

# **27th European Conference on Biomaterials (ESB 2015)**

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Volume 1 of 2

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# Oral presentations

Sunday, 30<sup>th</sup> Aug

Sunday, 30<sup>th</sup> August

## Hall 2 Young Scientists Forum Workshop (1)

Organizers: Sandra Van Vlierberghe, Lorenzo Moroni, Giuseppe Cama, Anna Finne Wistrand, Izabela Stancu

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|-------|---|
| 13:00 | <b>Creative Thinking – How to Come up with New Ideas</b><br><u>Prof. Abhay Pandit</u><br><i>National University of Ireland, Galway, Ireland</i>   |
| 13:35 | <b>How to Get Money to Work out your Idea</b><br><u>Prof. Fabrizio Barberis</u><br><i>University of Genoa, Italy</i>                              |
| 14:10 | <b>You Received Funding – What’s Next – How to Survive in Research Land</b><br><u>Prof. Paul Santerre</u><br><i>University of Toronto, Canada</i> |
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## Hall 2 Young Scientists Forum Workshop (2)

Organizers: Sandra Van Vlierberghe, Lorenzo Moroni, Giuseppe Cama, Anna Finne Wistrand, Izabela Stancu

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| 15:15 | <b>How to Advance Research Results Towards the Development of a Medical Product</b><br><u>Prof. Joachim Kohn</u><br><i>The New Jersey Center for Biomaterials, United States</i> |
| 15:50 | <b>R&amp;D in Creation of Bio-Engineering Product; Researcher Responsibility</b><br><u>Lechosław F. Ciupik</u><br><i>LfC-Medical, Poland</i>                                     |
| 16:25 | <b>Panel Discussion</b>  |
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<b>Hall 1</b>		<b>Plenary Lecture 1</b>
9:00	L1	<b>Bioactive Materials for the Treatment of Major Injuries: Opportunities and Challenges</b> <u>Joachim Kohn</u> <i>The New Jersey Center for Biomaterials, United States</i>
Chairs: Elżbieta Pamuła, <i>AGH University of Science and Technology, Poland</i> Jan Chłopek, <i>AGH University of Science and Technology, Poland</i> Matteo Santin, <i>University of Brighton, United Kingdom</i>		

<b>Hall 1</b>		<b>Plenary Lecture 2</b>
9:45	L2	<b>Regenerative Transplantation - from Experimental Laboratory to Clinical Applications</b> <u>Maria Siemionow</u> <i>University of Illinois at Chicago, Department of Orthopaedics, United States</i>
Chairs: Elżbieta Pamuła, <i>AGH University of Science and Technology, Poland</i> Jan Chłopek, <i>AGH University of Science and Technology, Poland</i> Matteo Santin, <i>University of Brighton, United Kingdom</i>		

<b>Session 1</b>		<b>Bone Tissue Engineering 1</b>
<b>Hall 1</b>		Chairs: Despina Deligianni, <i>University of Patras, Greece</i> Zhongwei Gu, <i>Sichuan University, China</i> Gifty Tetteh, <i>University of Sheffield, United Kingdom (YSF Chair)</i>
11:00	1	<b>Osteocyte Function in Regulating Osteoclast Differentiation on Ceramic Biomaterials</b> <u>Miho Nakamura</u> , Teuvo Hentunen, Jukka Salonen, Naoko Hori, Kimihiro Yamashita <i>Tokyo Medical and Dental University, Japan</i>
11:15	2	<b>Pannexin 1 and Pannexin 3 Regulated Osteoblastic Differentiation of Human Bone Marrow Mesenchymal Stem Cells in a Three Dimensional Macroporous Scaffold</b> <u>Julien Guerrero</u> , Hugo Oliveira, Rachida Aid, Reine Bareille, Didier Letourneur, Yong Mao, Joachim Kohn, Joelle Amedee <i>INSERM U1026, France</i>
11:30	3	<b>Hydrolysis of Octacalcium Phosphate Co-Precipitated Gelatin Composite and Osteoblastic Cell Response</b> Yushi Ezoe, Takahisa Anada, Hajime Yamazaki, Tetsu Takahashi, <u>Osamu Suzuki</u> <i>Tohoku University, Japan</i>
11:45	4	<b>Novel Bioactive Hydrogel-Nanosilica Hybrid Materials as a Potential Injectable Scaffold for Bone Tissue Engineering</b> <u>Joanna Lewandowska-Łańcucka</u> , Sylwia Fiejdasz, Łucja Rodzik, Marcin Koziel, Maria Nowakowska <i>Jagiellonian University, Poland</i>

## Session 2 Hall 2

Chairs: Lucy Di Silvio, *King's College London Guy's Hospital, United Kingdom*  
Dietmar Hutmacher, *Queensland University of Technology, Australia*  
Christoph Tondera, *Helmholtz-Zentrum Dresden-Rossendorf, Germany* (YSF Chair)

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11:00	5	<b>Anisotropic Bilayered Alginate Hydrogels with Channel-Like Pores for Osteochondral Regeneration</b> Kathleen Schütz, Florian Despang, Giuseppe Filardo, Alice Roffi, Annapaola Parilli, Maria Sartori, Francesca Salamanna, Elizaveta Kon, <u>Michael Gelinsky</u> <i>TU Dresden, Germany</i>
11:15	6	<b>Induction of Mesenchymal Stem Cell Differentiation and Cartilage Formation by Cross-Linker-Free Collagen Microspheres</b> <u>Emmanuel Belamie</u> , Marc Mathieu, Sylvain Vigier, Marie-Noëlle Labour, Christian Jorgensen, Danièle Noël <i>Institut Charles Gerhardt Montpellier, France</i>
11:30	7	<b>Biodegradable Glues for Meniscus Repair in a Full-Thickness Explant Model</b> <u>Agnieszka Bochynska</u> , Gerjon Hannink, Tony van Tienen, Dirk Grijpma, Pieter Buma <i>Radboud UMC / University of Twente, Netherlands</i>
11:45	8	<b>A Bioactive Bacterial Exopolysaccharide from Deep-Sea Environment: Modification, Characterization and Chondrogenic Potential for Cartilage Regenerative Medicine</b> <u>Agata Zykwinska</u> , Nathalie Chopin, Corinne Sinquin, Jacqueline Ratiskol, Jean Le Bideau, Boris Halgand, Claire Vinatier, Jérôme Guicheux, Pierre Weiss, Sylvia Collic-Jouault <i>Ifremer, France</i>

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Monday, 31<sup>st</sup> Aug

## Session 3 Hall 3A

Chairs: Nicholas Peppas, *The University of Texas, United States*  
Wojciech Chrzanowski, *The University of Sydney, Australia*  
Katarzyna Krukiewicz, *Silesian University of Technology, Poland* (YSF Chair)

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11:00	9	<b>Functionalized Poly(Vinyl Alcohol) Membranes for the Thermal and Photochemical Nitric Oxide Delivery</b> Sarah Lourenço, <u>Marcelo G. de Oliveira</u> <i>University of Campinas, Brazil</i>
11:15	10	<b>Smart Polymer Nanoparticles for Triggered Drug Releases</b> <u>Christian Tolle</u> , Jan Riedel, Dagmar Wirth, Henning Menzel <i>Braunschweig University of Technology, Germany</i>
11:30	11	<b>Polymer Coatings with Liposomal Drug Deposits towards Substrate-Mediated Drug Delivery</b> <u>Martin E. Lyngé</u> , Marie Baekgaard Laursen, Marina Fernandez-Medina, Brigitte Städler <i>Aarhus University, Denmark</i>
11:45	12	<b>PLGA/Calcium Phosphate Composite Nanoparticles as Efficient Carriers of Hydrophilic Drugs (Nucleic Acids, Proteins)</b> <u>Jens Nelsen</u> , Gregor Dördelmann, Diana Kozlova, Sarah Karczewski, Rosario Lizio, Silko Grimm, Jessica Mueller-Albers, Shirley Knauer, Matthias Epple <i>University Duisburg-Essen, Germany</i>

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## Session 4 Hall 3B

Chairs: Iulian Antoniac, *University Politehnica of Bucharest, Romania*  
Veronique Larreta Garde, *University of Cergy Pontoise, France*  
Yi-Shiang Huang, *University of Liege, Belgium* (YSF Chair)

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| 11:00 | 13 | <p><b>Human Bone Marrow Mesenchymal Stem Cells Responses to Titanium Surface Coated with Type I Collagen Using Natural Cross-Linker Genipin</b><br/>Ying-Sui Sun, <u>Her-Hsiung Huang</u>, Kai-Chun Chang<br/><i>National Yang-Ming University, Taiwan</i></p>  |
| <hr/> |    |   |
| 11:15 | 14 | <p><b>Inspired by Snake - Impulses for Surface Design of Biomaterials, a Biotribological Perspective</b><br/><u>Martina Baum</u>, Lars Heepe, Stanislav Gorb<br/><i>University of Kiel, Germany</i></p>   |
| <hr/> |    |   |
| 11:30 | 15 | <p><b>Molecular Weigth of Hyaluronan Immobilized on the Surface of a Porous Asymetric Scaffold Strongly Affects the Behavior of Co-Cultured Mesenchymal Stem Cells and Colorectal Cancer Cells</b><br/>Elias Al Tawil, Alexandre Monnier, Yusra Kassim, Quang Trong Nguyen, <u>Brigitte Deschrevel</u><br/><i>University of Rouen, France</i></p> |
| <hr/> |    |   |
| 11:45 | 16 | <p><b>Topographical and Biochemical Functionalized PEDOT films as Coating Strategies for Improved Neuroelectrode Functionality</b><br/>Catalina Vallejo-Giraldo, Marc Fernandez-Yague, Abhay Pandit, Eilís Dowd, Manus Jonathan Paul Biggs<br/><i>National University of Ireland, Galway, Ireland</i></p>   |
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## Session 5 Hall 4A

Chairs: Christine Dupont-Gillain, *Université Catholique de Louvain, Belgium*  
Satoru Kidoaki, *Kyushu University, Japan*  
Beatriz Palla Rubio, *University of The Basque Country (UPV/EHU), Spain* (YSF Chair)

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| 11:00 | 17 | <p><b>Structural Features of Biomaterials Influence the Paracrine Relationships that Mesenchymal Stem Cells Establish with Osteoblasts and Endothelial Cells</b><br/>Lara Crespo, Francisco Martín-Saavedra, Laura Saldaña, Enrique Gomez-Barrena, <u>Nuria Vilaboa</u><br/><i>Hospital Universitario La Paz-IdiPAZ, Spain</i></p> |
| <hr/> |    |  |
| 11:15 | 18 | <p><b>Strategy for Providing the Preferential Alignment of Osteoblasts and Extracellular Matrix for Bone Replacement</b><br/><u>Takayoshi Nakano</u>, Aira Matsugaki, Takuya Ishimoto<br/><i>Osaka University, Japan</i></p>   |
| <hr/> |    |  |
| 11:30 | 19 | <p><b>Injectable and Self-Healing Supramolecular Hydrogel for Tissue Engineering Applications</b><br/>Damien Dupin, Pablo Casuso, Natividad Díaz, Adrián Pérez-San Vicente, Iraidia Loinaz, Ibon Odriozola<br/><i>IK4-CIDETEC, Spain</i></p>   |
| <hr/> |    |  |
| 11:45 | 20 | <p><b>Tailoring of DMTMM Conjugated Ha-Tyr Allows Precise Control of Cellular Environment</b><br/><u>Claudia Loebel</u>, Tino Stauber, Matteo D'Este, Mauro Alini, Marcy Zenobi-Wong, David Eglin<br/><i>AO Research Institute, Switzerland</i></p>  |
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**Session 6  
Hall 4B**

**Advanced Manufacturing 1**

Chairs: Sandra Van Vlierberghe, *Ghent University, Belgium*  
Dimitrios Stamatialis, *University of Twente, Netherlands*  
Artur Pinto, *LEPABE and INEB, Portugal (YSF Chair)*

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11:00	21	<b>Jet-Sprayed Hybrid Nanofibrillar Matrices with Controlled Deposition and Delivery of Nanoparticles</b> Nermin Keloglu, Bernard Verrier, Dominique Sigauco-Roussel, Thomas Trimaille, <u>Jerome Sohier</u> <i>UMR CNRS 5305, France</i>
11:15	22	<b>Microstereolithography &amp; Plasma Polymerisation Coating of Nerve Guidance Conduits</b> <u>James Clarke</u> , Adam Harding, Fiona Boissonade, John Haycock, Frederik Claeysens <i>The University of Sheffield, United Kingdom</i>
11:30	23	<b>Smart Biomaterials from Extruded Biopolymer Nanofibres</b> Mohammad Raoufi, Neda Aslankoochi, Sarah Young, Joachim P. Spatz, <u>Dorothea Brüggemann</u> <i>MPI for Intelligent Systems, Germany</i>
11:45	24	<b>Borophosphate Glasses/Fibers and their In-Vitro Properties</b> <u>Jonathan Massera</u> , Yaroslav Shpotyuk, Thierry Jouan, Catherine Bousard-Plédel, Bruno Bureau, Laetitia Petit, Miina Ojansivu, Susanna Mietinen <i>Tampere University of Technology, Finland</i>

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**Session 7  
Hall 1**

**Osteointegration 1**

Chairs: Pamela Habibovic, *Maastricht University, Netherlands*  
Tomasz Ciach, *Warsaw University of Technology, Poland*  
Caitlin Langford, *Monash University, Australia (YSF Chair)*

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12:15	25	<b>In Vivo Study on the Biodegradation Behaviour of Mg-Based Alloys for Orthopaedic Application</b> Sau Shun Wong, <u>Wing Yuk Ip</u> , Luen Chow Chan, Chi Ping Lai <i>The University of Hong Kong, Hong Kong</i>
12:30	26	<b>A Comparative Tribocorrosion Study Between TiN- and DLC- Coated Titanium for Loading Bearing Biomedical Applications</b> <u>Guohua Zhao</u> , Nuria Espallargas, Ragnhild E. Aune <i>KTH Royal Institute of Technology, Sweden</i>
12:45	27	<b>In vitro Biological Studies of Porous Titanium Obtained by Two Different Powder Metallurgy (PM) Techniques: Loose Sintering and Space Holder</b> <u>Juan Pavón</u> , Ana Civantos, Viviana Ramos, Jose A Rodriguez, Yadir Torres, Jose Lopez-Lacomba <i>University of Antioquia, Colombia</i>
13:00	28	<b>“Bridging of Spine” – Comparison of Titanium and Dynamic Polymer Stabilization</b> Lechosław Ciupik, Agnieszka Kierzkowska, Jacek Sterna, Edward Stoński, <u>Monika Cieślik-Górna</u> <i>Institute of Bioengineering and Medical Technologies, Poland</i>

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Monday, 31<sup>st</sup> Aug

## Session 8 Hall 2

### Neural Regeneration 1

Chairs: Yuichi Ohya, *Kansai University, Japan*

Michael Doser, *Institute for Textile Research and Process Engineering, Germany*

Chaoyu Liu, *The University of Hong Kong, Hong Kong (YSF Chair)*

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- 12:15    29    **Interfacing 3D Graphene Oxide Scaffolds with the Injured Rat Spinal Cord**  
Ankor González-Mayorga, Elisa López-Dolado, Jorge E. Collazos-Castro, María Luisa Ferrer, Francisco del Monte, María Concepción Gutiérrez, María Concepción Serrano  
*Hospital Nacional de Paraplégicos, Spain*
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- 12:30    30    **Dual Peptide Functionalised Intraluminal Collagen Fibre Conduits Regulates Neurite Outgrowth of Primary Neurons**  
Sahana Ganesh, William Daly, Abhay Pandit  
*National University of Ireland, Galway, Ireland*
- 
- 12:45    31    **Characterization of Polyurethane/Poly lactide Blends in Terms of their Applicability as Biomaterials Supporting Nerve Regeneration**  
Jadwiga Laska, Paulina Bednarz, Anna Lis, Jakub Grzesiak, Krzysztof Marycz, Dariusz Szarek  
*AGH University of Science and Technology, Poland*
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- 13:00    32    **Spinal Cord Injury Recovery of Rhesus Monkey Implanted with PPy/I Plasma Polymer**  
Axayacatl Morales-Guadarrama, Hermelinda Salgado-Ceballos, Israel Grijalva, Juan Morales-Corona, Camilo Rios, Guillermo J. Cruz, Araceli Diaz-Ruiz, María-Guadalupe Olayo, Laura Alvarez-Mejia, Rodrigo Mondragón-Lozano, Alejandra Ibáñez-Contreras, Braulio Hernández-Godínez, Omar Fabela-Sánchez, Stephanie Sánchez-Torres, Roberto Olayo  
*Instituto Nacional de Investigaciones Nucleares, Mexico*
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## Session 9 Hall 3A

### Drug Delivery 2

Chairs: Anna Karewicz, *Jagiellonian University, Poland*

David Grainger, *University of Utah, United States*

Maria Rosa Aguilar, *Spanish National Research Council, Spain (YSF Chair)*

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- 12:15    33    **Cell Membrane Capsules for Encapsulation of Chemotherapeutic and Cancer Cell Targeting *in Vivo***  
Zhengwei Mao, Yuanhong Zhang, Lihua Peng, Jianqing Gao  
*Zhejiang Univeristy, China*
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- 12:30    34    **Electrospun Triclosan-Loaded Chitosan Nanofibres for Potential Drug Delivery Application**  
Safa Ouerghemmi, Stéphanie Degoutin, Nicolas Tabary, Frédéric Cazaux, Ludovic Janus, Nicolas Blanchemain, Bernard Martel  
*UMET, France*
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- 12:45    35    **Dual Release and Antibacterial Effects of Chlorhexidine and Silver Released from Electrospun Chitosan/Poly(Ethylene Oxide) Nanofibres**  
Jiankang Song, Stefan S. Remmers, Carla J.M. Bartels, Jinlong Shao, Eva Kolwijck, Sander C.G. Leeuwenburgh, John A. Jansen, Fang Yang  
*Radboud University Medical Centre, Netherlands*
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- 13:00    36    **Collagen/Hyaluronic Acid-Based Hydrogels for Brain Applications: the Role of Hyaluronic Acid Molecular Weight**  
Marta Tunesi, Armando Chierchia, Luca Barbieri, Teresa Russo, Lucia Boeri, Annalisa Grimaldi, Roberto De Santis, Luigi Ambrosio, Antonio Gloria, Diego Albani, Carmen Giordano  
*National Research Council, Italy*
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## Session 10 Hall 3B

