

Day 1 Monday 22 nd	
13:35 14:00	Registration
14:00 14:25	Welcome and Opening Ceremony Rui L. Reis & Daniel Cohn <i>FBPS2025 Organizer & FBPS Founder</i>
Session 1 Chair: Ricardo Pires	
14:25 14:50	Metabolite and peptide supramolecular polymers: from basic mechanisms to applications <u>Ehud Gazit</u> <i>Tel Aviv University, Israel</i>
14:50 15:15	Hyaluronan (HA): embracing this giant biopolymer to discover HA-based biomaterials with emergent properties <u>Helena S. Azevedo</u> <i>i3S - University of Porto, Portugal</i>
15:15 15:40	Developing “Phormulations” for Phages <u>Gareth R. Williams</u> <i>UCL School of Pharmacy, UK</i>
15:40 16:05	Rebuilding the Nervous System with Biomedical Polymers <u>Ana Paula Pêgo</u> <i>i3S - University of Porto, Portugal</i>
16:05 16:30	Coffee-Break
Session 2 Chair: Antonella Motta	
16:30 16:55	Dendrimers for Biomedical Applications <u>Helena Tomás</u> <i>CQM- University of Madeira, Portugal</i>
16:55 17:20	Engineering the stem cell niche using instructive and dynamic biomaterials <u>Alicia El Haj</u> <i>University of Birmingham, UK</i>
17:20 18:35	Welcome Cocktail

Day 2 | Tuesday 23rd

Session 3

ALLAN HOFFMAN SESSION

Chairs: Buddy Ratner & Daniel Cohn

09:00 | 09:25

The Legacy of Allan S. Hoffman and His Impact on My Thinking on Kidney Dialysis

Buddy Ratner

University of Washington, USA

09:25 | 09:50

3D printing: from the "ink" to the cardiac device

Daniel Cohn

The Hebrew University of Jerusalem, Israel

09:50 | 10:15

Engineering biopolymer-based nanotraps via molecular imprinting for target-specific sequestration

Devid Maniglio

University of Trento, Italy

10:15 | 10:40

Polymeric Nanomedicines for Targeted Cancer Immunotherapy

Horacio Cabral

University of Tokyo, Japan

10:40 | 11:05

Coffee-Break | Poster Session: Core Biomaterials, Nanomedicine & Tumor Models

Session 4

ALLAN HOFFMAN SESSION

Chairs: Buddy Ratner & Daniel Cohn

11:05 | 11:30

Silk-ink for human health: a versatile platform for precision biomaterials

Antonella Motta

University of Trento, Italy

11:30 | 11:55

Biohybrid and Fully Synthetic Polymer Hydrogels for Cell-Instructive Matrices

Carsten Werner

Leibniz Institute of Polymer Research Dresden, Germany

11:55 | 12:20

Smart Healthcare Materials and Devices for Theranostic Applications

Sei Kwang Hahn

Pohang University of Science and Technology, South Korea

12:20 | 12:45

01 - Multifunctional nanoparticles for tracking encephalitogenic cells in a multiple sclerosis model

Luis García-Fernández

Institute of Polymer Science and Technology, (ICTP), CSIC, Spain

02 - Altered interaction between stem cells and collagen in an oxidative environment

George P. Altankov

Leonardo da Vinci Center of Competence in Personalized Medicine, 3D and Telemedicine, Robotic and Minimally Invasive Surgery, Bulgaria

