidation via DMTMM: A New and Efficient Method for Hyaluronan Biomaterials Preparation

1-20 **Ting Diu**
Bactericidal and cell compatible titanium surfaces with TiO_2 nanowires

1-21 **Cyrine Dridi**
Design of Biomimetic Fibronectin Fragment Used in Multi-layer Film Coating for Tissue Engineering

1-22 **Matthias Schumacher**
Strontium-substituted CaP bone cements for the treatment of osteoporotic bone defects

1-23 **Farzad Foroutan**
Novel sol-gel synthesis of $(P_2O_5)_{50}$-$(CaO)_{30}$-$(Na_2O)_{15}$-$(Fe_2O_3)_5$ glasses for biomedical application

1-24 **Giulia Gigliobianco**
Surface functionalization of electro-spun Poly(L)Lactic Acid scaffolds with heparin to induce angiogenesis

1-25 **Daniela Giugliano**
Gelatin/hydroxyapatite multicomponent system with a modulate biological signals

1-26 **Chris Hickling**
Fabrication of Stable Biocatalytic Networks for the Cascadable Manufacture of Fine Chemicals

1-27 **Isabel Hopp**
Design, Development and Characterization of Novel Polyacrylates to direct Kidney Progenitor / Stem Cell Differentiation

1-28 **Shihoko Inui**
Dynamic Hardness Evaluation of Two Phases of Au–xPt–8Nb Alloys for MRI-artifact-free Biomedical Devices

1-29 **Wai Ho**
Hypoxia inducible factor-1α (HIF-1α) stabilization for enhanced cell and tissue construct survival

1-30 **Eva Hoch**
Photo-crosslinkable and biopolymer-based inks for inkjet-bioprinting of artificial cartilage

Rapidfire Session II Hall 2, Monday 1st September 12:30 - 13:30

Chairs: Nicholas Bryan, University of Liverpool
Theun van Veen , University of Liverpool
Lorenzo Moroni, University of Twente
Sandra van Vlierberge, University of Gent
Anna-Finne Wistrand, KTH Royal Institute of Technology

2-1 **Kai Stuckensen**
Cryostructured hierarchical scaffolds with zonal biochemistry and anisotropic porosity for biomimetic in situ cartilage tissue engineering

2-2 **Miguel Castilho**
3D powder printing of structured TCP/Alginate scaffolds for bone tissue engineering

2-3 **Monica Montesi**
Biological interaction between a novel Sr-substituted bone cement and mesenchymal stem cells

2-4 **Marta Alves**
Electrodeposition of Nanostructured Zinc Oxide on Zinc with Potential for Bioresorsable Medical Devices

2-5 **Wan Ting Sow**
Electrospun Human Hair Keratin Matrices Affect Human Fibroblast Behavior Through Topographical Cues

2-6 **Joanna Idaszek**
Understanding material properties of 3D poly(ε-caprolactone)-based ternary composite scaffolds responsible for highly improved colonization by Human Bone Marrow Mesenchymal Stem Cells

2-7 **Monika Ziminska**
Investigation of Factors Influencing Deposition of Nanocomposite Coating onto Open Cell Foams using Layer-by-Layer Assembly: Design of Experiment Approach

2-8 **David Shepherd**
In Vitro studies to measure the inflammatory response of crosslinked poly(lactide-co-caprolactone) dimethacrylate scaffolds

2-9 **Constantin Edi Tanase**
Effects of Plasma Electrolytic Oxidation Treatment of Titanium and Titanium-Niobium-Zirconium alloys on Leucocyte Inflammatory Response and Human Osteoblast Mineralization

2-10 **Erwin Zant**
High Throughput Production and Analysis of Tissue Engineering Scaffolds prepared using Combinatorial Chemistry

2-11 **Jie An**
In vitro degradation of calcium phosphate under static and dynamic conditions

2-12 **Khairul Shariff**
Interconnected porous calcium phosphate forming cement consisting of α-TCP foam granules and calcium phosphate acidic solution

2-13 **Shraddha Thakkar**
Elastomeric Polycaprolatone scaffold for cardiovascular tissue engineering

2-14 **Annika Wenz**
Endothelialization of gas exchange membranes to provide antithrombogenicity

2-15 **Patrycja Domalik-Pyzik**
Asymmetric Biodegradable Scaffolds for Vascular Tissue Engineering