Chairs: Triantafillos Papadopoulos, *University of Athens, Greece*  
Stanisław Błażewicz, *AGH University of Science and Technology, Poland*  
Elena Diana Giol, *Ghent University, Belgium (YSF Chair)*

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12:15	37	<b>Endothelialisation of Titanium Dioxide Coated Gas Exchange Membranes for the Development of a Bioartificial Lung</b> <u>Michael Pflaum</u> , Marina Kauffeldt, Bettina Wiegmann, Sabrina Schmeckebier, Daniele Dipresa, Sotirios Korossis, Jochen Schein, Axel Haverich <i>Hannover Medical School, Germany</i>
12:30	38	<b>Orthopaedic Bio-activation of PEEK using Plasma Immersion Ion Implantation</b> <u>Edgar Wakelin</u> , Giselle Yeo, Alexey Kondyurin, Michael Davies, David McKenzie, Anthony Weiss, Marcela Bilek <i>University of Sydney, Australia</i>
12:45	39	<b>Alginate Hydrogels, Coated with Calcium Phosphate Nanoparticles by an Electrophoretic Deposition Method</b> <u>Sabrina Daumann</u> , Katrin Wallat, Michael Gepp, Ronan Le Harzic, Heiko Zimmermann, Frank Stracke, Matthias Epple <i>University of Duisburg-Essen, Germany</i>
13:00	40	<b>Calcium- and Phosphorus-Rich Oxide Coatings on Tantalum Obtained by Plasma Electrolytic Oxidation</b> <u>Maciej Sowa</u> , Maja Woszczak, Grzegorz Dercz, Andrey I. Kukharenko, Danila M. Korotin, Ernst Z. Kurmaev, Seif O. Cholakh, Wojciech Simka, Marcin Basiaga <i>Silesian University of Technology, Poland</i>

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## Session 11 Hall 4A

Chairs: Sander Leeuwenburgh, *Radboudumc Biomaterials, Netherlands*  
Rachel Williams, *University of Liverpool, United Kingdom*  
Anna Diez-Escudero, *Technical University of Catalonia (UPC), Spain (YSF Chair)*

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12:15	41	<b>Human E-Cadherin Fusion Protein Matrix Improving the Proliferation and Hepatic Differentiation of Human Mesenchymal Stem Cells</b> <u>Jun Yang</u> , Jinbin Xu, Yan Zhang, Toshihiro Akaike <i>Nankai University, China</i>
12:30	42	<b>Silk-Collagen Inspired Artificial Proteins for 3D Cell Culture Study</b> <u>Małgorzata Włodarczyk-Biegun</u> , Kambiz Farbod, Marc Werten, Frits de Wolf, Jeroen van den Beucken, Sander Leeuwenburgh, Marleen Kamperman, Martien Cohen Stuart <i>Wageningen UR, Netherlands</i>
12:45	43	<b>Fluorescent Hydrogel for Improved Traceability of Biomedical Devices In Vivo</b> <u>Arturo Ibáñez-Fonseca</u> , Francisco Javier Arias, José Carlos Rodríguez-Cabello <i>Bioforge Group, Universidad de Valladolid, Spain</i>
13:00	44	<b>Self-Gelling Elastin and Silk-Elastin Recombinamers for Ophthalmic Applications</b> Alicia Fernández-Colino, Daniela Quinteros, José Bermúdez, Santiago De Palma, José Carlos Rodríguez-Cabello, <u>Francisco Javier Arias</u> <i>University of Valladolid, Spain</i>

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Monday, 31<sup>st</sup> Aug

## Session 12 Cell Encapsulation and Delivery 1

### Hall 4B

Chairs: Pedro Granja, *University of Porto, Portugal*  
 Elżbieta Pamuła, *AGH University of Science and Technology, Poland*  
 Juhi Samal, *National University of Ireland, Galway, Ireland (YSF Chair)*

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| 12:15 | 45 | <p><b>A Functional Macromolecular Gradient Hydrogel System as a Platform to Model Tissue-to-Tissue Interfaces</b><br/> <u>Diana Pereira</u>, Joaquim Oliveira, Rui Reis, Abhay Pandit<br/> <i>3B's Research Group, Portugal</i></p>   |
| <hr/> |    |   |
| 12:30 | 46 | <p><b>Cell-Laden Microparticles for Microtissue Assembling: a Bottom-Up Approach for Bone Tissue Engineering</b><br/> <u>Irene Cano-Torres</u>, Riccardo Levato, Miguel A. Mateos-Timoneda, Elisabeth Engel<br/> <i>Institute for Bioengineering of Catalonia, Spain</i></p>                                |
| <hr/> |    |   |
| 12:45 | 47 | <p><b>Enhanced <math>\beta</math>-cell Pancreatic Islet Formation Using Carboxybetaine-Functionalised Chitosan Nanobeads</b><br/>           Mark Best, Valeria Perugini, Gary Phillips, Anna Guildford, Adrian Bone, Wendy MacFarlane, Matteo Santin<br/> <i>University of Brighton, United Kingdom</i></p> |
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| 13:00 | 48 | <p><b>Assessing the Potential of Fucoidan-Based Microparticles for Biomedical Application</b><br/> <u>Lara L. Reys</u>, Simone S. Silva, Nuno Oliveira, Diana Soares da Costa, João F. Mano, Tiago H. Silva, Rui L. Reis<br/> <i>3B's Research Group, Portugal</i></p>                                      |
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## Hall 1 Plenary Lecture 3

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| 14:45 | L3 | <p><b>In Vitro Models &amp; Nanobiointerfaces: a Multidisciplinary Challenge</b><br/> <u>C. James Kirkpatrick</u><br/> <i>Institute of Pathology, University Medical Center, Johannes Gutenberg University of Mainz, Germany</i></p> <p>Chairs: Michael Doser, <i>Institute for Textile Research and Process Engineering, Germany</i><br/>           Pedro Granja, <i>University of Porto, Portugal</i></p> |
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## Hall 1 Special Fellows Session

### "Biomaterials Education is not Ready for the Challenges of the Future"

Chair: Joachim Kohn, *The New Jersey Center for Biomaterials, United States*

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| 16:00 | <p><b>Speakers:</b><br/> <u>Kristi S. Anseth</u>, <i>University of Colorado, United States</i><br/> <u>David W. Grainger</u>, <i>University of Utah, United States</i><br/> <u>Dietmar Huttmacher</u>, <i>Queensland University of Technology, Brisbane, Australia</i><br/> <u>Lynne C. Jones</u>, <i>Johns Hopkins University, United States</i><br/> <u>Laura Poole-Warren</u>, <i>University of New South Wales, Sydney, Australia</i><br/> <u>Elizabeth Tanner</u>, <i>University of Glasgow, Scotland, United Kingdom</i></p> |
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**Session 13**  
**Hall 2**

Chairs: Guy Daculsi, *INSERM LIOAD UMR 791, France*  
Hasan Uludag, *University of Alberta, Canada*  
Andrada Serafim, *University Politehnica of Bucharest, Romania (YSF Chair)*

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16:00	49	<b>Influence of Calcium Salt Addition on Bioactive Glass Nanospheres</b> Kai Zheng, Qiang Chen, Nicola Taccardi, V. R. Reddy Marthala, Martin Hartmann, <u>Aldo Boccaccini</u> <i>University of Erlangen-Nuremberg, Germany</i>
16:15	50	<b>Bioactive Ti Metal Able to Release Ga Ions: Preparation by Chemical and Heat Treatments</b> <u>Seiji Yamaguchi</u> , Shekhar Nath, Yoko Sugawara, Tomiharu Matsushita, Tadashi Kokubo <i>Chubu University, Japan</i>
16:30	51	<b>High Strength <math>\beta</math>-TCP-Fe-Ag Nanocomposites and Porous Scaffolds for Bone Repair</b> <u>Elazar Gutmanas</u> , Sanyaja Kumar Swain, Irena Gotman <i>Technion, Israel</i>
16:45	52	<b>Tailoring the Bioactivity of Mesoporous Bioglasses: the Role of the Structure Directing Agents</b> Natividad Gómez-Cerezo, Isabel Izquierdo-Barba, <u>Daniel Arcos</u> , María Vallet-Regí <i>Universidad Complutense de Madrid, Spain</i>
17:00	53	<b>Novel Bioactive Glass Composites for Soft Tissue Applications</b> <u>Owen Clarkin</u> , Dermot F. Brougham, Bing Wu, Catriona Lally <i>Dublin City University, Ireland</i>
17:15	54	<b>Thermal and In Vitro Properties of SrO and ZnO Containing Bioactive Glasses</b> Johan Sangder, Susanne Fagerlund, <u>Leena Hupa</u> <i>Åbo Akademi University, Finland</i>
17:30	55	<b>Bioresorbable Chitosan- Bioglass Nanocomposite Scaffolds for Drug Delivery Applications</b> <u>Emad El-Meliegy</u> , Sara Ali <i>National Research Centre, Egypt</i>

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Monday, 31<sup>st</sup> Aug

## Session 14 Stem Cells 1

### Hall 3A

Chairs: Maria Siemionow, *University of Illinois at Chicago, United States*  
 Joaquim Miguel Oliveira, *3B's Research Group - University of Minho, Portugal*  
 Minkle Jain, *Japan Advanced Institute of Science and Technology, Japan (YSF Chair)*

16:00	56	<b>Generation of Limbal Epithelial Cell Progenitors by Two Methods: by Differentiation form iPS Cells and by Direct Trans-differentiation form Human Dermal Fibroblasts</b> Artur Cieřlar-Pobude, Viktoria Knoflach, Saeid Ghavami, <u>Marek Łos</u> <i>Linköping University, Sweden</i>
16:15	57	<b>A Multifactorial Approach Towards Enhanced Extracellular Matrix Deposition and Maintenance of Mesenchymal Stem Cell Phenotype Using Macromolecular Crowding and Low Oxygen Tension</b> Diana Gaspar, Daniela Cigognini, Pramod Kumar, Abhigyan Satyam, Senthil Alagesan, Clara Sanz-Noguéz, Matthew Griffin, Timothy O'Brien, Abhay Pandit, Dimitrios Zeugolis <i>National University of Ireland, Galway, Ireland</i>
16:30	58	<b>Cryptic Cell Cycle Stasis of Human Pluripotent Stem Cells Revealed by Culture in a Biocompatible Thermoresponsive Copolymer Gel</b> Irene Canton, Nicholas J. Warren, Richard Weightman, Andrew Wood, Harry Moore, Steve P. Armes <i>University of Sheffield, United Kingdom</i>
16:45	59	<b>Co-Transplantation of VEGF-Transfected Adipose Derived Stromal Cells to Enhance Bone Regeneration and Neovascularization from Bone Marrow Stromal Cells</b> Mi Lan Kang, Ji Eun Kim, <u>Gun-Il Im</u> <i>Dongguk University Ilsan Hospital, Republic of Korea</i>
17:00	60	<b>Effect of Mechanical Stimulation on Osteogenesis of Self-Assembled Collagen-Cell Seeded Microspheres</b> Maryam Shariatzadeh, Cecile Perrault, Damien Lacroix <i>University of Sheffield, United Kingdom</i>
17:15	61	<b>5-Azacytidine Mediated hMSC Behaviour On Electrospun Scaffolds to Induce Myogenesis</b> Ines Fasolino, <u>Vincenzo Guarino</u> , Valentina Cirillo, Marica Marrese, Luigi Ambrosio <i>Institute of Polymers, Composites and Biomaterials, CNR, Italy</i>
17:30	62	<b>Microvesicles Derived from Stem Cells as a Novel Effective Tool for Transferring of Bioactive Molecules to Mature Primary Cells - Future Implications for Tissue Regeneration</b> Sylwia Bobis-Wozowicz, Katarzyna Kmiotek, Malgorzata Sekula, Sylwia Kedracka-Krok, Elzbieta Kamycka, Urszula Jankowska, Jacek Kolcz, Dariusz Boruczkowski, Buddhadeb Dawn, Zbigniew Madeja, <u>Ewa Zuba-Surma</u> <i>Jagiellonian University, Poland</i>

**Session 15**  
**Hall 3B**

**Antimicrobial Surfaces and Materials 1**

Chairs: Dieter Scharnweber, *Technische Universität Dresden, Germany*  
Mirosława El Fray, *West Pomeranian University of Technology, Poland*  
Hanna Tiainen, *University of Oslo, Norway (YSF Chair)*

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16:00	K1	<b>Keynote</b> <b>Antimicrobial Effects of Biomaterials: Silver Ions</b> <u>Matthias Epple</u> , Svitlana Chernousova, Kateryna Loza, Oleg Prymak, Maria A. Surmeneva, Roman Surmenev <i>University of Duisburg-Essen, Germany</i>
16:30	63	<b>Influences of the pH on the Adsorption Properties of an Antimicrobial Peptide on Titanium Surfaces</b> Yendry Corrales-Ureña, Linda Wittig, Matheus Vieira Nascimento, Juliano Faccioni, <u>Paulo Lisboa-Filho</u> , Klaus Rischka <i>São Paulo State University (UNESP), Brazil</i>
16:45	64	<b>Titanium Modified with Silver Nanoparticles for Oral Implantology</b> Rafał Pokrowiecki, Barbara Szaraniec, Tomasz Zaręba, Tomasz Szponder, Krzysztof Pałka, Jan Chłopek, Stefan Tyski <i>Jagiellonian Medical University, Poland</i>
17:00	65	<b>Bio-Inspired Antimicrobial Surfaces for Titanium Implant</b> Ting Dju, Terje Sjöström, Leanne Fisher, Angela Nobbs, Howrad Jenkinson, Max Ryadnov, Monica Tsimbouri, Matt Dalby, <u>Bo Su</u> <i>University of Bristol, United Kingdom</i>
17:15	66	<b>Antimicrobial Titanium Surfaces</b> <u>Zuzanna Trzcińska</u> , Fabien Brouillet, David Grossin, Cedric Charvilat, Anna Peacock, Artemis Stamboulis <i>University of Birmingham, United Kingdom</i>
17:30	67	<b>Novel Biosensor for Detecting and Preventing Periodontal Disease</b> M. Hoyos-Nogués, S. Brosel-Oliu, N. Abramova, A. Bratov, <u>C. Mas-Moruno</u> , F.J. Gil <i>Technical University of Catalonia, Spain</i>

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Monday, 31<sup>st</sup> Aug

**Session 16**  
**Hall 4A**

Chairs: Neil Cameron, *Monash University, Australia*  
Henning Menzel, *University of Technology Braunschweig, Germany*  
Bernhard Neuhaus, *Universität Duisburg-Essen, Germany* (YSF Chair)

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|-------|----|--|
| 16:00 | K2 | <b>Keynote</b><br><b>Bioinspired Design of Dynamic Macromolecular for Gene Delivery</b><br><u>Zhongwei Gu</u><br><i>Sichuan University, China</i>  |
| 16:30 | 68 | <b>Biostable Gold-Installed Nanocomplexes as siRNA Carriers for Improved In Vivo Tumor Targeting</b><br><u>Roun Heo</u> , Jueun Jeon, Jae Hyung Park<br><i>Sungkyunkwan University, Korea</i>  |
| 16:45 | 69 | <b>ELR Devices for Breast Cancer Gene Delivery</b><br><u>Maria Jesus Piña</u> , Alessandra Girotti, Mercedes Santos, Jose Carlos Rodríguez-Cabello, Francisco Javier Arias<br><i>Universidad Valladolid, Spain</i>   |
| 17:00 | 70 | <b>Ion-Doped Hydroxyapatite Nanoparticles as Potential Vectors in Gene Therapy</b><br><u>Zhitong Zhao</u> , Montserrat Espanol, Maria-Pau Ginebra<br><i>Universitat Politècnica de Catalunya, Spain</i>  |
| 17:15 | 71 | <b>Tuning Transfection Efficiency by Modulating the Biodegradation Rate of Trimethyl Chitosan Nanoparticles</b><br><u>Carla Gomes</u> , Aida Varela-Moreira, Maria Gomez-Lazaro, Pedro Moreno, Ana Pêgo<br><i>INEB - Instituto Engenharia Biomédica, Portugal</i>                |
| 17:30 | 72 | <b>Cell-Penetrating Peptide Mediated Gene Delivery via Polymeric Microneedles; A Platform for DNA Vaccination</b><br><u>Helen McCarthy</u> , Ahlam Ali, Joanne McCaffrey, John McBride, Adrien Kissenpfennig, Ryan Donnelly<br><i>Queen's University Belfast, United Kingdom</i> |
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Monday, 31<sup>st</sup> Aug

**Session 17**  
**Hall 4B**

**Biointerfaces 1**

Chairs: Dimitrios Zeugolis, *National University of Ireland, Galway, Ireland*

Krzysztof Szczubiałka, *Jagiellonian University, Poland*

Rongquan Duan, *University of Twente, Netherlands (YSF Chair)*

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16:00	K3	<b>Keynote</b> <b>Manipulation of Cell Mechanotaxis by Designing Curvature of the Elasticity Boundary on Hydrogel Matrix</b> <u>Satoru Kidoaki</u> , Ayaka Ueki <i>Kyushu University, Japan</i>
16:30	73	<b>Nanotemplated and Fibronectin Based-Polyelectrolytes Films as Bioactive Delivery Systems</b> Adeline Gand, Coline Chat, Mathilde Hindie, Paul Van Tassel, <u>Emmanuel Pauthe</u> <i>University of Cergy-Pontoise, France</i>
16:45	74	<b>Mapping Interactions between MMP1 and Collagen Substrate: from Crystal Structure to Molecular Dynamics with Meta-Dynamics</b> <u>Anthony Nash</u> , Laurent Bozec, Helen Birch, Nora de Leeuw <i>University College London, United Kingdom</i>
17:00	75	<b>Protein-Adsorption and Blood-Interaction Studies on Nanotopography Gradients</b> <u>Rebecca Huber</u> , Katharina Maniura, Nicholas Spencer <i>ETH Zürich/ EMPA St.Gallen, Switzerland</i>
17:15	76	<b>Heterogeneous Polymer Surfaces with Organized Collagen Layers Influence Preosteoblasts Behavior</b> <u>Emilienne Zuyderhoff</u> , <u>Christine Dupont-Gillain</u> <i>Université Catholique de Louvain, Belgium</i>
17:30	77	<b>Nanoroughness and Oxygen Functional Groups on Parylene C Coating: Towards Anti-Infective and Biocompatible Implants Surface</b> <u>Monika Gołda-Cępa</u> , Monika Brzychczy-Wloch, Minna Hakkarainen, Klas Engvall, Andrzej Kotarba <i>Jagiellonian University, Poland</i>