12:45 | 14:00

Lunch

14:00 | 14:50

Meet the Editor

Rui L. Reis & Jessica Wang

Ke Ai Publishing

Session 5	
Chair: Nuno Neves	
14:50 15:15	Piezo4Spine: Novel strategies for neural repair after spinal cord injury <u>Maria Concepción Serrano</u> <i>The Spanish National Research Council (CSIC), Spain</i>
15:15 15:40	Polypeptide-Based Nanomedicines: Enhancing Tropism and Overcoming Biological Barriers <u>Maria J. Vicent</u> <i>Prince Felipe Research Center, Spain</i>
15:40 16:05	Unconventional additive (bio)manufacturing methods for regenerative medicine <u>Yu Shrike Zhang</u> <i>Harvard Medical School, USA</i>
16:05 16:30	Coffee-Break Poster Session: Core Biomaterials, Nanomedicine & Tumor Models
Session 6	
Chair: Andrés J. García	
16:30 16:55	O4 - Engineered microcarriers for enhanced spheroid-based regeneration of diffuse cartilage lesions <u>Desiré Venegas-Bustos</u> <i>BIOFORGE Lab, University of Valladolid, Spain</i>
16:55 17:20	Advances in biomaterials as artificial extracellular matrices in in vitro tumour models <u>Joaquim Miguel Oliveira</u> <i>3B's Research Group, University of Minho, Portugal</i>
17:20 17:45	Advanced 3D Bioengineered Tumor Models to Evaluate Targeted (Nano)Therapeutics <u>Jai Prakash</u> <i>University of Twente, The Netherlands</i>
17:45 18:10	The polymer heaven for biomedical applications <u>Vasif Hasirci</u> <i>Acibadem University, Turkey</i>
18:10 18:35	Taking mRNA Therapeutic Potentials to the Next Level:Enhancing Bone Regeneration through Rational RNA Combinations <u>Elizabeth Rosado Balmayor</u> <i>RWTH Aachen University Hospital, Germany</i>

Day 3 | Wednesday 24th

Session 7
ASIAN-PACIFIC SESSION
Chair: Gilson Khang

09:00 09:25	Biomaterial-based tissue regeneration therapy based on natural self-healing potential and inflammation <u>Yasuhiko Tabata</u> <i>Kyoto University, Japan</i>
09:25 09:50	Enhancing Antibacterial Efficacy: Leveraging Stimuli-Responsive Mechanisms to Modulate Reactive Oxygen Species in Nanoparticle Design <u>Kelvin Yeung</u> <i>The University of Hong Kong, Hong Kong SAR, China</i>
09:50 10:15	Rational Polypeptide Design via Database Integration: Applications in Scaffolds and Mitochondrial Gene Delivery <u>Keiji Numata</u> <i>Kyoto University, Japan</i>
10:15 10:40	Nanozymes-armed microbes for disease treatment <u>Zhengwei Mao</u> <i>Zhejiang University, China</i>
10:40 11:05	Coffee-Break Poster Session: Hydrogels, Wound Healing & Regenerative Biology

Session 8
ASIAN-PACIFIC SESSION
Chair: Yasuhiko Tabata

11:05 11:30	Biomaterials for immunoisolation and tissue adhesion, and anti-adhesive barriers <u>Nathaniel Hwang</u> <i>Seoul National University, South Korea</i>
11:30 11:55	Elastin-based hydrogels promote wound healing by regulating the tissue immune microenvironment <u>Leping Yan</u> <i>The Seventh Affiliated Hospital of Sun Yat-sen University, China</i>
11:55 12:20	Smart Polymer Technologies for Global Health <u>Mitsuhiro Ebara</u> <i>Research Center for Macromolecules and Biomaterials, National Institute for Materials Science (NIMS), Japan</i>
12:20 12:45	Development of Functional Scaffold Biomaterials and Bioactive Molecules from Natural Resources <u>Gilson Khang</u> <i>Jeonbuk National University, South Korea</i>
12:45 14:00	Lunch

