



PROGRAM

WELCOME

Dear Colleagues,

It is our great pleasure to invite you to attend the International Conference on Biomaterials & Regenerative Medicine BioREMEDI'2025, on October 16-18, 2025. The conference will take place in Oradea, one of the major Romanian cities.

The aim of this event is to bring together scientists from biomaterials and tissue engineering research with clinicians from medical fields who use in clinical practice the implants and prostheses made from various biomaterials.

Clinicians from different specialties (dentistry, orthopedics, neurosurgery, ophthalmology, cardiovascular surgery, general and aesthetic surgery) are invited to attend the conference in order to present their results on the clinical performance of current medical devices and debates on the translation of biomaterials and tissue engineering research into clinical practice.

Round table discussions intended to promote interdisciplinary research projects will be organized.

We look forward to seeing you all in Oradea!

Yours sincerely,

Conference Presidents

Prof. Bodog Florian

Prof. Antoniac Iulian

ORGANIZERS



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BIOREMED 2025 - CONFERENCE INFORMATION

Topics

- Regenerative Medicine
- Metallic Biomaterials
- Bioceramics
- Polymers
- Composite Biomaterials
- Natural biomaterials
- Biocompatibility
- Biomechanics
- Biotribology
- Surface Engineering
- Adhesion
- Clinical aspects
- Biomaterials Application in Clinical Practice
- Modelling and Simulation
- Interactions cells-biomaterials
- Tissue Engineering
- Molecular Biology
- Bioengineering
- Medical Engineering
- Standards
- Medical Ethics
- Dental biomaterials
- Surgical Techniques



PROGRAM

Section Sponsors



RO-MEGA CONTROL



October 16th

16.00-20.00 Participant registration

October 17th

09.00-09.30 Opening Ceremony

09.30-11.00 Plenary Session A

09.30-10.15

PS.1. Development drug delivery system with biomaterials for capsule drug forms

Gultekin GOLLER

Istanbul Technical University, Türkiye

10.15-11.00

PS.2. Recent advances in polymeric membrane materials for biomedical applications

Stefan Ioan VOICU

National University of Science and Technology Politehnica Bucharest, Romania

11.00-11.30 Coffee break

11.30-13.30 Scientific Sessions A

11.30-11.50

K1. Synergistic Physical / Chemical / Biologic Effects in Medical Microfluidic Devices

Cătălin POPA

Technical University of Cluj-Napoca, Romania

11.50-12.10

K2. Green Hydrothermal Assisted Sol-Gel Synthesis of Bioactive Glasses for Regenerative Medicine

Nermin DEMİRKOL

Kocaeli University, Türkiye

12.10-12.30

K3. Updates on Metallic Nanoparticles Applications in Bioremediation, Biomedicine and Biosensing

Simona CAVALU

Faculty of Medicine and Pharmacy, University of Oradea, Romania

12.30-12.50

K4. Thermophysical Properties of Dental and Biomedical Materials

Marian MICULESCU

National University of Science and Technology POLITEHNICA of Bucharest, Romania

12.50-13.00

O1. Crown ethers-functionalized polymeric membranes for biomedical applications

Madalina OPREA, Andreea Madalina Pandele, Adrian Ionut Nicoara, Iulian Vasile Antoniac, Stefan Ioan Voicu

National University of Science and Technology Politehnica Bucharest, Romania

13.00-13.10

O2. Self-adaptable microneedles patch for pain management

Florina ILIESCU, Amarachi R. Osi, Georgeta L. Gheorghiu, Ciprian Iliescu

National University of Science and Technology Politehnica Bucharest, Romania

13.10-13.20

O3. Nanomaterials employed in biosensing and biofuel cells with applications in biomedical field

Luminita FRITEA, Florin Banica, Traian Costea, Liviu Moldovan, Simona Cavalu, Andrew J. Gross, Karine Gorgy, Alan Le Goff, Serge Cosnier

University of Oradea, Romania

13.20-13.30 Discussions & Conclusions of Scientific Session A

13.30-15.00 Lunch

15.00-17.00 Scientific Sessions B

15.00-15.20

K5. Artificial Intelligence in Dentistry between Trend and Necessity

Horia MANOLEA

University of Medicine and Pharmacy of Craiova, Romania

15.20-15.40

K6. The Assessment of Ceramic Dental Materials during the Treatment of Severe Adult Cleft Palate