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Monday, 31<sup>st</sup> Aug

Tuesday, 1<sup>st</sup> September

**Hall 1 Plenary Lecture 4**

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- 9:00 L4 **Medical Translational Research: A Different Route to Fundamental Research**  
Geoff Richards  
*AO Research Institute Davos, Switzerland*
- Chairs:** Joelle Amedee, *INSERM, U1026, France*  
Marc Bohner, *RMS Foundation, Switzerland*
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**Hall 1 Translational Research Symposium (1)**

Organizers: Yves Bayon, Marc Bohner, David Eglin, Geoff Richards, Dimitrios Zeugolis

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- 10:00 TRS1 **Clinical Needs Based Biomaterial Strategy: Reducing the Risk that Innovation is “Lost in Translation” in Products for Poor Quality Bone**  
Philip Procter  
*Medical Device Industry Consultant, France*
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- 10:20 TRS2 **Best Practice for Registration Trials of Biodegradable Implants**  
Nils Reimers  
*Manager R&D, Global Funding & Reimbursement, Stryker Trauma & Extremities, Germany*
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- 10:40 TRS3 **New Concept of Hybrid Polymer Composites for Implant Applications**  
Xiang Zhang  
*Lucideon Ltd., Royal Society Industry Fellow at University of Cambridge, United Kingdom*
- TRS4 **Novel Biodegradable and Biocompatible Polymers for Medical Applications**  
Ipsita Roy  
*University of Westminster, London, United Kingdom*
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Tuesday, 1<sup>st</sup> Sept

**Session 18 Smart Biomaterials 1**  
**Hall 2**

**Chairs:** Che Connon, *Newcastle University, United Kingdom*  
Pedro Granja, *INEB - University of Porto, Portugal*  
Giuseppe Cama, *University of Ghent, Belgium (YSF Chair)*

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- 10:00 78 **Overcoming Transport Limitation in 3D Cell Culture by Using a New Class of Oxygen Delivery Systems**  
Antonio Paciello, Giuseppe Amalfitano, Alessandro Garziano, Francesco Urciuolo,  
Paolo Antonio Netti  
*Istituto Italiano di Tecnologia, Italy*
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- 10:15 79 **Tunable Biodegradable Polyurethane with Thermal Activation Cues at Human Body Temperature**  
Maziar Matloubigharagozloo, V. Prasad Shastri  
*Hermann Staudinger Institute of Macromolecular Chemistry, Germany*
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- 10:30 80 **Mixed Matrix Membranes for Removal of Protein-Bound Toxins from Human Plasma**  
Esmee van Geffen, Denys Pavlenko, Karin Gerritsen, Dimitrios Stamatialis  
*University of Twente, Netherlands*
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- 10:45 81 **Glucose Delivery System Based-Hydrogel Composite Scaffold for Enhancing MSC Survival**  
Julie Boisselier, Joseph Paquet, Laurent Bidault, Michael Deschepper, Elodie Lefebvre,  
Charline Gossart, Julie Dubois, Adeline Gand, Delphine Logeart-Avramaglou,  
Veronique Larreta Garde, Emmanuel Pauthe, Hervé Petite  
*University of Cergy-Pontoise, France*
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**Session 19**  
**Hall 3A**

**Wound Healing 1**

Chairs: Julio San Roman, *Institute of Polymer Science and Technology, CSIC, Spain*  
Miriam V. Flores-Merino, *Autonomous University of The State of Mexico, Mexico*  
Peter Duckworth, *University of Bristol, United Kingdom (YSF Chair)*

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10:00	82	<b>In Situ Skin Regeneration by the Gene-Activated Materials</b> <u>Lie Ma</u> , Luyan Li, Xing Liu, Rui Guo, Changyou Gao <i>Zhejiang University, China</i>
10:15	83	<b>Modulation of Inflammatory Macrophage Activation by StarPEG–Heparin Based Hydrogels to Improve Impaired Wound Healing</b> Nadine Lohmann, Wandel Elke, Inka Forstreuter, Lucas Schirmer, Uwe Freudenberg, Carsten Werner, Jan Simon, <u>Sandra Franz</u> <i>University Leipzig, Germany</i>
10:30	84	<b>Nano-Microfibrous Scaffold for Burn-Wound Healing</b> <u>Pallabi Pal</u> , Pavan Srivas, Prabhash Dadhich, Bodhisatwa Das, Santanu Dhara, Arun Achar <i>Indian Institute of Technology, India</i>
10:45	85	<b>Expression Pattern of Tissue Transglutaminase in the Response to Gelatin based Hydrogels <i>In Vitro</i> and <i>In Vivo</i></b> <u>Sandra Ullm</u> , Christoph Tondera, Robert Wodtke, Tim Gebauer, Axel Neffe, Andreas Lendlein, Reik Löser, Jens Pietzsch <i>Helmholtz-Zentrum Dresden-Rossendorf, Germany</i>

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**Session 20**  
**Hall 3B**

**Surface Modification 3**

Chairs: Håvard Haugen, *University of Oslo, Norway*  
Véronique Migonney, *Université Paris 13, France*  
Catalina Vallejo Giraldo, *National University of Ireland, Galway, Ireland (YSF Chair)*

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10:00	86	<b>Functionalization of Scaffold Surfaces: Role of Ce Valence States of Cerium Oxide Nanoparticles in Control of Cell Proliferation</b> <u>Tamaki Naganuma</u> <i>National Institute for Materials Science (NIMS), Japan</i>
10:15	87	<b>Antibacterial Jet Bioactive Surfaces</b> <u>Irina Sukhorukova</u> , Alexander Sheveyko, Philipp Kiryukhantsev-Korneev, Natalya Gloushankova, Sergey Ignatov, Dmitry Shtansky <i>National University of Science and Technology, Russian Federation</i>
10:30	88	<b>Differential Response of Human Bone Marrow Cells on Aligned vs Randomly Oriented Carbon Nanotubes</b> Anthoula Kroustalli, <u>Despina Deligianni</u> <i>University of Patras, Greece</i>
10:45	89	<b>Bioinspired Thin Films Materials for Direct Blood Contact</b> <u>Klaudia Trembecka-Wojciga</u> , Roman Major, Juergen M. Lackner, Hanna Plutecka, Boguslaw Major <i>Institute of Metallurgy and Materials Science PAS, Poland</i>

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## Session 21 Hall 4A

Chairs: Michael Gelinsky, *Technische Universität Dresden, Germany*  
 Yasuhiko Tabata, *Kyoto University, Japan*  
 Judith Hahner, *Leibniz-Institute für Polymerforschung Dresden, Germany (YSF Chair)*

10:00	90	<b>Mechanical &amp; Degradation Characterisation of AZ31 Magnesium (Mg) for Use in Paediatric Tracheal Stents</b> <u>Isaiah Adekanmbi</u> , K. Elizabeth Tanner, Haytham Kubba, Helen Lu <i>Glasgow University, United Kingdom</i>
10:15	91	<b>Superior Lubrication Ability of Artificial Hydrogel Cartilage</b> <u>Teruo Murakami</u> , Seido Yarimitsu, Kazuhiro Nakashima, Tetsuo Yamaguchi, Yoshinori Sawae, Nobuo Sakai, Atsushi Suzuki <i>Kyushu University, Japan</i>
10:30	92	<b>Sr- and Zn-Substituted Calcium Phosphates-Based Composites for Osteochondral Tissue Engineering Scaffolding</b> <u>Sandra Pina</u> , Joaquim M. Oliveira, Rui L. Reis <i>University of Minho, Portugal</i>
10:45	93	<b>Si-HPMC and Si-Chitosan Hydrogel for Cartilage Tissue Engineering</b> <u>Gildas Réthoré</u> , Cécile Boyer, Amadou Touré, Fabienne Jordana, Olivier Gauthier, Jérôme Guicheux, Pierre Weiss <i>LIOAD - Université de Nantes, France</i>

## Session 22 Hall 4B

Chairs: Mariacristina Tanzi, *Politecnico di Milano, Italy*  
 Roman Major, *Institute of Metallurgy and Materials Science PAS, Poland*  
 Solène Passemard, *Ecole Polytechnique Fédérale de Lausanne, Switzerland (YSF Chair)*

10:00	94	<b>Response of Human Macrophages to Cytokine Induction under Three-Dimensional (3D) Artificial Extracellular Matrix (ECM) Mimicking Conditions</b> <u>Marta Evangelista</u> , Alexandru Gudima, Vladimir Riabov, Martin Pravda, Julia Kzhyshkowska, Nihal Engin Vrana <i>PROTIP MEDICAL, France</i>
10:15	95	<b>2D Cell Monolayer and 3D Cell Construct Cryopreservation by Slow Vitrification</b> <u>Kazuaki Matsumura</u> , Keiko Kawamoto, Suong-Hyu Hyon <i>Japan Advanced Institute of Science and Technology, Japan</i>
10:30	96	<b>Interaction of Sub-Compartmentalized Microreactors with Hepatocytes</b> <u>Yan Zhang</u> , Brigitte Städler <i>Aarhus University, Denmark</i>
10:45	97	<b>Macrophage-Laden 3D Fibrin Gels: Effect of Fibrinogen Concentration on Inflammation</b> Katharina Maniura, Arie Bruinink, <u>Vera Malheiro</u> <i>EMPA, Switzerland</i>

## Hall 1 Translational Research Symposium (2)

Organizers: Yves Bayon, Marc Bohner, David Eglin, Geoff Richards, Dimitrios Zeugolis

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11:30	TRS5	<b>Insights into Collaboration and Innovation for Early Stage Medical Device Development</b> <u>Jan Weber</u> <i>Sr Research Fellow, Corporate Research, Boston Scientific Corporation, United States</i>
12:00	TRS6	<b>From Biomaterials Supplier to Device Development Partner – Supporting Medical Device Companies in de-Risking Medical Products</b> <u>Jend Thies</u> <i>Director Science and Innovation, DSM Biomedical, Netherlands</i>
12:30	TRS7	<b>Next Generation of Fibers for Medical Devices: Biopolymers and Functionalized Coatings</b> <u>Herbert De Breuck</u> <i>Manager R&amp;D, Luxilon, Wijnegem, Belgium</i>

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## Session 23 Bone Tissue Engineering 2

Hall 2

Chairs: Pamela Habibovic, *Maastricht University, Netherlands*

William Wagner, *University of Pittsburgh McGowan, United States*

Christy Thomas, *University of Westminster, United Kingdom (YSF Chair)*

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11:30	K4	<b>Keynote</b> <b>Dual Release of a Macrophages Recruitment Agent and Growth Factor for Bone Regeneration</b> <u>Yang-hee Kim, Yasuhiko Tabata</u> <i>Institute for Frontier Medical Sciences, Kyoto University, Japan</i>
12:00	98	<b>Fabrication and Characterization of Clinoptilolite/PCL-PEG-PCL Composite Scaffolds for Bone Tissue Engineering</b> <u>Ahmet Engin Pazarçeviren</u> , Ayşen Tezcaner, Özge Erdemli <i>Middle East Technical University, Turkey</i>
12:15	99	<b>Osteoinductive Dental Ring for Vertical Bone Regeneration with Simultaneous Introduction of Dental Implants</b> <u>Anna Chróścicka</u> , Piotr Wychowański, Ewa Jankowska-Steifer, Marek Kujawa, Małgorzata Lewandowska-Szumieł <i>Medical University of Warsaw, Poland</i>
12:30	100	<b>Novel N-(2-Carboxybenzyl)Chitosan Bionanocomposites for Tissue Scaffolding Applications</b> Maria Nerantzaki, <u>Zoi Terzopoulou</u> , Maria Anastasopoulou, Michalis Karakassides, Iro Koliakou, Aldo Boccaccini, Dimitrios Bikiaris <i>Aristotle University of Thessaloniki, Greece</i>
12:45	101	<b>BMP-2 stimulation Affects Structure and Mechanical Properties of Newly Synthesized ECM In Vitro</b> <u>Erik Brauer</u> , Aaron Herrera, Petra Knaus, Georg Duda, Ansgar Petersen <i>Julius Wolff Institute, Germany</i>

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Tuesday, 1<sup>st</sup> Sept

**Session 24  
Hall 3A**

**Stem Cells 2**

Chairs: Josep A. Planell, *Universitat Oberta de Catalunya, Spain*  
Ewa Zuba-Surma, *Jagiellonian University, Poland*  
Maryam Shariatzadeh, *University of Sheffield, United Kingdom* (YSF Chair)

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11:30	102	<b>Aging Reduces Osteogenic and Increases Adipogenic Potential of Mesenchymal Stem Cells Grown on Titanium</b> Rodrigo Abuna, Camila Stringheta-Garcia, Rita Dornelles, Adalberto Rosa, <u>Marcio Beloti</u> <i>University of Sao Paulo, Brazil</i>
11:45	103	<b>Controlled Release of Amorphous Calcium Phosphate from Titania Nanostructures Induces Osteoblastic Differentiation in Human Mesenchymal Stem Cells</b> <u>Robert McLister</u> , Mura McCafferty, George Burke, Brian J. Meenan <i>Ulster University, United Kingdom</i>
12:00	104	<b>Chondrogenesis of Umbilical Cord Mesenchymal Stem Cells in a Porous Asymmetric Scaffold of Poly(Lactic Acid) Functionalized with Hyaluronan: Deposition of a Hyaline Cartilaginous Matrix</b> Elias Al Tawil, Alexandre Monnier, Quang Trong Nguyen, Jean-Pierre Vannier, Brigitte Deschrevel <i>University of Rouen, France</i>
12:15	105	<b>Characterization of In Vitro-Spheroids from Human Mesenchymal Stem Cells under Osteogenic and Adipogenic Differentiation</b> Geneviève Schmid, Heike Paape, Ellen Schmuhl, Stefanie Adam, Nicole Herzmann, Juliane Meyer, Achim Salamon, Susanne Meyer, <u>Kirsten Peters</u> <i>Rostock University Medical Center, Germany</i>
12:30	106	<b>Investigation of the Effect of Different Velocities and Surface Treatments on hMSCs Seeding Efficiency and Mechanical Characterization of 3D Insert PCL Scaffolds Undergoing Compression Loading</b> <u>Marzia Brunelli</u> , Cecile M. Perrault, Damien Lacroix <i>University of Sheffield, United Kingdom</i>
12:45	107	<b>Osteogenic Effects of Short, Steady Media Perfusion in hBMSC 3D Cultures Depend on Cell Culture and Cell Differentiation Stage and a Scaffold Type</b> <u>Joanna Filipowska</u> , Justyna Pawlik, Katarzyna Cholewa-Kowalska, Maria Laczka, Anna M. Osyczka <i>Jagiellonian University, Poland</i>

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Tuesday, 1<sup>st</sup> Sept

**Session 25**  
**Hall 3B**

**Surface Modification 4**

Chairs: Christine Dupont-Gillain, *Université Catholique de Louvain, Belgium*  
Dorota Bociąga, *Lodz University of Technology, Poland*,  
Luis Rojo, *King's College London, United Kingdom* (YSF Chair)

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11:30	K5	<b>Keynote</b> <b>Contributions of Adhesive Proteins to the Cell Response to Bioactive Polymers and Surfaces</b> Helena Felgueiras, Meg Evans, <u><a href="#">Véronique Migonney</a></u> <i>Université Paris 13, France</i>
12:00	108	<b>Prebiotic Chemistry Inspired Coatings for Biomedical Applications</b> <u><a href="#">Helmut Thissen</a></u> , Mario Salwiczek, Christopher D. Easton, Aylin Koegler, Richard A. Evans <i>CSIRO Manufacturing Flagship, Australia</i>
12:15	109	<b>Grafting of Bioactive Molecules on PET to Recruit Endothelial Progenitors Cells and Enhance Adhesion of Endothelial Cells</b> <u><a href="#">Caroline Royer</a></u> , Laurent Plawinski, Gaétan Laroche, Marie-Christine Durrieu <i>Hôpital Saint-François d'Assise, France</i>
12:30	110	<b>Functionalization of Biomedical Surfaces by Peptide Aptamers</b> <u><a href="#">Gabriela Melo Rodriguez</a></u> , James Bowen, Artemis Stamboulis <i>University of Birmingham, United Kingdom</i>
12:45	111	<b>Nanoporous Anodic Titanium Dioxide Layers as Scaffolds for Cell Growth</b> <u><a href="#">Magdalena Jarosz</a></u> , Anna Pawlik, Justyna Syguła-Cholewińska, Tomasz Sawoszczuk, Danuta Jarocha, Marcin Majka, Grzegorz D. Sulka, Marian Jaskuła <i>Jagiellonian University, Poland</i>

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Tuesday, 1<sup>st</sup> Sept

## Session 26 Hall 4A

### Cell Instructive Materials 3

Chairs: John Jansen, *Radboud University, Netherlands*

Timothy Douglas, *Ghent University, Belgium*

Jennifer Ashworth, *University of Cambridge, United Kingdom (YSF Chair)*

11:30	K6	<p><b>Keynote</b>  <b>Glycosaminoglycan Derivatives – Promising Candidates for the Design of Functional Biomaterials</b>  <u>Dieter Scharnweber</u>, Linda Hübner, Sandra Rother, Ute Hempel, Ulf Anderegg, Sergey A. Samsonov, M. Teresa Pisabarro, Lorenz Hofbauer, Matthias Schnabelrauch, Sandra Franz, Jan C. Simon, Vera Hintze  <i>TU Dresden, Germany</i></p>
12:00	112	<p><b>Glycosaminoglycan Mimicking Surfaces Trigger Distinct Response of Stem Cells via Fibronectin Adsorption</b>  <u>Ana Rodrigues Araujo</u>, D. Soares da Costa, S. Amorim, RL Reis, RA Pires, I. Pashkuleva  <i>3B's Research Group, Portugal</i></p>
12:15	113	<p><b>Collagen-GAGs Based Interpenetrating Polymer Networks (IPNs) as Tissue Engineered Heart Valve (TEHV)</b>  <u>Rabia Nazir</u>, Arne Bruyneel, Carolyn Carr, Jan Czernuszka  <i>Oxford University, United Kingdom</i></p>
12:30	114	<p><b>Biofunctional Microassemblies Based on Renewable Resources - Microfluidic Generation and Release Applications</b>  <u>Mélanie Marquis</u>, Agata Zykwinska, Corinne Sinquin, Jacqueline Ratiskol, Stéphane Cuenot, Bernard Cathala, Denis Renard, Sylvia Collicec-Jouault  <i>INRA, France</i></p>
12:45	115	<p><b>Glycosaminoglycans as Biomaterials, Drugs and Pathogens</b>  Kamil Kamiński, Bartłomiej Kałaska, Anna Mikulska, Joanna Filipowska, Anna Osyczka, Shin-Ichi Yusa, Małgorzata Kajta, Andrzej Mogielnicki, Maria Nowakowska, <u>Krzysztof Szczubiałka</u>  <i>Jagiellonian University, Poland</i></p>