2-16 **Hannah Stepto**
Development of Biodegradable Virus and miRNA Eluting Stent Technology

2-17 **Smruthi Suryaprakash**
Enhanced migration of Mesenchymal stem cell spheroids towards glioma

2-18 **Laura Szkolar**
Fine-Tuning Self-Assembling Peptide Hydrogels for Cell Culture Applications

2-19 **Patricia Taladriz**
Photochemical nitric oxide release from a Flutamin derivative incorporated in Pluronic F127 hydrogel

2-20 **Eva Urquia Edreira**
Effect of Substrate Geometry on Mineralization and Cell Proliferation of Calcium Phosphate Ceramics

2-21 **Chenkai Zhu**
Characteristics and Cytocompatibility of Novel Borophosphate Glasses

2-22 **Alma Akhmetova**
Preparation and Characterization of Novel Composite Agarose Films for Wound Healing

2-23 **Yoshikatsu Akiyama**
Mechanical-stress-assisted rapid cell sheets recovery from poly(N-isopropylacrylamide) grafted PDMS surfaces

2-24 **Anthony Deegan**
Controlling Intramembranous Bone Mineralisation using a Bone Tissue Engineering Approach

2-25 **Costantino Del Gaudio**
Gelatin/Chitosan Microspheres for a Modulated Drug Delivery System

2-26 **Luis M Delgado**
Influence of collagen cross-linking on fibroblast and macrophage response

2-27 **Anna Guildford**
Functionalisation of polyurethane films using YIGSR poly(ε-lysine) linked dendrons to manipulate the human mesenchymal cell response

2-28 **Richard Drevet**
Electrochemical deposition of calcium phosphate coatings on Ti6Al4V substrate

2-29 **Anke Husmann**
Radially Aligned Collagen Scaffolds for Deterministic 3D Models of Cancer Migration

2-30 **Gulseren Irmak**
Osteogenic Differentiation of AdMSCs on 17β-Estradiol Releasing Chitosan-Hydroxyapatite Scaffolds

Rapidfire Session III Hall 2, Monday 1st September 18:00 - 19:30

Chairs: Nicholas Bryan, University of Liverpool
Theun van Veen , University of Liverpool
Lorenzo Moroni, University of Twente
Sandra van Vlierberge, University of Gent
Anna-Finne Wistrand, KTH Royal Institute of Technology

3-1 **Claudia Loebel**
Precise Hyaluronan-tyramine synthesis for tailored cellular microenvironments

3-2 **Urvashi Danookdharree**
Tayloring the Interfacial Adhesion of Anodised TiO_2 Nanotubes on Ti-6Al-4V Alloy for Medical Implants

3-3 **Anne Castilho**
Different cryogel architectures as basis for 3D cell culture of prostate cancer cells

3-4 **Luisa Islas**
Modification of PVC catheters with a binary graft of PEGMA and AAc to improve their biocompatibility

3-5 **Frits Hulshof**
High throughput screening of hMSC response to algorithm generated micro-topographies

3-6 **Anna Liguori**
Atmospheric Plasma Surface Modification of Electrospun Poly(L-Lactic Acid): Effect on Mat Properties and Cell Culturing

3-7 **Candice Bellis**
Development of novel nanofunctionalised glass ionomer cements containing chlorhexidine-hexametaphosphate nanoparticles: mechanical properties and method of incorporation

3-8 **Miriam Flores Merino**
Physicochemical Characterization and In Vitro Hemolysis Evaluation of UV Poly(ethylene glycol) Hydrogels

3-9 **Cristina Martins**
Creating albumin-binding nanostructured surfaces using a thrombin-inhibiting peptide

3-10 **Navinderpal Kaur Chana**
Investigation of Ion Exchange between Silicate-substituted Bone Graft Substitutes and Cell Culture Media and the effect on Osteoblast-like Cell Response

3-11 **Nick Dibbert**
Dextran as a Versatile Scaffold for Hydrogel Formation with Hyaluronic Acid

3-12 **Marco Regis**
Effect of fibre reinforcement on the crystallinity of PEEK for articular joint implants

3-13 **Osamu Suzuki**
Biological performance of injectable octacalcium phosphate-hyaluronic acid composites on bone augmentation

3-14 **Bapi Sarker**
Evaluation of In Vitro Cytocompatibility of Alginate-Gelatin Crosslinked Hydrogels