Anca PORUMB

University of Oradea, Romania

15.40-16.00

K7. Biomedical Potential of MgB₂

Dan BATALU

National University of Science and Technology POLITEHNICA of Bucharest, Romania

16.00-16.20

K8. Iron-based Alloys for Medical Applications: Results and Perspectives on the use of Biodegradable Materials in Modern Implantology

Nicanor CIMPOESU

Gheorghe Asachi Technical University of Iasi, Romania

16.20-16.30

O4. Natural extract in oral medicine

Iulia MUNTEAN, Alexandra Roi, Rusu Laura-Cristina

Victor Babes University of Medicine and Pharmacy, Timisoara, Romania

16.30-16.40

O5. Enhancing Clear Aligner Therapy Outcomes Through Advanced Materials and Features

Stelian-Mihai-Sever PETRESCU, Radu Mircea Pisc, Horia Octavian Manolea
University of Medicine and Pharmacy, Craiova, Romania

16.40-17.00 Discussions & Conclusions of Scientific Session B

17.00-17.30 Coffee break

17.30-19.30 Scientific Sessions C

17.30-17.50

K9. Metal-on-Metal – an Unfairly Rejected Couple

Dan Cristian GRECU

University of Medicine and Pharmacy Craiova, Romania

17.50-18.10

K10. Current uses and Future Prospects of Various Stent Types in Surgical Practice

Sebastian GRADINARU

Titu Maiorescu University, Faculty of Medicine, Bucharest, Romania

18.10-18.30

K11. Chitosan Tamponade in the Management of Acute Postpartum Hemorrhage

Alin BODOG

University of Oradea, Faculty of Medicine and Pharmacy, Oradea, Romania

18.30-18.40

O6. Biomaterials in Pediatric Orthopedics: The Importance of Elastic Nails and the Use of Plates, Locked Nails, and Kirschner Wires

Alexandru Nicolae PIRVAN, Felicia Manole, Aurel Mohan, Alexia Manole

University of Oradea, Romania

18.40-18.50

O7. Artificial Ovary: Biomaterial Scaffolds and Cellular Strategies for Ovarian Tissue Engineering

Anca HUNIADI, Murvai Viorela Romina, Goman Marius, Zaha Ioana, Ștefan Liana, Sorian Andreea, Florea Mihai, Naghyi Petronela, Kiss Magdalena, Murvai Gelu Florin, Galiș Radu

University of Oradea, Romania

18.50-19.00

O8. Biologic Therapies for Gonadal Rejuvenation Using Platelet-Rich Plasma and Stem Cells: An Evidence-Based Synthesis of Ovarian and Testicular Regeneration

Viorela – Romina MURVAI, Huniadi Anca, Goman Marius, Zaha Ioana, Ștefan Liana, Sorian Andreea, Florea Mihai, Naghyi Petronela, Kiss Magdalena, Murvai Gelu Florin, Galiș Radu

University of Oradea, Romania

19.00-19.10

O9. The use of Hem-o-lok ® Polymer - Ligation System and of the one-way threads in minimal invasive reconstructive urological surgery

Bogdan-Ovidiu Feciche, Mihail-Claudius Berechet, Calin-David Buzlea, Simona Mîrț, Vlad Barbos, Silvestru Alexandru Big
University of Oradea, Romania

19.10-19.30 Discussions & Conclusions of the Scientific Session C

19.30-20.30 SRB General Assembly

October 18th

09.00-10.30 Plenary Session B

09.00-09.45

PS.3. Microphysiological systems for drug screening

Ciprian ILIESCU

National University of Science and Technology Politehnica Bucharest, Romania

09.45-10.30

PS.4. Current and Emerging Antibacterial Strategies to Control Periprosthetic Joint Infection

Julietta RAU

Institute of the Structure of Matter of the Italian National Research Council CNR, Rome, Italy

10.30-11.00 Coffee break

11.00-13.00 Scientific Sessions D

11.00-11.20

K12. Customized Polyetheretherketone (PEEK) Cranial Repair System Implants used in Cranioplasty after Severe Traumatic Brain Injury (TBI).

George Aurel MOHAN

University of Oradea, Faculty of Medicine and Pharmacy, Oradea, Romania

11.20-11.40

K13. Interdisciplinary Collaboration between Biomaterials and Neurosurgery in the Framework of Brain IT Project

Vicentiu Mircea SACELEANU

Lucian Blaga University of Sibiu, Romania

11.40-12.00

K14. Biocompatibility of Mg Biodegradable Alloys and their Importance in the Medical Applications and Material Science

Bogdan ISTRATE

Gheorghe Asachi Technical University of Iasi, Romania

12.00-12.20

K15. Biomedical Titanium Alloys: From Traditional Processing to Additive Manufacturing

Madalina Simona BALTATU

Gheorghe Asachi Technical University of Iasi, Romania

12.20-12.30

O10. Social impact and benefits of personalized cranioplasty in post-severe TBI decompressive craniectomies - Case report.