## Hall 4B

### Surface Charge for Biomaterial Characterization

Sponsored by: Anton Paar

11:30	SCh1	<p><b>Zeta Potential for Biomaterial Surface Characterization</b>  <u>Christine Körner</u>, Thomas Luxbacher  <i>Anton Paar GmbH, Graz, Austria</i></p>
12:15	SCh2	<p><b>TiO<sub>2</sub>-Coated Ti-Alloys for Body Implants &amp; Surface Charge: Expectations on the Bio-Response</b>  <u>Martina Lorenzetti</u>, Mukta Kulkarni, Aleš Iglič, Thomas Luxbacher, Spomenka Kobe, Saša Novak  <i>Jožef Stefan Institute, Ljubljana, Slovenia</i></p>

## Hall 1 Plenary Lecture 5

- 15:30 L5 **Vascularization in Tissue Engineering: Alternative Foreign Body Responses**  
Michael V. Sefton  
*Institute of Biomaterials and Biomedical Engineering, University of Toronto, Canada*
- Chairs:** Abhay Pandit, *National University of Ireland, Galway, Ireland*  
Małgorzata Lewandowska-Szumieł, *Medical University of Warsaw, Poland*

## Hall 1 Translational Research Symposium (3)

Organizers: Yves Bayon, Marc Bohner, David Eglin, Geoff Richards, Dimitrios Zeugolis

- 16:45 116 **FTIR Microscopy Contribution for Comprehension of Poly-L-Lactic Acid (PLA) Degradation Mechanisms**  
Yves Bayon, Antoine Alves, Carol Grossiord, Céline Brunon  
*NAMSA, Chasse/Rhône, France*
- 17:00 117 **Possible Approach to Improve Systemic Gene Delivery to Tumour Using Polyplex Nanoparticles**  
Mikhail Durymanov, Alexei Yarutkin, Andrey Rosenkranz, Alexander Sobolev  
*Institute of Gene Biology of the RAS, Russia*
- 17:15 118 **Endothelialization of Polyurethanes: Immobilization of REDV Peptide**  
Beata Butruk-Raszeja, Magdalena Dresler, Aleksandra Kuźmińska, Tomasz Ciach  
*Warsaw University of Technology, Poland*
- 17:30 119 **Helicobacter pylori-Binding Small Chitosan Microparticles that Penetrate Gastric Mucosa**  
Patrícia C. Henriques, Paula Sampaio, Maria Lázaro, André Maia, António Gouveia, José Manuel Lopes, Ana Magalhães, Celso A. Reis, M. Cristina L. Martins, Paulo Costa,  
Inês C. Gonçalves  
*Universidade do Porto, Portugal*
- 17:45 120 **Leaving Cells Out in the Cold: Hydrogel Encapsulation for the Improved Hypothermic Preservation of Stem Cells**  
Stephen Swioklo, Che Connon  
*Newcastle University, United Kingdom*
- 18:00 121 **Antibacterial Coatings on Titanium Surfaces: a Comparison Study Between In Vitro Single-Species and Multispecies Biofilm**  
Maria Godoy-Gallardo, Zhejun Wang, Ya Shen, José M. Manero, F. Javier Gil, Carlos Mas-Morun,  
Daniel Rodriguez, Markus Haapasalo  
*Technical University of Catalonia, Spain*
- 18:15 122 **The Proangiogenic Potential of a Novel Poly(lactic) Based Composite Membrane for Guided Bone Regeneration**  
Hugo Oliveira, Nadège Sachot, Sylvain Catros, Sylvie Rey, Joan Martí, Oscar Castano,  
Joëlle Amedee, Elisabeth Engel  
*Institute for Bioengineering of Catalonia (IBEC), Spain*

Tuesday, 1<sup>st</sup> Sept

**Session 27  
Hall 2**

**Bone Tissue Engineering 3**

Chairs: Joelle Amedee, *INSERM, U1026, France*

Małgorzata Lewandowska-Szumieł, *Medical University of Warsaw, Poland*

Claudia Loebel, *AO Research Institute Davos, Switzerland (YSF Chair)*

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16:45	K7	<b>Keynote</b> <b>Hydrogels and Scaffolds of Natural Origin as Support for Stem Cells in the Regeneration of Different Tissues</b> <u>Rui Reis</u> <i>3B's Research Group - University of Minho, Portugal</i>
17:15	123	<b>Organic and Inorganic Bioactive Signals to Prepare Biomimetic Chitosan Based Scaffolds for Bone Tissue Regeneration</b> <u>Maria Grazia Raucci</u> , Daniela Giugliano, Antonella Giuri, Vincenzo De Benedictis, Christian Demitri, Alessandro Sannino, Luigi Ambrosio <i>National Research Council of Italy, Italy</i>
17:30	124	<b>Polyvinyl Alcohol/Alginate Dual Network Hydrogels for Tissue Engineering</b> <u>Shathani Nkhwa</u> , Sanjukta Deb <i>King's College London Dental Institute, United Kingdom</i>
17:45	125	<b>Analysis of Integrin-Binding Dependent Cell Attachment on Collagen-Based Scaffolds</b> Carlos Schuster, Richard Farndale, Samir Hamaia, Serena Best, Ruth Cameron, <u>Natalia Davidenko</u> <i>Cambridge University, United Kingdom</i>
18:00	126	<b>A Novel Biological Polyester Based Wet Spun Scaffold for Bone Tissue Engineering</b> <u>Ayse Selcen Alagoz</u> , Jose Carlos Rodriguez-Cabello, Nesrin Hasirci, Vasif Hasirci <i>BIOMATEN METU Center of Excellence in Biomaterials and Tissue Engineering, Turkey</i>
18:15	127	<b>Resorption of Calcium Phosphate Bone Substitutes: an In Vitro Study</b> <u>Marta Gallo</u> , Solène Tadier, Sylvain Meille, Marc Bohner, Aldo Boccaccini, Rainer Detsch, Jérôme Chevalier <i>INSA, France</i>

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Tuesday, 1<sup>st</sup> Sept



**Session 28**  
**Hall 3A**

**Angio- and Vasculogenesis**

Chairs: Abhay Pandit, *National University of Ireland, Galway, Ireland*  
Michael Sefton, *University of Toronto, Canada*  
Sonia Zia, *Hannover Medical School, Germany (YSF Chair)*

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16:45	128	<b>Induction of Endothelial Cell Sprouting by Poly (<math>\epsilon</math>-Lysine) Dendron Tethered with an Angiopoietin-1-mimicking Peptide</b> <u>Maria Elena Verdenelli</u> , Steven Meikle, Gary Phillips, Matteo Santin <i>University of Brighton, United Kingdom</i>
17:00	129	<b>Sustained Release of Adipose-Derived Stem Cells by Thermosensitive Chitosan-Gelatin Hydrogel for Therapeutic Angiogenesis</b> <u>Nai-Chen Cheng</u> , Tai-Horng Young <i>National Taiwan University Hospital, Taiwan</i>
17:15	130	<b>Cobalt Doped Proangiogenic Hydroxyapatite for Bone Tissue Engineering Application</b> <u>Senthilguru Kulanthaivel</u> , Krishna Pramanik, Indranil Banerjee <i>National Institute of Technology, India</i>
17:30	131	<b>Development of a Synthetic Pseudovascular Network to Investigate Neovascularisation for Tissue Engineering Applications</b> <u>Lindsey Dew</u> , Ilida Ortega, Adam Kelly, Frederik Claeysens, Sheila MacNeil <i>University of Sheffield, United Kingdom</i>
17:45	132	<b>Angiogenic Response on Chitosan-Graft-Poly (<math>\epsilon</math>-Caprolactone) Copolymer in vitro, enhanced by Wharton's Jelly-derived Mesenchymal Stromal Cells</b> Evi Mygdali, Maria Kaliva, Maria Vamvakaki, Charalampos Pontikoglou, <u>Maria Chatzinikolaidou</u> <i>University of Crete, Greece</i>
18:00	133	<b>Vasculogenesis and Accelerated Healing through the Emergent Design of an Hierarchically Structured Scaffold</b> <u>Julian F Dye</u> , Giuseppe Scionti, Elizabeth A Wahl, Tomas Egana, Maroun Khoury <i>Dept LHCS, The Open University, United Kingdom</i>
18:15	134	<b>Repair of "Burr Holes" Using Chitosan-Siloxane Porous Hybrids</b> <u>Yuki Shirosaki</u> , Motomasa Furuse, Takuji Asano, Yoshihiko Kinoshita, Toshiki Miyazaki, Satoshi Hayakawa, Akiyoshi Osaka, Toshihiko Kuroiwa <i>Kyushu Institute of Technology, Japan</i>

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Tuesday, 1<sup>st</sup> Sept

**Session 29**  
**Hall 3B**

**Antimicrobial Surfaces and Materials 2**

Chairs: Matthias Epple, *University of Duisburg-Essen, Germany*  
Barbara Szaraniec, *AGH University of Science and Technology, Poland*  
Riccardo Levato, *Institute for Bioengineering of Catalonia (IBEC), Spain (YSF Chair)*

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16:45	135	<b>A Nanocomposite Wound Dressing with Potential to Sustain Active Chlorhexidine on a Wound Bed</b> <i>Peter Duckworth</i> , Sarah Maddocks, Gareth Robinson, Sameer Rahatekar, Michele Barbour <i>University of Bristol, United Kingdom</i>
17:00	136	<b>Enrichment of Enzymatically Mineralized Gellan Gum Hydrogels with Polyphenol-Rich Ecklonia Cava Extract Seanol® to Endow Antibacterial Properties</b> <i>Timothy Douglas</i> , Gilles Brackman, Katarzyna Reczynska, Agnieszka Dokupil, Krzysztof Pietryga, Peter Dubrueel, Tom Coenye, Elzbieta Pamula <i>Ghent University, Belgium</i>
17:15	137	<b>Development of an Antibacterial Hybrid Sponge (Chitosan/Hydroxyapatite) for Bone Regeneration</b> Claudia Flores, Jean Christophe Hornez, Feng Chai, Gwenael Raoul, Nicolas Tabary, Frédéric Cazaux, Joel Ferri, Hartmunt F. Hildebrand, Bernard Martel, Nicolas Blanchemain <i>University of Lille, France</i>
17:30	138	<b>Antimicrobial Properties of a Novel Hydrogel Bandage Lens Material</b> <i>Andrew Gallagher</i> , Mal Horsburgh, Jamal Alorabi, Don Wellings, Rachel Williams <i>University of Liverpool, United Kingdom</i>
17:45	139	<b>Ephemeral Biogels to Control Anti-Biofilm Agent Delivery</b> <i>Véronique Larreta Garde</i> , Elodie Lefebvre, Damien Seyer <i>University of Cergy Pontoise, France</i>
18:00	140	<b>Broad-Spectrum Antimicrobial Polycarbonate Hydrogels for Wound Dressing Applications</b> <i>Haritz Sardon</i> , Ana Pascual, Jeremy Tan, James Hedrick, Yi YanYAng <i>University of the Basque Country, Spain</i>
18:15	141	<b>Injectable Gellan Gum-Based Nanoparticle-Loaded System for the Local Delivery of Vancomycin in Osteomyelitis Treatment</b> <i>Urszula Posadowska</i> , Monika Brzychczy-Włoch, Elzbieta Pamula <i>AGH University of Science and Technology, Poland</i>

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Tuesday, 1<sup>st</sup> Sept

**Session 30**  
**Hall 4A**

**Bioimaging and Biosensing**

Chairs: Didier Letourneur, *Inserm U1148 Cardiovascular Bioengineering, France*

Tomasz Ciach, *Warsaw University of Technology, Poland*

Magdalena Ziabka, *AGH University of Science and Technology, Poland (YSF Chair)*

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16:45	K8	<b>Keynote</b> <b>Bionano Characterization - Beyond Imaging with Scanning Probe Microscopy</b> <u>Wojciech Chrzanowski</u> <i>The University of Sydney, Australia</i>
17:15	142	<b>Long-Term and Bioinert Labeling of Mesenchymal Stem Cells with Polymeric-Gd Conjugates and MRI Monitoring of the Cell Behaviour in Ischemic Rats</b> <u>Tetsuji Yamaoka</u> , Yoichi Tachibana <i>National Cerebral and Cardiovascular Center Research Institute, Japan</i>
17:30	143	<b>Nile Blue-Based Nano-Sized pH Sensors for Simultaneous Far-Red and Near-Infrared Live</b> <u>Jeppe Madsen</u> , Irene Canton, Nicholas J. Warren, Efrosyni Themistou, Adam Blanz, Burcin Ustbas, Xiaohe Tian, Russell Pearson, Giuseppe Battaglia, Andrew L. Lewis, Steven P. Armes <i>University of Sheffield, United Kingdom</i>
17:45	144	<b>Phenotypic and Functional Sensing of Cell Microvesicles Using an Immobilized Chemosensor</b> Catherine Belle, Sylvain Nlate, Marie-Christine Durrieu, Eduardo Angles-Cano, <u>Laurent Plawinski</u> <i>UMR 5248, CNRS, Bordeaux University, France</i>
18:00	145	<b>Mass Transport Study with Fluorescent Dextran Molecules in Gellan Gum Hydrogel</b> Ana M. Soto, <u>Janne Koivisto</u> , Jenny E. Parraga, Jari Hyttinen, Minna Kellomäki, Edite Figueiras <i>University of Tampere, Finland</i>
18:15	146	<b>The Effect of Biomolecular Interaction and Chondrocyte Adhesion to Surface Grafted Hyaluronan Layers</b> <u>Erik Nilebäck</u> , Noomi Altgärde, Angelika Kunze, Lars Enochson, Laura de Battice, Iva Pashkuleva, Jana Becher, Stephanie Möller, Matthias Schnabelrauch, Rui L. Reis, Anders Lindahl, Sofia Svedhem <i>Biolin Scientific, Sweden</i>

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Tuesday, 1<sup>st</sup> Sept

**Session 31**  
**Hall 4B**

**Biointerfaces 2**

Chairs: Yannis Missirlis, *University of Patras, Greece*  
Alina Sionkowska, *Nicolaus Copernicus University, Poland*  
Judit Buxadera Palomero, *Technical University of Catalonia, Spain (YSF Chair)*

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16:45	147	<b>Surface Topography: Is It Clinically Relevant?</b> Andrew English, Ayesha Azeem, Manus Biggs, Abhay Pandit, <u>Dimitrios Zeugolis</u> <i>National University of Ireland, Galway, Ireland</i>
17:00	148	<b>Cell-Material Interaction Enhanced by Hybrid Covalent Coated Nanofibers</b> Joan Marti, Nadege Sachot, <u>Oscar Castano</u> , Miguel Mateos-Timoneda, Aldrik Velders, Malgorzata Lewandoska, Josep A. Planell, Elisabeth Engel <i>Istitute for Bioengineering of Catalonia (IBEC), Spain</i>
17:15	149	<b>Fibronectin Based Thin Films: Description of a Novel Growth Mechanism and Influence on Cell Behavior</b> <u>Adeline Gand</u> , Coline Chat, Alysée Barraux, Guy Ladam, Paul R Van Tassel, Emmanuel Pauthe <i>University of Cergy-Pontoise, France</i>
17:30	150	<b>Primary Macrophage Phenotype Control by IL-4 Releasing, Self-Crosslinking PLL/HA-Aldehyde Derivative Multilayer Coatings</b> <u>Helena Knopf-Marques</u> , Sonali Singh, Lucie Wolfowa, Vladimir Velebny, Pierre Schaaf, Amir Ghaemmaghami, Nihal Engin Vrana, Philippe Lavalley <i>INSERM, France</i>
17:45	151	<b>Biointerfaces through Continuous Electrojet-Writing</b> <u>Zhaoying Li</u> , Yan Yan Shery Huang, Xia Li <i>University of Cambridge, United Kingdom</i>
18:00	152	<b>Bioactive Helical Nanomaterials and their Influence on Stem Cell Differentiation</b> <u>Gregor Kemper</u> , Laurent Plawinski, Emilie Pouget, Shawn Wettig, Reiko Oda, Marie-Christine Durrieu <i>CBMN UMR 5248, CNRS, Bordeaux University, France</i>
18:15	153	<b>Case Study of a Retrieved Trans-Femoral Bone Anchored Amputation Prosthesis</b> <u>Anders Palmquist</u> , Sara Windahl, Birgitta Norlindh, Rickard Brånemark, Peter Thomsen <i>University of Gothenburg, Sweden</i>

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Tuesday, 1<sup>st</sup> Sept

<b>Hall 1</b>		<b>Plenary Lecture 6</b>
8:30	L6	<b>Targeted Chemo- and Molecular-Therapy by Self-Assembled Supramolecular Nanosystems</b> Kazunori Kataoka <i>Department of Materials Engineering, University of Tokyo, Japan</i>
Chairs: Maria Siemionow, <i>University of Illinois at Chicago, United States</i> Michael Sefton, <i>University of Toronto, Canada</i>		