Session 9	
Chair: Nathaniel Hwang	
14:00 14:25	<p>05 - Flexible and stretchable fet-type sensors based on organic and polymeric materials <u>Joon Hak Oh</u> Seoul National University, South Korea</p> <p>06 - Rationally designed h2o2 activatable antioxidant polymer nanoparticles for diagnosis and therapy of renal ischemia/reperfusion injury <u>Dongwon Lee</u> Department of Bionanotechnology and Bioconvergence Engineering, Jeonbuk National University, South Korea</p>
14:25 14:50	<p>07 - Understanding biophysical stimuli in three-dimensional microenvironments to enhance reprogramming efficiency toward induced pluripotency <u>Deogil Kim</u> Dongguk University Department of Biomedical Engineering, South Korea</p> <p>08 - 4D Biomimetic and multi-stimuli responsive interfaces for enhanced in vitro models and regenerative medicine <u>Silvia Panseri</u> Institute of Science, Technology and Sustainability for Ceramics (ISSMC), National Research Council of Italy, Italy</p>
14:50 15:15	<p>Beyond barrier crossing: nanomedicine as a therapeutic strategy for blood-brain barrier repair in dementia <u>Giuseppe Battaglia</u> Institute for Bioengineering of Catalonia (IBEC), Spain</p>
15:15 15:40	<p>Bioelectricity in Tissue Engineering: The role of electrical stimulation and electroconductive biomaterials in macrophage function and spinal cord therapeutics <u>Michael Monaghan</u> School of Engineering, Trinity College Dublin, Ireland</p>
15:40 16:05	<p>Design of magneto-responsive, fiber-hydrogel composites to enable three-dimensional spatial and temporal control over fiber alignment <u>Julianne Holloway</u> Arizona State University, USA</p>
16:05 16:30	Coffee-Break Poster Session: Hydrogels, Wound Healing & Regenerative Biology
Session 10	
Chair: Lorenzo Moroni	
16:30 16:55	<p>Generation and clinical translation of a fibrin-agarose bioengineered human cornea generated by tissue engineering <u>Miguel Alaminos</u> University of Granada, Spain</p>
16:55 17:20	<p>Electronic Spider Silk-Mimetics for Skin-Imperceptible Bioelectronics <u>Yan Shery Huang</u> University of Cambridge, UK</p>
17:20 17:45	<p>Nature-derived, photo-actuated biomaterials for the fabrication of functional biodevices <u>Vamsi Yadavalli</u> Virginia Commonwealth University, USA</p>
17:45 18:10	<p>Multifunctional Platforms for Cell Sensing in Heterogeneous Systems <u>Loretta L. del Mercato</u> Nanotechnology Institute of National Research Council of Italy, Italy</p>
18:10 18:35	<p>Polymeric dry powder formulations of antibiotics and quorum sensing inhibitors for the treatment of lung infections <u>Elzbieta Pamula</u> AGH University of Krakow, Poland</p>

Day 4 | Thursday 25th

Session 11

Chair: Vasif Hasirci

09:00 09:25	<p>Do cells like better rock music or classic music? A sonomechanobiology journey into orchestrating tissue regeneration</p> <p><u>Lorenzo Moroni</u> Maastricht University, MERLN Institute for Technology, The Netherlands</p>
09:25 09:50	<p>Functionalized substrates and nanostructures for advanced therapies</p> <p><u>Nuno M. Neves</u> 3B's Research Group, University of Minho, Portugal</p>
09:50 10:15	<p>Smart polymers: towards future applications</p> <p><u>Nesrin Hasirci</u> Middle East Technical University (METU), Chemistry Department, Turkey</p>
10:15 10:40	<p>Engineering Vascularized Stroma for In Vitro Modeling of Human Tissues and Disease</p> <p><u>Cristina C. Barrias</u> i3S - University of Porto, Portugal</p>
10:40 11:05	Coffee-Break Poster Session: Advanced 3D Bioprinting & Marine/Sustainable Biomaterials
<p>Session 12</p> <p>Chair: Cristina C. Barrias</p>	
11:05 11:30	<p>O9 - Glycopeptide-based hydrogels as storage depots that promote vascularization</p> <p><u>Ana Rita Araújo</u> 3B's Research Group, University of Minho, Portugal</p> <p>O10 - Bioengineered microtissue constructs for dual osteogenic and angiogenic stimulation to restore bone integrity in osteoradionecrosis</p> <p><u>Christiane L. Salgado</u> i3S - University of Porto, Portugal</p>
11:30 11:55	<p>O11 - Toward microbiome models: bacteria encapsulation in interfacial polyelectrolyte complexes</p> <p><u>Rui R. Costa</u> 3B's Research Group, University of Minho, Portugal</p> <p>O12 - Engineering Regenerative Niches: Encapsulation of Stromal Cells from iPSC-derived Intestinal Organoids in Synthetic Degradable Microgels</p> <p><u>Ana Mora-Boza</u> University of Galway, Ireland</p>
11:55 12:20	<p>Engineered biomaterials for regeneration and mechanobiology</p> <p><u>Manuel Salmeron Sanchez</u> Institute for Bioengineering of Catalonia, IBEC, Spain</p>
12:20 12:45	<p>Manufacturing of Natural-Based Nano-in-Micro Hydrogels for Controlled Site Specific Delivery of Therapeutic Agents</p> <p><u>Annalisa Tirella</u> University of Trento, Italy</p>
12:45 14:00	Lunch