Nicu Adrian GHIURAU, Mohan G. Aurel, Vlad S. Valentin, Herciu Alexandru

University of Oradea, Romania

12.30-13.00 Discussions & Conclusions of the Scientific Session D

13.00-14.30 Lunch

14.30-16.30 Scientific Sessions E

14.30-14.50

K16. Comprehensive Prosthetic Planning in Implant Based Oral Rehabilitations

Marius MANOLE

Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania

14.50-15.10

K17. Engineering Hydrogels for Oral Healthcare: Design and Progress

Marioara MOLDOVAN

Babeş Bolyai University, Raluca Ripan Institute of Research in Chemistry, Cluj-Napoca, Romania

15.10-15.30

K18. Innovative Biomaterials in Oral Implantology: Advances, Challenges, and Clinical Perspectives

Tareq HAJAJ

Victor Babes University of Medicine and Pharmacy Timisoara, Romania

15.30-15.40

O11. Formation and Characterization of Ti–Al Intermetallic and Oxide Layers on Ti6Al4V for Hydroxyapatite Adhesion Enhancement

Stefan LAPTOIU, Marian MICULESCU, Diana ENESCU, Iulian ANTONIAC

National University of Science and Technology Politehnica Bucharest, Romania

15.40-15.50

O12. Gemmoderivates for dentistry

Ruxandra-Ilinca MATEI

University of Oradea, Romania

15.50-16.00

O13. Integrating semiconductor-based heterostructures in next-generation optoelectronic devices

Eliseia PETRE, Marian ZAMFIRESCU, Marian MICULESCU, Raluca IVAN, Luiza STINGESCU, Nicu SCARIŞOREANU

National University of Science and Technology Politehnica Bucharest, Romania

16.00-16.30 Discussions & Conclusions of the Scientific Session E

16.30-18.30 Discussions & Conclusions of the **POSTER SESSION**

16.30-18.30 Workshop –**New Technological Approaches in Dental Technique**

– **NTA ERASMUS+ Professional and Educational Training Program 2023-1-RO01-KA220-VET-000157812.**

20.00-24.00 Gala Dinner

POSTER SESSION (e-poster)

P1. Evaluation of the surface properties of three ceramic materials processed via CAD/CAM

Boanca Cristian¹, Antoniac Aurora², Kamel Earar¹, Antoniac Iulian^{2,3}, **Corneschi Iuliana**², Anca Maria Fratila^{4,5}, Gabriela Mitariu⁴

¹Dunarea de Jos University of Galati, Romania; ²National University of Science and Technology POLITEHNICA Bucharest, Romania; ³Academy of Romanian Scientists, Bucharest, Romania; ⁴Lucian Blaga University of Sibiu, Romania; ⁵Military Clinical Emergency Hospital of Sibiu, Romania

P2. Comparative evaluation of the surface properties of different inert ceramic-based restorations

Boanca Cristian¹, Miculescu Florin², **Popescu Larisa**², Kamel Earar¹, Antoniac Iulian^{2,3}, Anca Maria Fratila^{4,5}

¹Dunarea de Jos University of Galati, Romania; ²National University of Science and Technology POLITEHNICA Bucharest, Romania; ³Academy of Romanian Scientists, Bucharest, Romania; ⁴Lucian Blaga University of Sibiu, Romania; ⁵Military Clinical Emergency Hospital of Sibiu, Romania

P3. Physical theory of magnetic hyperthermia in cancer treatment

Gheorghe Paltanea¹, Veronica Manescu (Paltanea)¹, Aurora Antoniac¹, Iulian Antoniac¹, Iosif Vasile Nemoianu¹, Costel Paun², Aurel Mohan³

¹National University of Science and Technology Politehnica Bucharest, Romania; ²National Institute for Research and Development in Microtechnologies IMT-Bucharest, Bucharest, Romania; ³University of Oradea, Romania

P4. Mg-Zn biodegradable alloy as a suitable material for bone defect

Veronica Manescu (Paltanea)¹, Iulian Antoniac¹, Aurora Antoniac¹, Alexandru Streza¹, Sebastian Gradinaru², Maria-Cristina Moraru³, Bogdan Sevastre³, Marius Manole⁴