<b>Session 32</b>		<b>Cancer Therapy</b>
<b>Hall 1</b>		Chairs: Kazunori Kataoka, <i>University of Tokyo, Japan</i> Hasan Uludag, <i>University of Alberta, Canada</i> Joana Silva-Correia, <i>3B's Research Group, University of Minho, Portugal (YSF Chair)</i>
9:30	154	<b>Multitargeting Theranostic Nanoparticles for the Treatment of HER2-Positive Breast Cancer</b> Raquel Palao-Suay, <u>Maria Rosa Aguilar</u> , Francisco Parra-Ruiz, Susan N. Thomas, Nathan Rohner, Samarendra Maji, Richard Hoogenboom, Julio San Roman <i>ICTP-CSIC, Spain</i>
9:45	155	<b>ROS-Generating Titanium Oxide-Based Nanoparticles for Non-Invasive Cancer Surgery</b> <u>Dong Gil You</u> , V.G. Deepagan, Wooram Um, Sangmin Jeon, Ich Chan Kwon, Kwangmeyung Kim, Jae Hyung Park <i>Sungkyunkwan University, Korea</i>
10:00	156	<b>Investigation of Dendrimer-Based Nanoparticles Cellular Uptake and Cell Tracking in a Semi-Automated Microfluidic Platform</b> <u>Mariana Carvalho</u> , Fátima Maia, Rui Reis, Miguel Oliveira <i>3B's Research Group, Portugal</i>
10:15	157	<b>Effects of SPION Loaded Hyaluronan Polymeric Micelles on Gene Expression in Normal and Cancer Cells</b> <u>Kristina Nešporová</u> , Vojtěch Pavlík, Daniela Šmejkalová, Vladimír Velebný <i>Contipro Biotech, Czech Republic</i>
10:30	158	<b>Molecular Weight of Surface Immobilized Hyaluronic Acid Influences CD44-Mediated Adhesion of Gastric Cancer Cells</b> <u>Sara Amorim</u> , Diana Soares da Costa, Daniela Freitas, Ana Magalhães, Celso Reis, Rui Reis, Iva Pashkuleva, Ricardo Pires <i>3B's Research Group - University of Minho, Portugal</i>
10:45	159	<b>Novel Halogenated Phthalocyanines as Photosensitizers for Photodynamic Therapy for Cancer</b> <u>Łukasz Łapok</u> , Arkadiusz Gut, Małgorzata Cyza, Mariusz Kępczyński, Dorota Jamróz, Grzegorz Szewczyk, Tadeusz Sarna, Alexandr Gorski, Jędrzej Solariski, Tadeusz Waluk, Maria Nowakowska <i>Jagiellonian University, Poland</i>

## Session 33 Hall 2

### Soft Tissue Engineering

Chairs: Julia Babensee, *Georgia Institute of Technology, United States*

Lorenzo Moroni, *Maastricht University, Netherlands*

Andrew Gallagher, *University of Liverpool, United Kingdom (YSF Chair)*

9:30	160	<b>The Role of Electrical Stimulation in Tendon Maintenance and Repair: Electrospun PVDF-TrFE/Boron Nitride Nanotubes as Bioactive Scaffold for Promoting Tendon Regeneration</b> <u>Marc Fernandez</u> , Gemma Orpella, Ghazal Tadayyon, Matteo Palma, Abhay Pandit, Dimitrios Zeugolis, Manus Biggs <i>National University of Ireland, Galway, Ireland</i>
9:45	161	<b>Patterned Thermoresponsive pNIPAM-pHEMA Hydrogels for Corneal Repair</b> <u>Cemile Bektas</u> , Vasif Hasirci <i>Middle East Technical University, Turkey</i>
10:00	162	<b>Macromolecular Crowding in Corneal Fibroblasts Culture Accelerates the Production of Extracellular Matrix-rich Supramolecular Assemblies</b> Pramod Kumar, Abhigyan Satyam, <u>Kyriakos Spanoudes</u> , Abhay Pandit, Dimitrios Zeugolis <i>National University of Ireland, Galway, Ireland</i>
10:15	163	<b>Elaboration and Evaluation of Alginate Foam Scaffolds for Soft Tissue Engineering</b> <u>Raya Bushkalova</u> , Caroline Ceccaldi, Christophe Tenailleau, Benjamin Duployer, Philippe Bourin, Daniel Cussac, Angelo Parini, Brigitte Sallerin, Sophie Girod-Fullana <i>INSERM UMR 1048, France</i>
10:30	164	<b>Polyhydroxyalkanoates, a Family of Natural Polymers and Their Application in Cardiac Tissue Engineering</b> <u>Ipsita Roy</u> , Andrea Bagdadi, Prachi Dubey, Ranjana Rai, Jonathan Knowles, Aldo R. Boccaccini, Mohan Edirisinghe, Sian Harding <i>University of Westminster, United Kingdom</i>
10:45	165	<b>Fabrication of a Biosynthetic Hydrogel Scaffold for Skin Repair</b> Mario Flores-Reyes, Jaime Flores-Estrada, Ma. Victoria Dominguez-García, <u>Miriam V. Flores-Merino</u> <i>Research Center in Medical Sciences, Uaem, Mexico</i>

## Session 34 Hall 3A

### Cardiovascular Applications 1

Chairs: Ana Paula Pego, *INEB - Instituto de Engenharia Biomédica, Portugal*

Mirosława El Fray, *West Pomeranian University of Technology, Poland*

Lindsey Dew, *University of Sheffield, United Kingdom (YSF Chair)*

9:30	K9	<b>Keynote</b> <b>Endothelial Cells on Biofunctionalized Polymeric Materials for Vascular Tissue Engineering</b> <u>Lucie Bacakova</u> , Jaroslav Chlupac, Elena Filova, Jana Musilkova, Katarina Novotna, Tomas Riedel, Vladimir Proks, Ilya Kotelnikov, Ognen Pop-Georgievski, Eduard Brynda, Frantisek Rypacek, Laurence Bordenave <i>Academy of Sciences of the Czech Republic, Czech Republic</i>
10:00	166	<b>Evaluation of a Pro-Healing Polydopamine-Coated Stent on In-Stent Restenosis Using a Rat Model</b> <u>Adrien Hertault</u> , Blandine Maurel, Feng Chai, Mickael Maton, Joël Lyskawa, Jonathan Sobocinski, Stephan Haulon, Nicolas Blanchemain <i>INSERM U1008, Research Group on Biomaterials, France</i>
10:15	167	<b>Anti-Thrombogenic Effects of Bioactive CoCr Surfaces for Cardiovascular Applications</b> Maria Isabel Castellanos, Jordi Guillem-Martí, Carlos Mas-Moruno, Maribel Díaz-Ricart, Ginés Escolar, Francisco Javier Gil, José María Manero, <u>Marta Pegueroles</u> <i>Technical University of Catalonia (UPC), Spain</i>
10:30	168	<b>Improving the Biocompatibility of Intravascular Devices</b> <u>Guillaume Le Saux</u> , Laurent Plawinski, Sylvain Nlate, Marie-Christine Durrieu <i>CBMN, France</i>
10:45	169	<b>Nanomaterials for Cardiovascular Applications: Quo Vadimus?</b> <u>Iwona Cicha</u> , Christoph D. Garlich, Christoph Alexiou <i>University Hospital Erlangen, Germany</i>

**Session 35**  
**Hall 3B**

**Antimicrobial Surfaces and Materials 3**

Chairs: Nicolas Blanchemain, *Université de Lille, France*

Fabrizio Barberis, *Università di Genova, Italy*

Zuzanna Trzcińska, *University of Birmingham, United Kingdom (YSF Chair)*

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9:30	170	<b>High Throughput Methods for the Discovery of Materials that Resist Bacterial Adhesion</b> <u>Andrew Hook</u> <i>University of Nottingham, United Kingdom</i>
9:45	171	<b>Physicochemical Properties and Cell-Biological Action of Alloyed Silver-Gold Nanoparticles</b> <u>Oleg Prymak</u> , Simon Ristig, Svitlana Chernousova, Wolfgang Meyer-Zaika, Matthias Epple <i>University of Duisburg-Essen, Germany</i>
10:00	172	<b>Enzymatic Disassembly of Biofilm Extracellular Matrix by Smart Nanoparticles to Eradicate Bacterial Infections</b> <u>Riccardo Levato</u> , Aida Baelo, Esther Julian, Joan Gavaldà, Elisabeth Engel, Eduard Torrents, Miguel Angel Mateos-Timoneda, Anna Crespo <i>Institute for Bioengineering of Catalonia, Spain</i>
10:15	173	<b>Anti-Helicobacter Pylori Activity of Nanoparticles Loaded with a Polyunsaturated Fatty Acid</b> <u>Catarina L. Seabra</u> , Cláudia Nunes, Marta Correia, José C. Machado, Celso A. Reis, Inês C. Gonçalves, Salette Reis, M. Cristina L. Martins <i>Universidade do Porto, Portugal</i>
10:30	174	<b>Antifouling Coatings as a Platform for Antimicrobial Peptide Immobilization</b> <u>Judit Buxadera-Palomero</u> , Patricia Carrasco, Cristina Canal, Carles Mas-Moruno, F. Xavier Gil, Daniel Rodríguez <i>Technical University of Catalonia, Spain</i>
10:45	175	<b>Modified PVC Urinary Catheters to Prevent Bacterial Adhesion</b> <u>Luisa Islas</u> , Guillermina Burillo, Carmen Alvarez-Lorenzo, Angel Concheiro <i>Universidad Nacional Autónoma de México, México</i>

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**Session 36**  
**Hall 4A**

**Advanced Manufacturing 2**

Chairs: Roberto De Santis, *National Research Council of Italy, Italy*  
Karol Gryń, *AGH University of Science and Technology, Poland*  
Robin Rajan, *Japan Advanced Institute of Science and Technology, Japan (YSF Chair)*

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9:30	K10	<b>Keynote</b> <b>3D Printing of Crosslinkable Gelatins: Overcoming the Mechanical Boundaries</b> Jasper Van Hoorick, Heidi Declercq, Maria Cornelissen, Hugo Thienpont, Aleksandr Ovsianikov, Peter Dubruel, <a href="#">Sandra Van Vlierberghe</a> <i>Ghent University, Belgium</i>
10:00	176	<b>3D Bioprinting of Functional Fibrin-Based Skin Equivalents</b> <a href="#">Nieves Cubo</a> , Marta García, Diego Velasco, Juan Cañizo, Jose Luis Jorcano <i>Universidad Carlos III, Spain</i>
10:15	177	<b>A New Laser-Based Approach for Native Silk Structuring</b> <a href="#">Anastasia Brif</a> , Chris Holland, Frederik Claeysens <i>University of Sheffield, United Kingdom</i>
10:30	178	<b>Development of Porous PLLA Micro-Cylinders for Tissue Engineering Applications</b> <a href="#">Antonio Castro</a> , John Jansen, Jeroen van den Beucken, Fang Yang <i>RadboudUMC, Netherlands</i>
10:45	179	<b>Cell Proliferation Controlled by Selective Laser Melting (SLM) Process Parameters</b> <a href="#">Bartłomiej Wysocki</a> , Joanna Idaszek, Wojciech Świączkowski, Krzysztof Kurzydłowski <i>Warsaw University of Technology, Poland</i>

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**Hall 4B**

**Science for Industry (1)**  
**Bioresorbable Materials for Medical Applications**

Organizers: Xiang Zhang, Ipsita Roy, Kadem Al-Lamee, Stuart Maclachlan, Maria Joao Barros, Nial Bullett, Mark Taylor

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9:30		<b>Welcome and Introduction</b> Xiang Zhang, Ipsita Roy
9:50		<b>Commercial Needs for Bioresorbable Materials, Transfer from Laboratory and Barriers and Gaps in the Technology</b> <a href="#">Kadem Al-Lamee</a> <i>Arterius Limited, United Kingdom</i>
10:15		<b>Production and Evaluation Platforms for Preclinical Assessment of Novel Biomaterials for Non-Healing Bone Lesions</b> <a href="#">Oskar Hoffmann</a> <i>University of Vienna, Austria</i>
10:40		<b>Bioresorbable Systems: Polymers and Metals</b> <a href="#">Ipsita Roy</a> <i>University of Westminster, United Kingdom</i>

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**Session 37**  
**Hall 1**

**Drug Delivery 3**

Chairs: Wojciech Chrzanowski, *The University of Sydney, Australia*  
Izabela-Cristina Stancu, *University Politehnica Bucharest, Romania*  
Martin Lynge, *Aarhus University, Denmark (YSF Chair)*

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11:30	K11	<b>Keynote</b> <b>Polypeptide Nanoparticles for Ocular Drug Delivery</b> <u>Neil Cameron</u> <i>Monash University, Australia</i>
12:00	180	<b>Micro and Nano Hydrogel Carrier Systems for Controlled Drug Delivery of Therapeutic Proteins</b> <u>Henning Menzel</u> , Andreas Bertz, Nils Poth, Wibke Dempwolf, Jan-Erik Ehlers, Karl-Heinz Gericke, Peter P. Müller, Gerhard Gross, Stefanie Wöhl-Bruhn, Heike Bunjes <i>University of Technology, Germany</i>
12:15	181	<b>Peptide Binding Dendrimer Decorated Injectable Hyaluronan Hydrogels Modulate the Controlled Release of BMP-2 and TGF-<math>\beta</math>1</b> Ryan Seelbach, Peter Fransen, Miriam Royo, Fernando Albericio, Mauro Alini, Alvaro Mata, <u>David Eglin</u> <i>AO Research Institute Davos, Switzerland</i>
12:30	182	<b>Co-Deliver of Glucagon-Like Peptide-1 and Dipeptidyl Peptidase 4 Inhibitor for Treatment of Type 2 Diabetes</b> <u>Francisca Araújo</u> , Neha Shrestha, Mohammad-Ali Shahbazi, Dongfei Liu, Bárbara Herranz-Blanco, Ermei Mäkilä, Jarno Salonen, Jouni Hirvonen, Pedro L. Granja, Bruno Sarmento, Hélder A. Santos <i>INEB, Portugal</i>
12:45	183	<b>Controlled Release of Platinum-Bisphosphonate Complexes from Injectable Calcium Phosphate Cements for Treatment of Bone Tumors</b> Kemal Sariibrahimoglu, <u>Kambiz Farbod</u> , Astghik Hayrapetyan, Jan N. W. Hakvoort, Michele Iafisco, Nicola Margiotta, Joop G. C. Wolke, Jeroen J. J. P. van den Beucken, John A. Jansen, Sander C. G. Leeuwenburgh <i>Radboud University Medical Center, Netherlands</i>

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**Session 38**  
**Hall 2**

**Composite Scaffolds**

Chairs: Luigi Ambrosio, *National Research Council, Italy*  
Ki Dong Park, *Ajou University, Korea*  
Sungho Lee, *Nagoya Institute of Technology, Japan* (YSF Chair)

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11:30	184	<b>Structurally-Graded Collagen Biomaterials for Osteotendinous Repair</b> Laura Mozdzen, William Grier, Ashley Moy, Steven Caliarì, <a href="#">Brendan Harley</a> <i>University of Illinois, United States</i>
11:45	185	<b>Biomineralized Cellulose-PEGDA Scaffolds for Bone Tissue Regeneration</b> <a href="#">Christian Demitri</a> , Maria Grazia Raucci, Antonella Giuri, Vincenzo Maria De Benedictis, Daniela Giugliano, Alessandro Sannino, Luigi Ambrosio <i>University of Salento, Italy</i>
12:00	186	<b>Preparation and Characterization of Silicone Elastomer Composites for Biomedical Prosthetic Applications</b> <a href="#">Petroula Tarantili</a> <i>National Technical University of Athens, Greece</i>
12:15	187	<b>High-Resolution Synchrotron X-Ray Analysis of Bioglass-Enriched Hydrogels</b> <a href="#">Svetlana Gorodzha</a> , Timothy Douglas, Sangram Samal, Katarzyna Cholewa-Kowalska, Kevin Braeckmans, Andre Skirtach, Venera Weinhardt, Tilo Baumbach, Maria Surmeneva, Roman Surmenev <i>National Research Tomsk Polytechnic University, Russian Federation</i>
12:30	188	<b>Computational and Experimental Study of the Degradation Behaviour of CaCO<sub>3</sub>-PLGA Composites</b> <a href="#">Ismael Moreno Gomez</a> , Xiang Zhang, Serena Best, Ruth Cameron <i>University of Cambridge, United Kingdom</i>
12:45	189	<b>Development of Nanostructured Composites Based on ε-Polylysine and Apatite</b> <a href="#">Kristine Salma-Ancane</a> , Liga Stipniece, Inga Narkevica <i>Rudolfs Cimdins Riga Biomaterials Innovation and Development Centre, Latvia</i>

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**Session 39**  
**Hall 3A**

**Cardiovascular Applications 2**

Chairs: Elisabeth Engel, *Institut for Bioengineering of Catalonia, Spain*

Paul Santerre, *University of Toronto, Canada*

Agnieszka Piegat, *West Pomeranian University of Technology, Poland (YSF Chair)*

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11:30	190	<b>Chitosan Based Hydrogels for Vascular Applications: In Vitro and In Vivo Hemocompatibility Evaluation</b> <i>Audrey Ausseil</i> , Xavier Berard, Sandro Cornet, Vincenzo Brizzi, Marlène Durand, Alexandra Montembault, Laurent David, Rachida Aid, Didier Letourneur, Laurence Bordenave <i>INSERM U1026, France</i>
11:45	191	<b>Enriched Decellularized Matrices for Tissue Engineering: Effects of Des-Acyl Ghrelin on Vascular Cells</b> <i>Francesca Boccafoschi</i> , Margherita Botta, Luca Fusaro, Martina Ramella, Francesco Copes, Mario Cannas <i>University of Piemonte Orientale, Italy</i>
12:00	192	<b>Biomimetic Strategy to Improve Haemo- and Biocompatibility of PET</b> E. Diana Giol, Ronald Unger, Sandra van Vlierberghe, C. James Kirkpatrick, Peter Dubruel <i>Ghent University, Belgium</i>
12:15	193	<b>Synthesis of Porous Polyhydroxyalkanoate (PHA) Fibres by Pressurized Gyration Process and their Evaluation as Tissue Engineering Scaffolds</b> <i>Pooja Basnett</i> , Suntharavathanan Mahalingam, Barbara Lukasiewicz, Sian Harding, Mohan Edirisinghe, Ipsita Roy <i>University of Westminster, United Kingdom</i>
12:30	194	<b>Enhanced Interfacial Strength of Surgical Sealants Composed of Hydrophobically Modified, Cod-Derived Gelatins with Different Hydrocarbon Chain Length</b> <i>Ryo Mizuta</i> , Temmei Ito, Keiko Yoshizawa, Toshimasa Akiyama, Katsuhiro Kamiya, Tetsushi Taguchi <i>National Institute for Materials Science, Japan</i>
12:45	195	<b>Athrombogenic Diffusive Layers as the Biomaterial for Blood Contact Applications in the Dynamic High Shear Stresses Conditions</b> <i>Małgorzata Gonsior</i> , Tadeusz Wierzchoń, Roman Kustos, Maciej Darłak, Magdalena Kościelniak-Ziemniak <i>Foundation for Cardiac Surgery Development, Poland</i>