Session 13 JULIO SAN ROMAN SESSION Chairs: Maria Rosa Aguilar & Luis Rojo	
14:00 14:25	Bioengineered Hydrogels for Regenerative Medicine <u>Andrés J. García</u> <i>Georgia Institute of Technology, USA</i>
14:25 14:50	Stimulating Bone Regeneration and Vascularisation: Poly(Vinyl Alcohol) Hydrogel-mineral composites <u>Sanjukta Deb</u> <i>King's College London, UK</i>
14:50 15:15	Engineering of in vitro 3d bone tissue models via bioprinting technologies <u>Pio González</u> <i>CINTECX, University of Vigo, Spain</i>
15:15 15:40	Engineering cell-instructive 3D scaffolds via laser surface microstructuring <u>Luis Diaz-Gomez</u> <i>University of Santiago Compostela, Spain</i>
15:40 16:05	Ternary Multilayer Systems for Programming Cell Behaviour <u>Thomas Groth</u> <i>Martin Luther University Halle-Wittenberg, Germany</i>
16:05 16:30	Coffee-Break Poster Session: Advanced 3D Bioprinting & Marine/Sustainable Biomaterials
Session 14 JULIO SAN ROMAN SESSION Chairs: Maria Rosa Aguilar & Luis Rojo	
16:30 16:55	Engineering Complex Coacervation to Obtain Functional Biomolecular Condensates Through Recombinant Polypeptides <u>José Carlos Rodríguez-Cabello</u> <i>University of Valladolid, Bioforge Lab, LaDIS, CIBER-BBN, Spain</i>
16:55 17:20	Self-assembled nano-drug delivery systems <u>Alejandro Sosnik</u> <i>Israel Institute of Technology, Haifa, Israel</i>
17:20 17:45	Multiresponsive polymer nanoparticles for mucosal drug delivery <u>Marcelo Calderón</u> <i>POLYMAT, Applied Chemistry Department, Faculty of Chemistry, University of the Basque Country (UPV/EHU), Spain</i>
17:45 18:10	Innovative hydrogel platforms for controlled release in regenerative medicine <u>Luis Rojo</u> <i>Institute of Polymer Science and Technology, (ICTP), CSIC, Spain</i>
18:10 18:35	Biomaterials at the frontier of biomedical innovation: a legacy of scientific excellence and translational impact <u>Maria Rosa Aguilar</u> <i>Institute of Polymer Science and Technology, (ICTP), CSIC, Spain</i>
20:00	Conference Dinner

Day 5 | Friday 26th

Session 15

Chair: Miguel Oliveira

09:00 | 09:25

Helen Lu
Columbia University, USA

09:25 | 09:50

Biofunctional nanostructured biomaterials aiming target therapies
Albino Martins
3B's Research Group, University of Minho, Portugal

09:50 | 10:15

Polymeric and lipid-polymer drug delivery systems for cell-specific modulation in musculoskeletal disorders
Patricia Diaz-Rodriguez
University of Santiago de Compostela, Spain

10:15 | 10:40

Exploring light-based biofabrication of norbornene-functionalized polymers for recreation of cell microenvironments
Julia Fernández Pérez
TU Wien, Austria

10:40 | 11:05

Coffee-Break

Session 16

Chair: José Carlos Rodríguez-Cabello

11:05 | 11:30

Marine-origin biopolymers as constitutive elements of biomaterials: a blue biotechnology contribution to advanced therapies
Tiago H. Silva
3B's Research Group, University of Minho, Portugal

11:30 | 11:55

Closing Ceremony
Rui L. Reis & Daniel Cohn
FBPS2025 Organizer & FBPS Founder