¹National University of Science and Technology Politehnica Bucharest, Romania; ²Titu Maiorescu University, Bucharest, Romania; ³University of Agricultural Sciences and Veterinary Medicine (USAMV), Cluj-Napoca, Romania; ⁴Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania

P5. Experimental Evaluation of the Surface Properties of Osteosynthesis Screws used in Orthopedic Traumatology

Mihai Alexandru Cordunianu¹, Iulian Antoniac², Alina Georgiana Cordunianu³

^{1,2}Titu Maiorescu University, Bucharest, Romania; ²National University of Science and Technology Politehnica Bucharest, Romania

P6. Self-healing microcapsules loaded with hydroxyapatite for teeth remineralization and repair

Gertrud-Alexandra Paltinean¹, Maria Amalia Taut², Ioan Petean³ Laura Silaghi-Dumitrescu¹, Marioara Moldovan¹, Ioan Ardelean²

¹*Raluca Ripan Institute for Research in Chemistry, Babes-Bolyai University, Cluj-Napoca, Romania;* ²*Technical University of Cluj-Napoca, Romania;* ³*Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University, Cluj-Napoca, Romania.*

P7. Nanostructured Zn/Ti–Graphene Hydrogels: A Promising Platform for Photodynamic Therapeutics

Stanca Cuc, Codruța Saroși, Laura Silaghi-Dumitrescu, Miuța Filip, Marioara Moldovan
Babeș Bolyai University, “Raluca Ripan” Institute of Research in Chemistry, Cluj-Napoca, Romania

P8. Degradation of Poly(Lactic Acid) Nanocomposites Reinforced with Inorganic Nanoparticles

Andrei Moldovan¹, Ioan Saroși¹, Stanca Cuc², Rami Doukeh³, Gabriel Furtos², Ovidiu Nemeș¹
¹*Technical University of Cluj-Napoca, Romania;* ²*Babes Bolyai University, “Raluca Ripan” Institute of Research in Chemistry, Cluj-Napoca, Romania;* ³*Petroleum-Gas University of Ploiesti, Romania*

P9. Analysis of Structure and Mechanical Behavior of PLA-Based Polymer Films

Ioan Sarosi¹, Andrei Moldovan¹, Alexandra Paltinean², Filip Miuta², Rami Doukeh³, Ovidiu Nemes¹

¹*Technical University of Cluj-Napoca, Romania;* ²*Babes Bolyai University, Raluca Ripan Institute of Research in Chemistry, Cluj-Napoca, Romania;* ³*Petroleum-Gas University of Ploiesti, Romania*

P10. Materials characterization through computed tomography as a non-destructive technique

Iuliana Corneschi, Aurora Antoniac, **Robert Bololoi**, Larisa Popescu, Iulian Antoniac
National University of Science and Technology POLITEHNICA Bucharest, Romania

P11. The evolution of titanium alloys for medical implant applications

Pruteanu Andrei¹, Mădălina Simona Bălțatu¹, Tofan Mihai¹, Ghiculescu Ion¹, Andrei Victor Sandu^{1,2}, Vizureanu Petrică^{1,2}

¹*Gheorghe Asachi Technical University of Iasi, Romania;* ²*Academy of Romanian Scientists, Bucharest, Romania*

P12. Titanium Alloys in Implantology: From Ti6Al4V to Next-Generation Biomedical Materials

Tofan Mihai¹, Peruc Alexandru Codruț¹, Ghiculescu Ion¹, Sandu Andrei Victor^{1,2}, Vizureanu Petrică^{1,2}

¹*Gheorghe Asachi Technical University of Iasi, Romania;* ²*Academy of Romanian Scientists, Bucharest, Romania*

P13. Using Additive manufacturing in obtaining scaffolds from biomaterials for use in dental applications

Volocaru Ioana-Ilinca¹, Munteanu Corneliu^{1,2 *}, Istrate Bogdan¹, Lupu Fabian¹, Stan Ioana-Alexandra¹, Nastasache Gabriela¹

¹*Gheorghe Asachi Technical University of Iasi, Romania;* ²*Technical Science Academy Romania, Bucharest, Romania*

P14. Microstructural and Corrosion Behavior of Mg–Ca–Mn–xGd Biodegradable Alloys for Biomedical Applications

Istrate Bogdan¹, Munteanu Corneliu^{1,2*}, **Petrovan Titiana**¹, Fabian Lupu-Cezar¹, Cimpoesu Ramona^{1*}, Volocaru Ioana¹