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**Session 40**  
**Hall 3B**

**Neural Regeneration 2**

Chairs: Michael Doser, *Institute for Textile Research and Process Engineering, Germany*  
Leonora Buzanska, *Mossakowski Medical Research Centre PAS, Poland*  
Sahana Ganesh, *National University of Ireland, Galway, Ireland (YSF Chair)*

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11:30	K12	<b>Keynote</b> <b>Tissue-Engineered Electrodes for Neural and Cardiovascular Applications</b> <u>Laura Poole-Warren</u> , Josef Goding, Ulises Aregueta-Robles, Alexander Patton, Penny Martens, Rylie Green <i>University of New South Wales, Sydney, Australia</i>
12:00	196	<b>Delivery of Neurotrophic Factors to the Brain Using Fibrin-Based Hollow Microsphere Reservoirs</b> <u>Juhi Samal</u> , Deirdre Hoban, Carol Naughton, Ruth Concannon, Ellis Dowd, Abhay Pandit <i>National University of Ireland, Galway, Ireland</i>
12:15	197	<b>Amine-Functionalized Oligomer-Cross-Linked Gelatin-Based Conduits for Nerve Regeneration</b> <u>Caroline Kohn</u> , Julia M. Mehnert, Christian Kascholke, Michaela Schulz-Siegmund, Matthias Brandenburger, Michael C. Hacker <i>University of Leipzig, Germany</i>
12:30	198	<b>A Dual-Layered Microfluidic System for the Controlled In Situ Delivery of Anti-inflammatory Factors in Chronic Neural Implants</b> <u>Laura Frey</u> , Su Ryon Shin, Kevin O'Kelly, Ali Khademhosseini <i>Harvard Medical School, United States</i>
12:45	199	<b>Schwann Cell Behavior in Degradable PVA-Tyramine Hydrogels</b> <u>Ulises Aregueta Robles</u> , Khoon Lim, Penny Martens, Laura Poole-Warren, Nigel Lovell, Rylie Green <i>University of New South Wales, Sydney, Australia</i>

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**Session 41  
Hall 4A**

**Cell Instructive Materials 4**

Chairs: Guy Daculsi, *INSERM LIOAD UMR 791, France*  
Maria Chatz Nikolaidou, *University of Crete, Greece*  
Ana Rita Rodrigues Araújo, *3B's Research Group - University of Minho, Portugal (YSF Chair)*

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11:30	K13	<b>Keynote</b> <b>Bio-Fabrication and Physiological Self-Release of Tissue Equivalents Using Smart Peptide Amphiphile Templates</b> <u>Che Connon</u> , Ricardo Gouveia, Valeria Castelletto, Ian Hamely <i>Newcastle University, United Kingdom</i>
12:00	200	<b>Cellular Alignment in Response to Direct Laser Interference Patterning on Polyurethane Surfaces</b> <u>Lucas Cortella</u> , Denise Langheinrich, Idágene Cestari, Andrés Lasagni, Ismar Cestari <i>University of São Paulo, Brazil</i>
12:15	201	<b>Correlation of Mechanical Properties of Bio-Imitating Coatings with the Life Processes of Human Cells</b> Roman Major, Juergen M. Lackner <i>Institute of Metallurgy and Materials Science PAS, Poland</i>
12:30	202	<b>Effect of Osteogenic Growth of Adipose Derived Stem Cells And Human Osteoblasts on the Mechanical Properties of Protein Based Films with Microchannels</b> <u>Esen Sayin</u> , Rosti Hama Rashid, Ahmed Elsheikh, José Carlos Rodríguez-Cabello, Erkan Türker Baran, Vasif Hasirci <i>Center of Excellence in Biomaterials and Tissue Engineering, Turkey</i>
12:45	203	<b>Vasculogenesis by a Maleimide Cross-Linked PEG Hydrogel Containing Calcium Phosphate Glass Particles</b> <u>Claudia Navarro</u> , Jessica Weaver, Óscar Castaño, Amy Clark, Jose Garcia, Soledad Pérez-Amodio, Dennis Zhou, Douglas Clift, Andres J. García, Elisabeth Engel <i>Institute for Bioengineering of Catalonia, Spain</i>

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**Hall 4B**

**Science for Industry (2)**

**Bioresorbable Materials for Medical Applications**

Organizers: Xiang Zhang, Ipsita Roy, Kadem Al-Lamee, Stuart Maclachlan, Maria Joao Barros, Nial Bullett, Mark Taylor

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11:30		<b>Bioresorbable Systems: The Role of Inorganic Fillers in Composites</b> <u>Aldo R. Boccaccini</u> <i>University of Erlangen-Nuremberg, Germany</i>
11:50		<b>Bioresorbable Systems: The Role of Surface Functionalisation</b> <u>Iban Quintana</u> <i>IK4-TEKNIKER Ultra - Precision Processes Unit, Spain</i>
12:10		<b>Bioresorbable Systems: The Role of Modelling and Simulation in Performance Assessment of Bio-Structures and Implants</b> <u>Atul Bhaskar</u> <i>University of Southampton, United Kingdom</i>
12:30		<b>Bioresorbable Systems: The Role of Preclinical Testing</b> <u>Gianluca Giavaresi</u> <i>Istituto Ortopedico Rizzoli, Italy</i>
12:50		<b>Bioresorbable Systems: Discussion</b>

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## Hall 1 Plenary Lecture 7

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- 15:30 L7 **Cell-Made or Man-Made Materials for Bone Reconstruction?**  
Małgorzata Lewandowska-Szumieł  
*Center for Biostructure Research, Medical University of Warsaw, Poland*
- Chairs:** Kazunori Kataoka, *University of Tokyo, Japan*  
Peter Dubruel, *Ghent University, Belgium*
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## Session 42 Hall 1 Bone Tissue Engineering 4

Chairs: Michael Gelinsky, *Technische Universität Dresden, Germany*  
Peter Dubruel, *Ghent University, Belgium*  
Marianne Sommer, *ETH Zurich Complex Materials, Switzerland (YSF Chair)*

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- 16:45 204 **Ectopic Bone Formation by Commercial Calcium Phosphate Bone Graft Substitutes**  
Rongquan Duan, Davide Barbieri, Xiaoman Luo, Joost de Bruijn, Huipin Yuan  
*Xpand Biotechnology BV, Netherlands*
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- 17:00 205 **In Vivo and In Vitro Characterization of Porous Polyurethane-Hydroxyapatite Scaffolds as a Bone Substitute**  
Gifty Tetteh, Maksym Pogorielov, Ihtesham U. Rehman, Gwendolen C. Reilly  
*University of Sheffield, United Kingdom*
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- 17:15 206 **Preparation and Bioactivity of Nanocomposite Scaffolds Based on Biodegradable Polyurethane Foams and Bioactive Glass Nanoparticles**  
Cristian Covarrubias, Amaru Aguero, Monserrat Cádiz, Mario Díaz, Mehrdad Yazdani-Pedram, Juan Pablo Rodriguez, Carla Urra, Juan Cahuich, Juan M. Cervantes  
*University of Chile, Chile*
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- 17:30 207 **Influence of Hydroxyapatite on Degradation Behaviour of PLA Fibres Scaffold**  
Nancy Vargas-Becerril, Lucia Téllez-Jurado, Octavio Álvarez-Fregoso, Manuel Hipólito-García, Luis María Rodríguez-Lorenzo, José Arturo Fernández-Pedrero, Marco Antonio Álvarez-Pérez  
*Autonome National University of Mexico, Mexico*
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**Session 43**  
**Hall 2**

**Cellular Response**

Chairs: Ana Paula Pego, *INEB - Instituto de Engenharia Biomédica, Portugal*  
Lucy Di Silvio, *King's College London Guy's Hospital, United Kingdom*  
Małgorzata Krok-Borkowicz, *AGH University of Science and Technology, Poland (YSF Chair)*

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16:45	208	<b>Biomaterial Systems for Delivery or Education of Immunosuppressive Dendritic Cells to Ameliorate Multiple Sclerosis in a Murine Model</b> Aline Thomas, Sangeetha Srinivasan, Jennifer Blanchfield, Aaron M. Rosado, Andres Garcia, Brian Evavold, <a href="#">Julia Babensee</a> <i>Georgia Institute of Technology, United States</i>
17:00	209	<b>Microdialysis and Proteomics – New Approaches to Analyse the Early Stages of Fracture Repair in Bone Defects</b> Yvonne Förster, Johannes Schmidt, Sven Baumann, Ute Hempel, Martin von Bergen, Stefan Kalkhof, Stefan Rammelt <i>Technische Universität Dresden, Germany</i>
17:15	210	<b>Cellular Recognition of Collagen Based Scaffolds</b> Daniel Bax, Natalia Davidenko, Richard Farndale, Ruth Cameron, Serena Best <i>University of Cambridge, United Kingdom</i>
17:30	211	<b>Multicellular Spheroids and 3D Scaffold Cultures Up-Regulate Different Events in Osteogenic Differentiation of Adipose-Derived Mesenchymal Stem Cells</b> <a href="#">Sławomir Rumiński</a> , Adam Zalewski, Małgorzata Lewandowska-Szumiel <i>Medical University of Warsaw, Poland</i>

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**Session 44**  
**Hall 3A**

**Wound Healing 2**

Chairs: Antonio Merolli, *The Catholic University Gemelli Medical School, Italy*  
Marc Bohner, *RMS Foundation, Switzerland*  
Patrycja Domalik-Pyzik, *AGH University of Science and Technology, Poland (YSF Chair)*

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16:45	212	<b>Balancing Fibroblast Differentiation in a Biomimetic Wound Healing Model</b> Jiranuwat Sapudom, Michael Ansorge, Marina Chkolnikov, Katja Franke, Ulf Anderegg, <a href="#">Tilo Pompe</a> <i>Universität Leipzig, Germany</i>
17:00	213	<b>New Bilayered Biodegradable Polymeric Systems. A Feasible Approach for Skin Lesions</b> Noemi Santurce, Álvaro González-Gómez, Raul Rosales, Marcela Martin del Campo-Fierro, Blanca Vazquez, <a href="#">Julio San Roman</a> <i>Institute of Polymers CSIC and CIBER-BBN, Spain</i>
17:15	214	<b>Fluorescent Activated Cell Sorting (FACS) as a Tool to Quantify the Immune Cell Response to Intramuscular Implanted Materials in Rats</b> Tanja Schmidt, Zienab Kronbach, Marie Heinze, Susann Krummsdorf, Marcel Geilling, <a href="#">Frank Witte</a> <i>Berlin-Brandenburg Center For Regenerative Medicine, Germany</i>
17:30	215	<b>Endogenous Human Dermal Equivalent in Vitro Model to Study Wound Healing Process</b> <a href="#">Bernadette Lombardi</a> , Costantino Casale, Giorgia Imparato, Francesco Urciuolo, Paolo Netti <i>Istituto Italiano di Tecnologia, Italy</i>

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Wednesday, 2<sup>nd</sup> Sept

## Session 45 Hall 3B

Chairs: Heinz Redl, *Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Austria*  
Zbigniew Jaegermann, *Institute of Ceramics and Building Materials, Poland*  
Anton Goncharenko, *V.N. Karazin Kharkiv National University, Ukraine (YSF Chair)*

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16:45	216	<b>Modification of Calcium Phosphate Bone Cements with Biologically Active Metal Ions: In Vitro and In Vivo Characterization</b> <i>Anja Lode, Anne Bernhardt, Barbe Rentsch, Claudia Rentsch, Martha Geffers, Mandy Quade, Stefan Rammelt, Uwe Gbureck, Michael Gelinsky</i> <i>Technische Universität Dresden, Germany</i>
17:00	217	<b>Development of Novel Implants with Embedded Therapeutics</b> <i>Sophie Cox, Hany Hassanin, Moataz Attallah, Duncan Shepherd, Owen Addison, Uwe Gbureck, Liam Grover</i> <i>University of Birmingham, United Kingdom</i>
17:15	218	<b>The Influence of Phase Change Materials Based on Poly(Ethylene Glycol) on the Properties of Acrylic Bone Cements</b> <i>Kinga Pielichowska, Katarzyna Filipek</i> <i>AGH University of Science and Technology, Poland</i>
17:30	219	<b>Marine Collagen Reinforcement of Calcium Phosphate Bone Cements: A Biological Assessment</b> <i>Iwan Palmer, John Nelson, Wolfgang Schatton, Nicholas Dunne, Fraser Buchanan, Susan Clarke</i> <i>Queen's University, United Kingdom</i>

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## Session 46 Hall 4A

Chairs: Josep A. Planell, *Universitat Oberta de Catalunya, Spain*  
Aneta Frączek-Szczypta, *AGH University of Science and Technology, Poland*  
Hyeyoun Chang, *Korea University of Science and Technology, Korea (YSF Chair)*

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16:45	220	<b>Cellular Uptake and Degradation of Poly(Lactide-co-Glycolide) Nanoparticles and its Influences on Cell Functions</b> <i>Dahai Yu, Pengfei Jiang, Zhengwei Mao, Changyou Gao</i> <i>Zhejiang University, China</i>
17:00	221	<b>Evaluation of Biological Effects of Nanomaterials on Human Cell Line, EA.hy926</b> <i>Małgorzata Siatkowska, Tomasz Wasiak, Paulina Sokołowska, Joanna Rywaniak, Katarzyna Działoszyńska, Sylwia Kotarba, Kinga Kądzioła, Nina Bartoszek, Marta Kamińska, Agnieszka Kołodziejczyk, Piotr Komorowski, Krzysztof Makowski, Bogdan Walkowiak</i> <i>Lodz University of Technology, Poland</i>
17:15	222	<b>Gellan-Gum Coated Gold Nanorods as Intracellular Drug Release System for Osteogenic differentiation</b> <i>Stephanie Vial, Silvia Vieira, Fatima Maia, Mariana Carvalho, Rui Reis, Pedro Granja, Joaquim Oliveira</i> <i>3Bs Research Group, Portugal</i>
17:30	223	<b>On the Influence of Various Physicochemical Properties of the CNTs Layers on the Cell's Reaction In Vitro</b> <i>Aleksandra Benko, Elżbieta Menaszek, Marek Nocuń, Marta Błazewicz, Aneta Frączek-Szczypta</i> <i>AGH University of Science and Technology, Poland</i>

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Hall 4B

**Science for Industry (3)**  
**Bioresorbable Materials for Medical Applications**

Organizers: Xiang Zhang, Ipsita Roy, Kadem Al-Lamee, Stuart Maclachlan, Maria Joao Barros,  
Nial Bullett, Mark Taylor

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16:45	<b>Welcome back and overview of morning's proceedings</b> Xiang Zhang, Ipsita Roy
16:55	<b>Research into Bioresorbable Systems</b> <i>Elena Boccardi, University of Erlangen-Nuremberg, Germany</i> <i>Zein Azhari, Cambridge University, United Kingdom</i>
17:15	<b>Panel discussion and overview of proceedings with speakers from the Bioresorbable System Session</b>

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<b>Hall 1</b>	<b>Plenary Lecture 8</b>
9:00	<b>L8</b> <b>Biological-Basis for Designing Biomaterials for the Injured and Degenerated Host - Examples in the Neural Space</b> <u>Abhay Pandit</u> <i>Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Ireland</i>
	<b>Chairs:</b> Laura Poole-Warren, <i>University of New South Wales, Sydney, Australia</i> Jadwiga Laska, <i>AGH University of Science and Technology, Poland</i>

<b>Session 47</b>	<b>Neural Regeneration 3</b>
<b>Hall 1</b>	Chairs: Jadwiga Laska, <i>AGH University of Science and Technology, Poland</i> Serena Best, <i>University of Cambridge, United Kingdom</i> Caroline Kohn, <i>Universität Leipzig, Germany (YSF Chair)</i>
10:00	<b>224</b> <b>Novel Collagen Type I-Hyaluronic Acid Bi-Phasic Conduit for Peripheral Nerve Repair: an In Vivo Study</b> <u>Tijna Alekseeva</u> , Phoebe E. Roche, Amos Matsiko, Amro Widaa, William A. Lackington, Alan Ryan, Alan J. Hibbitts, Garry Duffy, Fergal J. O'Brien <i>Royal College of Surgeons in Ireland, Ireland</i>
10:15	<b>225</b> <b>Sustained Biochemical Signalling and Contact Guidance Provided by Electrospun Bicomponent Scaffolds for Enhancing Nerve Regeneration</b> <u>Chaoyu Liu</u> , Min Wang <i>The University of Hong Kong, Hong Kong</i>
10:30	<b>226</b> <b>The “Micro” and “Macro”- Scale Approach in Building Up Neural Stem Cell Microenvironments for Developmental and Toxicity Studies</b> <u>Leonora Buzanska</u> , Marzena Zychowicz, Krystyna Pietrucha, Martyna Podobinska, Jose Luis Gerardo Nava, Gary Brook <i>Mossakowski Medical Research Centre PAS, Poland</i>
10:45	<b>227</b> <b>Pre-Clinical Investigation of a Novel Biodegradable Polymer Based Medical Device for Peripheral Nerve Regeneration</b> <u>Atefeh Mobasseri</u> , Giorgio Terenghi, Adam Reid, Julie Gough, David Richards <i>University of Manchester, United Kingdom</i>

**Session 48**  
**Hall 2**

**Bone Tissue Engineering 5**

Chairs: Aldo Boccaccini, *University of Erlangen-Nuremberg, Germany*  
Rui Reis, *3B's Research Group - University of Minho, Portugal*  
Thomas Paterson, *University of Sheffield, United Kingdom (YSF Chair)*