3-15 **Jacobus Arts**
Novel radiopaque UHMWPE sublaminar wires in a growth-guidance system for the treatment of early onset scoliosis: feasibility in a large animal model

3-16 **Linda Vecbiskena**
Nano-sized α-tricalcium phosphate for bone cement

3-17 **Amany Mostafa**
Assessment of the bioactivity of gold doped hydroxyapatite-polyvinyl alcohol nanocomposites

3-18 **Anja Lena Thiebes**
Cell Spraying Approach in vitro for Coating of Respiratory Tissue Engineered Constructs

3-19 **Ana Soto de la Cruz**
Optical Projection Tomography as a Tool for Visualizing Hydrogels Microstructures

3-20 **Jiyoung Bae**
Properties of β-TCP based Calcium Phosphate Cement using mechano-chemical process

3-21 **Keith Blackwood**
Melt Electrospinning Of PCL/Bioactive Glass Composites In Direct Writing For Highly Ordered Scaffolds For Non-Load Bearing Defects

3-22 **Bing Cai**
Evaluation of the effect of polymer content on drug release and mechanical strength of a Geopolymer ER Formulation for opioid drugs

3-23 **Ross Colquhoun**
The degradation relationship between mechanical and in vitro testing of a phosphate glass fibre composite

3-24 **Jennifer Edwards**
Biological Properties of an Acellular Xenogeneic Tendon Graft following Chemical and Irradiation Sterilisation

3-25 **Shahram Ghanaati**
In vivo Response of Biodegradable Biphasic 3D Printed Scaffolds for Bone Tissue Engineering

3-26 **Simrone Gill**
Understanding the Physiochemical Interactions between Denture Adhesives and the aqueous phase

3-27 **Munyaradzi Kamudzandu**
Microfluidic neuronal circuitry – towards therapies for Huntington's disease

3-28 **Lauren Kiri**
A Preliminary Examination of Composition-Property Relationships for Methotrexate-Loaded Germanium-Based Glass Ionomer Cements

3-29 **Alexandra LÃ¸vdal**
Biaxial stretching of poly(L-lactide) tubes for improvement of mechanical properties

3-30 **Sepeedah Soltanian-Zadeh**
Synergistic Reinforcement of Poly(e-caprolactone)/Gelatin Nerve Tissue Engineering Scaffolds by Graphene Oxide Nanosheets

3-31 **Sabrina Stevanovic**
Biomimetic mineralization of early caries lesions with a self-assembling peptide

3-32 **Piotr SzczepaÅ„czyk**
The influence of PEG/PCL ratio on properties of PU/β-TCP composites for orthopaedic applications

3-33 **Gert-Jan ter Boo**
Monodisperse microspheres loaded with gentamicin dioctyl sodium sulfosuccinate for the treatment of orthopaedic infections

3-34 **Masato Ueda**
Control of Bone Conduction on Pure Titanium by Surface Modification

3-35 **Hayley Floyd**
Developing a Method for Tracking and Quantifying Metallic Particle Internalisation

3-36 **Arianna Gennari**
Hyaluronic Acid-Coated Chitosan Nanoparticles: the Influence of Hyaluronic Acid Presentation

3-37 **Zahra Sadat Ghazali**
Electrospun Poly(ε-caprolactone)/Gelatin Scaffold Electrophoretically Coated with Graphene Oxide for Nerve Tissue Engineering

3-38 **Monika GoÅ‚da-CÄ™pa**
Generation of functional oxygen groups on parylene C for enhanced biocompatibilty: LDI-MS investigations

3-39 **Zhijun Guo**
Antibacterial TiO_2 nanotubes incorporated with silver nanoparticles

3-40 **Rahaf Issa**
Poly (ε-lysine) dendrons as modulators of quorum sensing in Pseudomonas aeruginosa

Rapidfire Session IV Hall 2, Tuesday 2nd September 12:30 - 13:30

Chairs: Nicholas Bryan, University of Liverpool
Theun van Veen , University of Liverpool
Lorenzo Moroni, University of Twente
Sandra van Vlierberge, University of Gent
Anna-Finne Wistrand, KTH Royal Institute of Technology

4-1 **Patrik Stenlund**
In-vivo response of a novel Ti-Ta-Zr-Nb alloy for medical implants