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10:00	228	<b>Decrease of MRI Artifact in Spinal Instruments of Zirconium Alloy</b> <u>Takao Hanawa</u> , Naoyuki Nomura, Maki Ashida, Yusuke Tsutsumi, Hisashi Doi, Peng Chen, Manabu Itoh <i>Tokyo Medical and Dental University, Japan</i>
10:15	229	<b>Investigation of Degradation Behavior and Corrosion of Magnesium Alloys for Orthopedic Implants</b> <u>Iulian Antoniac</u> , Ana Blajan, Aurora Antoniac <i>University Politehnica of Bucharest, Romania</i>
10:30	230	<b>Polyurethane-Ceramic Matrices as Orbital Implants</b> Semih Sahan, Pezhman Hosseinian, Deniz Ozdil, Mustafa Turk, <u>Halil Murat Aydin</u> <i>Hacettepe University, Turkey</i>
10:45	231	<b>Bioresorbable Multifunctional Composite Devices – Practical Aspects of Miniplates for Osteosynthesis</b> <u>Karol Gryń</u> , Barbara Szaraniec, Maja Kuś, Kamil Dudziński, Jan Chłopek <i>AGH University of Science and Technology, Poland</i>

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**Session 49**  
**Hall 3A**

**Clinical Trials**

Chairs: Dimosthenis Mavrilas, *University of Patras, Greece*  
Ryszard Uklejewski, *Casimir the Great University, Poland*  
Shahram Ghanaati, *Medical Center of the Goethe University Frankfurt, Germany (YSF Chair)*

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10:00	232	<b>Clinically Used Dextran Coated Iron Oxide Nanoparticles and Their Induced Macrophage Autophagy</b> Rongrong Jin, Jiuju Du, James Anderson, <u>Hua Ai</u> <i>Sichuan University, China</i>
10:15	233	<b>Radiodensitometric Assessment Long Time after Dental Periimplantitis Defect Filled with “Pure” Synthetic HAp Bioceramics</b> <u>Vadims Klimecs</u> , Girts Salms, Andrejs Skagers, Aleksandrs Grishulonoks, Laura Neimane, Liga Berzina-Cimdina, <i>Institute of Stomatology, Latvia</i>
10:30	234	<b>Debris of a Carbon-Fibre-Reinforced Polymers (CFRP) Wrist Plate Led to a Destructive Synovitis in Human</b> <u>Antonio Merolli</u> , Lorenzo Rocchi, Alessandro Morini, Luigi Mingarelli, Paolo Scialabba D’Amico, Francesco Fanfani <i>The Catholic University of Rome, Italy</i>
10:45	235	<b>Clinical Performance of Moldable Bioceramic for Bone Regeneration in Maxillofacial Surgery</b> <u>Guy Daculsi</u> , Thomas Miramond, Pascal Borget, Elodie Seris <i>Inserm UMRS 791 Lioad, France</i>

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**Session 50**  
**Hall 3B**

**Antimicrobial Surfaces and Materials 4**

Chairs: Pentti Tengvall, *University of Gothenburg, Sweden*  
Lukasz Major, *Institute of Metallurgy and Materials Science PAS, Poland*  
Bora Onat, *Middle East Technical University, Turkey (YSF Chair)*

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10:00	236	<b>Antibacterial Effect of Bioactive Starch-Based Scaffolds Functionalized with Silanol Groups</b> <i>Ana Rodrigues</i> , Albina Franco, Fernando Rodrigues, António Castro, Isabel Leonor, Rui Reis <i>3Bs Research Group, Portugal</i>
10:15	237	<b>Bioactive Orthopaedic Devices Preventing Biofilm Formation and Local Infection</b> Loïc Pichavant, H��l��ne Carri��, Laurent Plawinski, Jocelyne Caillon, Gilles Amador, Val��rie H��roguer, <i>Marie-Christine Durrieu</i> <i>Universit�� Bordeaux, France</i>
10:30	238	<b>Anti-Bacterial Borosilicate Glass Formulations for Bone Tissue Engineering Applications</b> <i>Jo��o S. Fernandes</i> , Margarida Martins, Nuno N. Neves, Ricardo A. Pires, Rui L. Reis <i>3Bs Research Group, Portugal</i>
10:45	239	<b>Alginate/Chitosan-Based Materials with Bioactive Functionalities</b> <i>Agnieszka Kyzio��</i> , Anna Regiel-Futyra, Aleksandra Mazga��, Justyna Michna, Ma��gorzata Kus-Li��kiewicz, Silvia Irusta <i>Jagiellonian Univeristy, Poland</i>

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**Session 51**  
**Hall 4A**

**Biomimetic Materials**

Chairs: Sanjukta Deb, *King's College, United Kingdom*  
Anna S  sarczyk, *AGH University of Science and Technology, Poland*  
Nina Henry, *INSERM, France (YSF Chair)*

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10:00	240	<b>First Principles Modelling to Establish the Thermodynamically Most Favourable Form and Position of Silicon in Bone Mineral</b> <i>Helen Chappell</i> , Ravin Jugdaohsingh, Jonathan Powell <i>MRC Human Nutrition Research, United Kingdom</i>
10:15	241	<b>Modification of Living Diatom, <i>Thalassiosira weissflogii</i> by Calcium Precursor as a Sacrificial Template for Development of Next Generation of Structural Biomaterials</b> <i>Asrizal Abdul Rahman</i> , Syed Ansar Md. Tofail, Abhay Pandit <i>National University of Ireland, Galway, Ireland</i>
10:30	242	<b>Fabrication and Histological Evaluation of Carbonate Apatite Coated Calcite</b> <i>Kunio Ishikawa</i> , Kanji Tsuru, Masako Kobayashi, Youji Miyamoto <i>Kyushu University, Japan</i>
10:45	243	<b>Crystallization and Thermal Evolution of Pyrophosphate Polymorphs and Prospective Biomaterials with a Metastable <math>\alpha</math>1-Calcium Pyrophosphate from Amorphous Calcium Phosphates with an Initial CaP Ratio of 1:1</b> <i>Zoltan Zyman</i> , Matthias Epple, Anton Goncharenko, Dmytro Rokhmistrov <i>V.N. Karazin Kharkiv National University, Ukraine</i>

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**Session 52**  
**Hall 4B**

**Osteointegration 2**

Chairs: Jerome Guicheux, *INSERM U791 LIOAD, France*  
Helmut Thissen, *CSIRO Manufacturing Flagship, Australia*  
Monika Gołda-Cępa, *Jagiellonian University, Poland (YSF Chair)*

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10:15	244	<b>Functionally Graded Hybrid Scaffolds for Osteo-Chondral Defect Repair: Scaffold Design</b> Serena Bertoldi, Masoumeh Meskinfam, Paola Petrini, Alessandro Cerri, Nicolò Albanese, MariaCristina Tanzi, <u>Silvia Farè</u> <i>Politecnico di Milano, Italy</i>
10:30	245	<b>Formation of Hybrid Materials Based on Calcium Phosphate Deposit on Carbon Fiber Scaffold</b> Quentin Picard, <u>Lise Guichaoua</u> , Sandrine Delpeux, Nathalie Rochet, Jérôme Chancolon, Franck Fayon, Fabienne Warmont, Sylvie Bonnamy <i>Université d'Orléans, France</i>
11:00	246	<b>Emulsion Templating: a Versatile Route to the Preparation of Biodegradable and Biocompatible Scaffolds for Tissue Engineering</b> <u>Caitlin Langford</u> , David Johnson, Neil Cameron <i>Monash University, Australia</i>
11:15	247	<b>Cross-Linked, Macroporous Hybrid Glass Implants of Defined Architecture for Bone Regeneration</b> <u>Stephan Hendriks</u> , Christian Kascholke, Tobias Flath, Christian Raeck, Mathias Gressenbuch, Peter Schulze, Michael C. Hacker, Michaela Schulz-Siegmund <i>Universität Leipzig, Germany</i>

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**Session 53**  
**Hall 1**

**Advanced Manufacturing 3**

Chairs: Jérôme Sohier, *CNRS Institute of Biology and Chemistry of Proteins, France*  
Tomasz Goryczka, *University of Silesia, Poland*  
Barbara Lukaszewicz, *University of Westminster, United Kingdom (YSF Chair)*

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11:30	K14	<b>Keynote</b> <b>3D Fiber Deposition and Stereolithography Techniques for the Design of Multifunctional Nanocomposite Magnetic Scaffolds</b> <u>Roberto De Santis</u> , Ugo D'Amora, Teresa Russo, Alfredo Ronca, Antonio Gloria, Luigi Ambrosio <i>IPCB-CNR Institute of Polymers, Composites and Biomaterials – Naples, Italy</i>
12:00	248	<b>Tailoring Porosity from the Nano- to the Macroscale of Low-Temperature Consolidated Robocasted Scaffolds</b> Edgar B. Montufar, Yassine Maazouz, Borja Gonzalez, Ladislav Celko, Jozef Kaiser, Maria-Pau Ginebra <i>Technical University of Catalonia, Spain</i>
12:15	249	<b>Development of Bioactive and Antimicrobial 3D Plotted PCL Scaffolds for Bone Tissue Engineering</b> <u>Giuseppe Cama</u> , Myriam Gomez Tardajos, Peter Dubruel <i>Ghent University, Belgium</i>
12:30	250	<b>Two-Photon Polymerization of Ormocomp® 3D Structures Doped with Piezoelectric Barium Titanate Nanoparticles</b> Attilio Marino, Jonathan Barsotti, Massimiliano Labardi, Barbara Mazzolai, Virgilio Mattoli, <u>Gianni Ciofani</u> <i>Italian Institute of Technology, Italy</i>
12:45	251	<b>Additive Manufacturing of Poly-High Internal Phase Emulsion Scaffolds with Tuneable Mechanical Properties for Bone Tissue Engineering</b> Robert Owen, Colin Sherborne, Gwendolen Reilly, <u>Frederik Claeysens</u> <i>The University of Sheffield, United Kingdom</i>

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**Session 54**  
**Hall 2**

**Bone Tissue Engineering 6**

Chairs: Elizabeth Tanner, *University of Glasgow School of Engineering, United Kingdom*  
Serena Best, *University of Cambridge, United Kingdom*  
Anna Donesz-Sikorska, *Wrocław University of Technology, Poland (YSF Chair)*

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11:30	K15	<b>Keynote</b> <b>Polymer Brush-Assisted Fabrication of Protein Gradients Inside of 3D Microporous Scaffolds</b> Andrea Di Luca, Michel Klein Gunnewiek, Hermen Bollemaat, Clemens van Blitterswijk, Julius Vancso, Edmondo Benetti, <u>Lorenzo Moroni</u> <i>University of Maastricht, Netherlands</i>
12:00	252	<b>Osteogenic Potential of Self-Assembling Bioceramic Nanoparticles</b> <u>Michelle O'Doherty</u> , Sreekanth Pentlavalli, Philip Chambers, Marine Chalanqui, Helen McCarthy, Nicholas Dunne <i>Queen's University Belfast, United Kingdom</i>
12:15	253	<b>Results of Pilot Experimental Studies in 10 Animals on Prototype of the Multispiked Connecting Scaffold with Thermo-Electrochemically Ca-P Modified Surface for Non-Cemented Biofixation of RA Endoprostheses</b> <u>Ryszard Uklejewski</u> , Piotr Rogala, Mariusz Winiecki, Wanda Stryła <i>Casimir the Great University, Poland</i>
12:30	254	<b>Analysis of Osteoinductive Properties of Combinations of Macroporous Ceramic (MBCP+™), Simvastatin, rhBMP-2, and BMSC in a Femoral Critical Size Induced Membrane Model in Rats</b> <u>Erwan de Mones</u> , Silke Schlaubitz, Reine Bareille, Lionel Couraud, Jean-Christophe Fricain <i>INSERM U1026, France</i>
12:45	255	<b>The Influence of Calcium Phosphate Microparticle Incorporation in Highly Orientated Macroporous Collagen Scaffolds on the Mechanism of Bone Defect Healing</b> <u>Ansgar Petersen</u> , Hans Leemhuis, Andreas Hoess, Agnes Ellinghaus, Berthold Nies, Ingo Heschel, Georg N. Duda <i>Charité – Universitätsmedizin Berlin, Germany</i>

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**Session 55**  
**Hall 3A**

**Cardiovascular Applications 3**

Chairs: Lucie Bacakova, *Academy of Sciences of the Czech Republic, Czech Republic*  
Kinga Pielichowska, *AGH University of Science and Technology, Poland*  
Claudia Navarro, *Institute for Bioengineering of Catalonia, Spain (YSF Chair)*

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11:30	K16	<b>Keynote</b> <b>Elastomeric Materials of Enhanced Mechanical Performance for Implantable Artificial Heart</b> Agnieszka Piegat, <u>Mirosława El Fray</u> <i>West Pomeranian University of Technology, Szczecin, Poland</i>
12:00	256	<b>Preparation of a Small Diameter Decellularized Blood Vessel Covered with SPU Fibers by Electrospinning</b> <u>Tsuyoshi Kimura</u> , Hiroko Morita, Pingli Wu, Naoko Nakamura, Kwangwoo Nam, Toshiya Fujisato, Akio Kishida <i>Tokyo Medical and Dental University, Japan</i>
12:15	257	<b>Blend Electrospinning of Biodegradable Chitosan/Polycaprolactone Fibers as a Process to Create Scaffolds for Cardiovascular Tissue Engineering</b> Alexandros Repanas, Birgit Glasmacher, Alexandra Theodoropoulou, <u>Dimosthenis Mavrilas</u> <i>University of Patras, Greece</i>
12:30	258	<b>Designing Novel Polymeric Endovascular Devices</b> <u>Daniel Cohn</u> , Randa Abbas, Fany Widlan, Matthew Zarek, Ram Malal, Allan Bloom <i>The Hebrew University of Jerusalem, Israel</i>
12:45	259	<b>Mechanical Characterization of Small Diameter Grafts Made of Segmented Polyurethanes Based on Alkaline Aminoacids</b> Omar Castillo-Cruz, Francis Aviles, Rossana F. Vargas-Coronado, Jose Manuel Cervantes-Uc, <u>Juan Valerio Cauich-Rodriguez</u> , Lerma Hannaiy Chan-Chan <i>Centro de Investigación Científica de Yucatán, Mérida, Yucatán, Mexico</i>

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**Session 56**  
**Hall 3B**

**Surface Modification 5**

Chairs: Kunio Ishikawa, *Kyushu University, Japan*  
Tomasz Moskalewicz, *AGH University of Science and Technology, Poland*  
Aleksandra Benko, *AGH University of Science and Technology, Poland (YSF Chair)*

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11:30	260	<b>Patterning of Neuron Adhesion and Differentiation on Diamond-Like Carbon by Pulsed Laser Ablation</b> <u>James Dugan</u> , Frederik Claeysens <i>University of Sheffield, United Kingdom</i>
11:45	261	<b>Electrochemically Assisted Deposition of Strontium Modified Magnesium Phosphate on Titanium Surfaces</b> Markus Meininger, Julia Zerweck, Cornelia Wolf-Brandstetter, Uwe Gbureck, Jürgen Groll, Claus Moseke <i>University of Würzburg, Germany</i>
12:00	262	<b>Hydrothermally-Treated Nano-Crystalline TiO<sub>2</sub> Coatings Boost the “Race for the Surface” Towards Osteogenesis rather than Bacterial Adhesion</b> <u>Martina Lorenzetti</u> , Iztok Dogša, David Stopar, Katrin Susanne Lips, Reinhard Schnettler, Mitjan Kalin, Spomenka Kobe, Saša Novak <i>Jožef Stefan Institute, Slovenia</i>
12:15	263	<b>Covalent Attached Fibronectin Fragment-PLDLLA Nanofibers on Titanium for Guiding Osteoblast Behaviour</b> <u>Jordi Guillem-Martí</u> , Gerard Boix-Lemonche, Dencho Gugutkov, George Altankov, Francisco Javier Gil, Jose Maria Manero <i>Technical University of Catalonia (UPC), Spain</i>
12:30	264	<b>Morphometric Examination of Local Tissue Reactions following Implantation of Ti<sub>6</sub>Al<sub>4</sub>V Plates Coated with Anti-Adhesive Plasma-Fluorocarbon-Polymer Films in Rats</b> <u>Andreas Hoene</u> , Birgit Finke, Holger Testrich, Silke Lucke, Uwe Walschus, Karsten Schröder, Jürgen Meichsner, Maciej Patrzyk, Michael Schlosser <i>University Medical Center Greifswald, Germany</i>
12:45	265	<b>Evaluation of Biological Response of Implants Modified by Carbon Coatings with Si (Si-DLC)</b> <u>Dorota Bociaga</u> , Jacek Grabarczyk, Joanna Piasecka-Zelga, Jan Skowroński, Piotr Niedzielski <i>Lodz University of Technology, Poland</i>

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**Session 57**  
**Hall 4A**

**Smart Biomaterials 2**

Chairs: Manus Biggs, *National University of Ireland, Galway, Ireland*  
Helen Chappell, *MRC Human Nutrition Research Biominerals Research, United Kingdom*  
Valentina Bonfrate, *University of Salento, Italy (YSF Chair)*

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11:30	266	<b>Biodegradable Semiconductor Hydrogels for the Photothermal Control of Growth Factor Bioavailability</b> <i>Francisco Martín-Saavedra, Martín Prieto, Manuel Arruebo, Jesús Santamaría, Nuria Vilaboa</i> <i>La Paz University Hospital-IdiPAZ, Spain</i>
11:45	267	<b>Nanoporous Bead and Monolith Adsorbents for Haemoperfusion Applications</b> <i>Yishan Zheng, Susan Sandeman, Ganesh Ingavle, Carol Howell, Sandeep Kumar, Matthew Pope, Michal Kowalski, Kolitha Basnayake, Steve Tension, Sergey Mikhailovsky</i> <i>University of Brighton, United Kingdom</i>
12:00	268	<b>Biodegradable Temperature-Responsive Injectable Polymer Formulation Convenient at Clinical Scene</b> <i>Yuichi Ohya, Yasuyuki Yoshida, Akihiro Takahashi, Akinori Kuzuya</i> <i>Kansai University, Japan</i>
12:15	269	<b>Mechanical and Cytotoxic Evaluation of a Novel Hydrogel with Potential to Deliver Bioceramic Nanoparticles</b> <i>Sreekanth Pentlavalli, Michelle O'Doherty, Philip Chambers, Marine Chalanqui, Helen McCarthy, Nicholas Dunne</i> <i>Queen's University, United Kingdom</i>
12:30	270	<b>Thermally Modulated Mesenchymal Stem Cell Separation Using Thermoresponsive Cationic Copolymer Brush</b> <i>Kenichi Nagase, Yuri Hatakeyama, Tatsuya Shimizu, Katsuhisa Matsuura, Masayuki Yamato, Naoya Takeda, Teruo Okano</i> <i>Tokyo Women's Medical University, Japan</i>
12:45	271	<b>Biopolymer Mediated Uptake of Sugar Molecules for Cell Preservation and Therapy</b> <i>Rongjun Chen, Andrew Lynch, Liwei Wu, Zhenlu Hu, Nigel Slater</i> <i>Imperial College London, United Kingdom</i>

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**Session 58**  
**Hall 4B**

**Drug Delivery 4**

Chairs: David Eglin, *AO Research Institute Davos, Switzerland*  
Henning Menzel, *University of Technology Braunschweig, Germany*  
Jiankang Song, *Radboud University, Netherlands (YSF Chair)*

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11:30	272	<b>Lipid Nanoparticles Loaded into Biopolymer-Based Hydrogels; Materials for Controlled Rate of Drug Delivery</b> <i>Lisa Racine, Rachel Auzély-Velty, <u>Isabelle Texier</u></i> <i>Université Grenoble Alpes, CEA/DTBS, France</i>
11:45	273	<b>Selective In Vitro Anticancer Effect of Hyaluronan Polymeric Micelles Loaded with SPIONs</b> <i><u>Daniela Smejkalova</u>, Kristina Nesporova, Gloria Huerta-Angeles, Jakub Syrovatka, Andrea Galisova, Daniel Jirak, Vladimir Velebny</i> <i>Contipro Pharma, Czech Republic</i>
12:00	274	<b>Injectable Hydrogel Based on a Novel Amphiphilic Hyaluronic Acid Derivative for Controlled Drug Release</b> <i>Assunta Borzacchiello, Luisa Russo, Fabio Salvatore Palumbo, Stefano Agnello, Giovanna Pitarresi, Gaetano Giammona, Luigi Ambrosio</i> <i>Institute for Composite and Biomedical Materials IMCB-CNR, Italy</i>
12:15	275	<b>Polysaccharide-Based Nanomicrosystems for Controlled Delivery of Anti-Inflammatory Agents</b> <i>Anna Karewicz, Agnieszka Rojewska, Marta Baster, Elena Iruin Amatriain, Michał Rączy, Maria Nowakowska</i> <i>Jagiellonian University, Poland</i>
12:30	276	<b>Combination of Different BMP2- Peptide Release Mechanisms from Natural Polymeric Systems</b> <i><u>Daniela Giugliano</u>, Maria Grazia Raucci, Luigi Ovaleo Pandolfo, Alessandra Sorinte, Luigi Ambrosio</i> <i>Institute of Polymers, Composites and Biomaterials – National Research Council of Italy, Italy</i>
12:45	277	<b>Mesoporous Bioactive Glass/CaP Bone Cement Composites for the Delivery of the Growth Factor BDNF</b> <i><u>Matthias Schumacher</u>, Katrin S. Lips, Michael Gelinsky</i> <i>Technische Universität Dresden, Germany</i>

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# Rapid Fire Presentations (1)

Monday, 31<sup>st</sup> August (start at 13:30)

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278	<b>Development of Novel Bioresorbable Iron-silver Materials and their in vitro Degradation Behavior</b> <u>Sanjaya K. Swain</u> , David Starosvetsky, Irena Gotman, Elazar Y. Gutmanas <i>Israel</i>
279	<b>Dissolution Behaviours of MgO-P<sub>2</sub>O<sub>5</sub>-TiO<sub>2</sub>/Nb<sub>2</sub>O<sub>5</sub> Glasses in MgO-rich Region</b> <u>Sungho Lee</u> , Hirotaka Maeda, Akiko Obata, Kyosuke Ueda, Takayuki Narushima, Toshihiro Kasuga <i>Japan</i>
280	<b>Development of Structurally Analogous Cryoprotective Synthetic Polyampholytes and Elucidation of Mechanism</b> <u>Robin Rajan</u> , Kazuaki Matsumura <i>Japan</i>
281	<b>Shear- Thinning Soft Bionanocomposites Based on Laponite and Poly-L-Lysine for Cell Delivery Purposes</b> <u>Minkle Jain</u> , Kazuaki Matsumura <i>Japan</i>
282	<b>Viscoelastic Behaviour of Embroidered Scaffolds for the Tissue Engineering of Ligaments</b> <u>Judith Hahner</u> , Claudia Hinüber, Annette Breier, Gert Heinrich <i>Germany</i>
283	<b>Exploring the Limits of Scaffold Interconnectivity for Cell Type Specific Invasion</b> <u>Jennifer Ashworth</u> , Marco Mehr, Paul Buxton, Serena Best, Ruth Cameron <i>United Kingdom</i>
284	<b>The Impact of Thrombocytes on the Cell Proliferation within the 3D Scaffolds</b> <u>Kateřina Pilařová</u> , Věra Jenčová, Jana Horáková, Jakub Erben, Jiří Chvojka, David Lukáš <i>Czech Republic</i>
285	<b>Development of a Valved Conduit for Venal Reconstruction</b> <u>Sonia Zia</u> , Lucrezia Morticelli, Karsten Grote, Igor Tudorache, Sergei Cebotari, Andres Hilfiker, Birgit Glasmacher, Axel Haverich, Sotirios Korossis <i>Germany</i>
286	<b>Biocompatible Collagen Paramagnetic Scaffold for Controlled Drug Release</b> <u>Valentina Bonfrate</u> , Simona Bettini, Luca Salvatore, Marta Madaghiele, Ludovico Valli, Gabriele Giancane, Alessandro Sannino <i>Italy</i>
287	<b>Uptake of Nanoparticles by Macrophage Cell Line Predicts In Vivo Clearance by Reticuloendothelial System</b> <u>Hyeyoun Chang</u> , Ick Chan Kwon, Kwangmeyung Kim <i>Republic of Korea</i>
288	<b>Development of Novel Biomaterials, Natural Polymers, Polyhydroxyalkanoates (PHAs), for Biomedical Applications</b> <u>Barbara Lukasiewicz</u> , Pooja Basnett, Ipsita Roy <i>United Kingdom</i>
289	<b>Does Ascorbic Acid Modified Polyurethanes May be Suitable Candidates for Soft Tissue Engineering?</b> <u>Iga Gubanska</u> , Justyna Kucinska-Lipka, Marta Pokrywczynska, Tomasz Drewa, Helena Janik <i>Poland</i>
290	<b>Thermal Crystallization and Phase Evolution in the Amorphous Calcium Phosphate Powders with a Ca/P Ratio of 1:1</b> <u>Anton Goncharenko</u> , Matthias Epple, Zoltan Zyman, Dmytro Rokhmistrov <i>Ukraine</i>

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# Rapid Fire Presentations (2)

Tuesday, 1<sup>st</sup> September (start at 13:30)

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291	<b>Methodological Evaluation of Quantitative <i>in Vivo</i> MRI Volume Measurements of Hydrogels by <i>ex Vivo</i> CT Imaging</b> <u>Christoph Tondera</u> , Sandra Ullm, Sebastian Meister, Tim P. Gebauer, Axel T. Neffe, Andreas Lendlein, Jens Pietzsch <i>Germany</i>
292	<b>Intraocular Lenses with Surfaces Functionalized by Biomolecules in Relation with Lens Epithelial Cell Adhesion</b> <u>Yi-Shiang Huang</u> , Virginie Bertrand, Dimitriya Bozukova, Christophe Pagnouille, Edwin De Pauw, Marie-Claire De Pauw-Gillet, Marie-Christine Durrieu <i>Belgium</i>
293	<b>Introducing Controlled Nano-Roughness in 3D Silk Fibroin Scaffolds for Bone Tissue Engineering</b> <u>Marianne R. Sommer</u> , Ralph Müller, Sandra Hofmann, André R. Studart <i>Switzerland</i>
294	<b>Effect of Calcium Phosphate Ceramic Substrate Geometry on Cell Organization and Behaviour</b> <u>A. Hayrapetyan</u> , E.R. Urquia Edreira, J.G.C. Wolke, J.A. Jansen, J.J.J.P. van den Beucken <i>Netherlands</i>
295	<b>Novel Approach Towards Osseointegration: Surface Functionalization on Zirconia</b> <u>Carlos Caravaca</u> , Liu Shi, Sandra Balvay, Pascaline Rivory, Emmanuelle Laurenceau, Yann Chevolut, Daniel Hartmann, Laurent Gremillard, Jérôme Chevalier <i>France</i>
296	<b>Novel Enzymatically Cross-linked Silk Fibroin Hydrogel with Potential Applications as Suppressor of Angiogenesis and Tumor Progression</b> Viviana Ribeiro, <u>Joana Silva-Correia</u> , Vera Miranda-Gonçalves, Le-Ping Yan, Ana L. Oliveira, Rui M. Reis, Rui L. Reis, Joaquim M. Oliveira <i>Portugal</i>
297	<b>Electrophoretic Deposition of Composite Coatings Based on ZnO Nanoparticles on Ti6Al7Nb Alloy</b> <u>Joanna Karbowniczek</u> , Luis Cordero-Arias, Aleksandra Czyrska-Filemonowicz, Aldo R. Boccaccini <i>Poland</i>
298	<b>Bioactivation of SiO<sub>2</sub> Sol-gel Coatings as a Modification Method of Metallic Implants</b> <u>Anna Donesz-Sikorska</u> , Justyna Krzak, Jerzy Kaleta, Małgorzata Krok-Borkowicz, Elżbieta Pamuła <i>Poland</i>
299	<b>Multimodal Image Registration for Assessment of Bone Formation in Porous Metal Implants</b> <u>Hua Geng</u> , Taek Bo Kim, Aine Devlin, Naomi Todd, Kamel Madi, Julian R. Jones, Christopher Mitchell, Chris Sutcliffe, Sarah Cartmell, Peter D. Lee <i>United Kingdom</i>
300	<b>Injectable Hydroxyapatite Enriched Hyaluronate Gels for Versatile Tissue Engineering Applications</b> Cecilia De León, Elvira Estella, L. Téllez-Jurado, M.A. Álvarez-Pérez, Julio San Román, Luis M. Rodriguez-Lorenzo <i>Spain</i>
301	<b>Bone Induction by Surface Modified Calcium Phosphate Ceramics</b> <u>Rongquan Duan</u> , Davide Barbieri, Xiaoman Luo, Florence de Groot, Huipin Yuan, Joost D. de Bruijn <i>Netherlands</i>
302	<b>Optical Coherence Tomography as a Complementary Method to X-ray Computed Tomography in Dental Diagnosis</b> Marcin Strąkowski, Milena Supernak-Marczewska, <u>Paulina Strąkowska</u> , Ewa Kowalska, Maciej Kraszewski, Małgorzata Ryniec-Wilczyńska, Michał Trojanowski, Violetta Szyck <i>Poland</i>
303	<b>Molecular Basis of the Gp36 MPER Fusogenic Activity</b> <u>Anna Maria D'Ursi</u> , Agostino Bruno, Mario Scrima, Manuela Grimaldi, Grazia Della Sala, Vittorio Limongelli <i>Italy</i>

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# Rapid Fire Presentations (3)

Wednesday, 2<sup>nd</sup> September (start at 13:30)

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304	<b>Engineering PEGylated Alginate Hydrogels for Cell Microencapsulation</b> <u>Solène Passemard</u> , François Noverraz, Virginia Crivelli, Redouan Mahou, Françoise Borcard, Sandrine Gerber-Lemaire, Christine Wandrey <i>Switzerland</i>
305	<b>Study of Biodegradation Impact on PLA/Graphene-Nanoplatelets Biocomposites Mechanical and Biological Properties</b> <u>Artur M. Pinto</u> , Carolina Gonçalves, Inês C. Gonçalves, Fernão D. Magalhães <i>Portugal</i>
306	<b>Osteoinductive and Antibacterial Coatings for Dental Implants</b> <u>Beatriz Palla</u> , Francisco Javier Romero, Mar Fernández, Julio Suay, Mariló Gurruchaga, Isabel Goñi <i>Spain</i>
307	<b>On-Demand Release of Dexamethasone from Conjugated Polymer Matrix</b> <u>Katarzyna Krukiewicz</u> , Artur P. Herman, Sławomir Boncel, Jerzy K. Żak <i>Poland</i>
308	<b>Mesoporous Silica Nanofibers as Drug Delivery Systems for Intervertebral Disc Regenerative Medicine: Analysis of Protein-Silica Interactions</b> <u>Nina Henry</u> , Johann Clouet, Catherine Le Visage, Eric Gautron, Bernard Humbert, Jérôme Guicheux, Jean Le Bideau <i>France</i>
309	<b>Regulation of Inflammatory Gene Expression by Functionalized Calcium Phosphate Nanoparticles with Different Delivery Strategies to the Gut</b> <u>Bernhard Neuhaus</u> , Annika Frede, Astrid Westendorf, Matthias Epple <i>Germany</i>
310	<b>How the Interfacial Shear Strength in PLGA Fibre-Reinforced Brushite Cements Affects the Composites Mechanical Properties</b> <u>Stefan Maenz</u> , Max Hennig, Mike Mühlstädt, Elke Kunisch, Raimund W. Kinne, Frank Plöger, Jörg Bossert, Klaus D. Jandt <i>Germany</i>
311	<b>Heparinization of Calcium Phosphates: Towards Enhancing Biological Performance</b> <u>Anna Díez-Escudero</u> , Montserrat Espanol, Maria-Pau Ginebra <i>Spain</i>
312	<b>Intercellular Delivery of Self-Assembling Osteogenic Nanoparticles: Fate and Effect</b> <u>Philip Chambers</u> , Sreekanth Pentlavalli, Michelle O'Doherty, Marine Chalanqui, Helen O. McCarthy, Nicholas Dunne <i>Northern Ireland</i>
313	<b>Porous Particles as Cell Delivery Vehicles for Bone Tissue Engineering</b> Thomas Paterson, James Dugan, Colin Sherborne, Chia-Cheng Chen, Nicola Green, Gwendolen Reilly, Frederik Claeysens <i>United Kingdom</i>
314	<b>Biodegradable SCL-PHA Composite Scaffolds for Bone Tissue Engineering</b> <u>Christy Thomas</u> , Aldo. R. Boccaccini, Ipsita Roy <i>United Kingdom</i>
315	<b>Multifunctional Anti-Adhesive Films Prepared by Layer-by-Layer Formation of Zwitterionic Micelles</b> <u>Bora Onat</u> , Vural Bütün, Sreeparna Banerjee, İrem Erel-Göktepe <i>Turkey</i>

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# Poster Presentations

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316	<b>Production of Spray Dried Calcium Phosphate-Gelatin Composite and The Impact of Cross-linking Agent on Composite Structure and Bioactivity in Simulated Body Fluid</b> <u>Tugba Basargan Ozsagioglu</u> , Gülhayat Nasun Saygili <i>Turkey</i>
317	<b>Preparation of Polycaprolactone-Polyethylene Glycol-Casein Bioblends using Spray Dryer</b> <u>Erhan Ozsagioglu</u> , Yuksel Avcibasi Guvenilir <i>Turkey</i>
318	<b>3D-Powder-Printing of Strontium Modified Magnesium Phosphate Cements for Bone Augmentation</b> Emilie März, Claus Moseke, Uwe Gbureck, Jürgen Groll, <u>Elke Vorndran</u> <i>Germany</i>
319	<b>Selection and Optimization of Hydroxyapatite and Chlorapatite Powders for 3D-printing</b> Zeinab Salary, Parastoo Parastoo Jamshidi, <u>Zuzanna Trzcińska</u> , David Grossin, Ghislaine Bertrand, Olivier Marsan, Cédric Charvillat, Imane Demnati, Moataz Moataz Attallah, Artemis Stamboulis <i>United Kingdom</i>
320	<b>Zirconia-Ceria Hydroxide Sol-Gel Synthesis: Colloid Processing and Powders Preparation for Potential Biomedical Application</b> <u>Damian Nakonieczny</u> , Zbigniew Paszenda, Tomasz Radko <i>Poland</i>
321	<b>Influence of the Colloid System pH for the Phase Composition and Morphology of Cerium Oxide Doped Zirconia Powders – Properties Evaluation</b> <u>Damian Nakonieczny</u> , Zbigniew Paszenda, Sabina Drewniak, Tomasz Radko <i>Poland</i>
322	<b>Synthesis of MTA Powder by Spray-Pyrolysis</b> Jeong-Cheol Lee, Seung-Hoon Um, Bong Kyu Choi, <u>Sang-Hoon Rhee</u> <i>Republic of Korea</i>
323	<b>Direct Fabrication of Porous Titanium Implant via 3D Printing</b> <u>Pavan Kumar Srivas</u> , Kausik Kapat, Prabhash Dadhich, Pallabi Pal Pal, Bodhisatwa Das, Santanu Dhara <i>India</i>
324	<b>Preparation of Electroconductive Titania Scaffolds for Bone Tissue Regeneration</b> <u>Inga Narkevica</u> , Jurijs Ozolins <i>Latvia</i>
325	<b>A Novel Model of Nonalcoholic Fatty Liver Disease in a 3D Liver-on-Chip Device</b> <u>Manuele Gori</u> , Maria Chiara Simonelli, Luca Businaro, Marcella Trombetta, Alberto Rainer <i>Italy</i>
326	<b>Stainless Steels Alloyed with Molybden for Medical Applications</b> <u>Victor Geanta</u> , Ionelia Voiculescu <i>Romania</i>
327	<b>New Titanium Alloys for Medical Applications</b> <u>Ionelia Voiculescu</u> , Victor Geanta <i>Romania</i>
328	<b>A Novel Pluronic/Alginate Scaffold for 3D Liver Cell Culture</b> <u>Manuele Gori</u> , Sara Maria Giannitelli, Pamela Mozetic, Marcella Trombetta, Alberto Rainer <i>Italy</i>
329	<b>As-cast Biodegradable MgCa Alloys –Structure, Mechanical and Corrosion Properties</b> <u>Sonia Boczkal</u> , Michał Karaś, Anna Kozik, Dawid Kapinos, Marzena Lech-Grega <i>Poland</i>
330	<b>Bone Tissue Engineering Using Combined Additive Manufacturing and Microtomography with FEM Verification</b> <u>Jakub Kamiński</u> , Maciej Śniechowski, Sebastian Wroński, Janusz Malinowski, Jacek Tarasiuk <i>Poland</i>

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