4-2 **Louisa Lee**
Investigating Mesenchymal Stem Cell Self-Renewal on Nanotopography

4-3 **Pau Rocas-Alonso**
Installing multifunctionality on titanium with RGD-decorated polymeric nanocapsules: Towards new osteointegrative therapies

4-4 **Thomas Miramond**
Composite Collagen/Bioceramics Strips, Plugs for Bone Filling Defect Repair: A Comparative Study

4-5 **Nina Parmar**
Retention of Myoblast Differentiation Capacity in 3D Culture on TIPS Microspheres

4-6 **Romain Schieber**
Endothelization and thrombogenicity response of CoCr alloy nano depth patterns for cardiovascular stents

4-7 **Satiesh kumar Ramadass**
Sol-gel assisted preparation of collagen hydrolysate scaffold: A Novel biomaterial for the treatment of chronic wounds

4-8 **Judit Buxadera-Palomero**
Antifouling coatings of poly(ethylene glycol) on titanium for dental implants

4-9 **Katarzyna Jastrzebska**
Bioengineered spider silk spheres as anti-cancer drug carriers

4-10 **Maria Godoy-Gallardo**
Bacterial Adhesion and Biofilm Formation Reduced by the Immobilization of hLf1-11 Peptide onto Titanium Surface: A Comparison Study between Direct and ATRP based Covalent Immobilization

4-11 **Pinese Coline**
Design of a new composite structure based on resorbable synthetic and natural polymers for anterior cruciate ligament reconstruction

4-12 **Kristina Nešporová**
Intracellular delivery system based on acylated hyaluronan

4-13 **Thomas Defize**
Elaboration of degradable PCL-based shape memory materials

4-14 **Anne Canning**
Development of new approaches to fabricate scaffolds for deep zone engineered articular cartilage

4-15 **Maryam Montazerolghaem**
Bone mineralization in Zebrafish embryos treated with Silicon ions

4-16 **Sibel Ataol**
Preparation and Characterization of Porous Hydroxyapatite Based Microcarriers for Cell and Drug Delivery

4-17 **Sam Moxon**
Controlling the Modulus of Gellan Gum Hydrogels for Inkjet Printing Cell Culture Substrates

4-18 **Matthew Murphy**
Impact of Surface Treatment on the Properties of Dental Implant Materials

4-19 **Pallabi Pal**
Fabrication of bilayer nano/microfibrous scaffold for skin tissue engineering

4-20 **Sreekanth Pentlavalli**
In vitro Evaluation of a Novel Injectable Thermo-Responsive Polymeric Hydrogel for the Delivery of Self-Assembly Peptide Nanoparticles Containing an Osteoconductive Agent

4-21 **Urszula Posadowska**
Gentamicin-Loaded Microparticles Immobilized on Porous Scaffolds for Prevention of Biomaterials-Related Bone Infections

4-22 **Jae-won Seo**
Ionic liquid-doped and p-NIPAAm-based temperature responsive copolymer: Extraordinary entrapping and releasing behaviors of BSA at 38-42 ^{o}C

4-23 **Laura Brown**
In Vitro Response of Human Osteoprogenitor Cells to Cross-Linked Poly(Lactide-co-Caprolactone) Dimethacrylate for Bone Rep

4-24 **Jason Burke**
The Potential Role of Statins in the Regeneration of Osteoporotic Tissue and the Use of Star Degradable Polymers for Controlled Local Delivery

4-25 **Doris Campos**
Acidic pH resistance of grafted chitosan on dental implant

4-26 **Xinpu Chen**
A Parametric Study of a Mathematic Model for Degradation of Bioresorbable Polymers

4-27 **Aileen Crawford**
In Vitro Evaluation of Nanohydroxyapatite Biocompatibility in 2D vs 3D Cell Culture Systems

4-28 **Eva Jablonska**
In vitro testing of osteoinductivity and osteoconductivity of titanium alloys with nanostructured surface for orthopaedic application

4-29 **Okan Mazmanoglu**
Modification of Magnesium Coated Titanium Surfaces to Control Its Corrosion Rate

4-30 **Samaneh Kheyrrooz**
Bis-urea based supramolecular materials for tissue engineering

Rapidfire Session V Hall 2, Wednesday 3rd September 12:30 - 13:30

Chairs: Nicholas Bryan, University of Liverpool
Theun van Veen , University of Liverpool
Lorenzo Moroni, University of Twente
Sandra van Vlierberge, University of Gent
Anna-Finne Wistrand, KTH Royal Institute of Technology

5-1 **Franziska Koch**
Evaluation of network and pore morphology of self-assembling peptides for biomimetic therapy

5-2 **Reyhaneh Neghabat Shirazi**
Degradation and mechanical properties of biodegradable PLGA film

5-3 **Bita Sedaghati**
Controlled release of nucleic acid to enhance bone regeneration

5-4 **Mario Kurtjak**
New Materials with Antibacterial Action of Functionalized Au Nanoparticles and Ga^{3+} Ions

5-5 **Jessy Schönfelder**
Modification of Porcine Pericardium with Low-Energy Non-thermal Electron Beam

5-6 **Yuichi Ohya**
Design of Drug-immobilized Polylactide-graft-Poly(ethyle glycol) as a Temperature-Responsive Injectable Polymer for Controlled Release of Low-molecular-weight Water Soluble Drugs

5-7 **Laura Madalina Popescu**
Polyethyleneimine-iron oxide hybrid nanomaterials – structure and biocompatibility

5-8 **Iraklis Papageorgiou**
Structural alterations in the dura mater after exposure to clinically relevant CoCr nanoparticles. An organ culture approach

5-9 **Yanny Marliana Baba Ismail**
Synthesis and In Vitro Biocompatibility of Carbonated Hydroxyapatite for Bone Tissue Engineering Application

5-10 **Agnieszka Bochynska**
Biodegradable hyper-branched tissue adhesives for meniscus tears

5-11 **Marina Beaufils-Hugot**
Osteoinduction and survival of human osteosarcoma MG-63 cells on nanoporous hydroxyapatite scaffolds

5-12 **Julian Bejarano**
Synthesis and in vitro Bioactivity of Cu and Zn doped sol-gel- silicate bioactive glasses

5-13 **Abdulrahman Baki**
Surface modification of injectable microspheres for cell therapy applications

5-14 **Sandra Rother**
Design of Multi-Component Artificial Extracellular Matrices and their Effects on Cells Relevant to Wound Healing

5-15 **Sunarso -**
Pre-osteoblast cell responses on phosphate and calcium co-immobilized titanium

5-16 **Shelley Rawson**
Stress and Deformation in a Sutured Tendon Repair; an in silico Model

5-17 **Franziska Kreimendahl**
Collagen IV and Fibroblasts as Supportive Factors in Angiogenesis Performed in a Perfusion Bioreactor Setup

5-18 **Katarzyna Krukiewicz**
Conducting Polymer Platform for Anti-Cancer Drug Delivery

5-19 **Inger Martinez de Arenaza**
A study on PLLA/MWCNT nanocomposites compatibilized with pyrene-end-functionalized PLLA

5-20 **Laura McNamara**
Dynamic Surfaces for Stem Cell Differentiation and Retention of Stem Cell Phenotype

5-21 **Elias Mulky**
Engineering of Staple Electrospun Fibres for Biodegradable Nanocomposites by Particle Enhanced Ultrasonication

5-22 **Kathleen O'Connell**
Composition-Property Relationships for Lanthanum-Borate Glasses

5-23 **Ali Poursamar**
The Reciprocal Relationship between Pore Size and Crosslinking, and Their Impact on Porous Scaffold Strength

5-24 **Maria Grazia Raucci**

Effects on growth and osteogenic differentiation of mesenchymal stem cells by the strontium-added sol-gel hydroxyapatite gel materials

5-25 **Deborah Roebuck**
A pH-responsive polymer-based drug-delivery platform demonstrating intracellular siRNA target-gene knockdown

5-26 **Virginia Saez-Martinez**
Several drugs and model molecules controlled release studies from nanometric vesicles of polymer-lipid complexes

5-27 **Ayse Selcen Alagoz**
A Novel Biological Polyester Based Wet Spun Scaffold for Bone Tissue Engineering

5-28 **Deniz Atila**
Bacterial Cellulose Based Electrospun Scaffolds for Bone Tissue Engineering

5-29 **Victor Baldim**
Nitric oxide releasing polyester blends for topical skin vasodilation

5-30 **Ibrahim Bilem**
New approach of biomaterial design to enhance osteogenesis at the interface bone/implant