¹*Gheorghe Asachi Technical University of Iasi, Romania;* ²*Technical Science Academy Romania, Bucharest, Romania*

P15. Evaluation of the Corrosion Behavior of Two Dental Alloys Under Different Oral Exposure Conditions

Anca FRATILA¹, Alberto RICO-CANO², Julia MIRZA-ROSCA², Adriana SACELEANU¹

¹*Lucian Blaga University of Sibiu, Romania;* ²*University of Las Palmas de Gran Canaria, Spain.*

P16. In vitro biocompatibility assay of MRI202S and ZMX100

Alexis Vasilis Sacarelis¹, Iulian Vasile Antoniac², Sorin Radu Fleaca¹

¹*Lucian Blaga University of Sibiu, Romania;* ²*National University of Science and Technology POLITEHNICA Bucharest, Romania*

P17. Development of a test stand for verifying the wear of friction materials in automobile brake pads

Lupescu Ștefan Constantin, **Severin Traian**, Tămășag Ioan

Ștefan cel Mare University of Suceava, Romania

P18. Review of Orthopedic Implants based on Mg-Ca-Zn

Lupescu Ștefan Constantin, Cerlincă Delia Aurora, Tamașag Ioan

Ștefan cel Mare University of Suceava, Romania

P19. Development of new composite biomaterials based on ceramic matrix for bone substitute fabrication

Cîrdei Gh. Cozmina - Maria, Paltanea (Manescu) Veronica, Miculescu Florin, Antoniac Aurora, Corneschi Iuliana, Ciocoiu Robert, Trante Octavian, Antoniac Iulian

National University of Science and Technology Politehnica Bucharest, Romania

P20. Beyond Biocompatibility: Occupational Risk Assessment in Biomaterials and Regenerative Medicine

Oana Roxana Chivu¹, Alina Trifu², Andrei Iacob¹, Marinela Marinescu¹, Larisa Butu¹, Roland Moraru³, Catalina Enache¹

¹*National University of Science and Technology POLITEHNICA Bucharest, Romania;* ²*National Research-Development Institute for Occupational Safety INCDPM Alexandru Darabont Bucharest, Romania;* ³*University of Petroșani, Romania*

P21. The use of natural polymers and phospholipids for the controlled release of phytocompounds with therapeutic interest from *Stellaria media* (L.) Vill.

Florina (Miere) Groza¹, **Luminita Fritea**¹, Angela Antonescu¹, Simona Cavalu¹, Simona Ioana Vicas²

¹*Faculty of Medicine and Pharmacy, University of Oradea, Romania;* ²*Faculty of Environmental Protection, University of Oradea, Romania.*

P22. Evaluation of Platelet-Rich Plasma (PRP) Therapy in Knee Arthroplasty: Clinical and Functional Outcomes

Silviu Valentin Vlad¹, Timea Claudia Ghitea²

¹*Orthopedic Department, County Clinical Emergency Hospital Oradea, Romania;* ²*Pharmacy Department, Faculty of Medicine and Pharmacy, University of Oradea, Romania*

P23. SPINCARE TECHNOLOGY IN THE TREATMENT OF ATONIC WOUNDS

Sandor Mircea¹, **Horgos Maur Sebastian**², Borza Ioan Lucian³, Huniadi Anca⁴, Cheregi Cornel Dragos⁵

¹*Department of Surgical Disciplines, Faculty of Medicine and Pharmacy, University of Oradea, Romania;* ²*Department of Surgical Disciplines, Faculty of Medicine and Pharmacy, University of Oradea, Romania;* ³*Department of Morphological Disciplines, Faculty of Medicine and Pharmacy, University of Oradea, Romania;* ⁴*Department of Surgical Disciplines, Faculty of Medicine and Pharmacy, University of Oradea, Romania;* ⁵*Department of Surgical Disciplines, Faculty of Medicine and Pharmacy, University of Oradea, Romania*

P24. Reducing fixed orthodontic treatment by correctly sequencing the use of TiNb and NiTi archwires

R.M. Pisc^{1,2}, A.M. Rauten², S.M.S. Petrescu^{1,2}, H.O. Manolea^{1,3}

¹*Department of Dental Materials, Faculty of Dental Medicine, University of Medicine and Pharmacy of Craiova, Romania*

²*Department of Orthodontics, Faculty of Dental Medicine, University of Medicine and Pharmacy of Craiova, Romania*

³*Department of Prosthodontics, Faculty of Dental Medicine, University of Medicine and Pharmacy of Craiova, Romania*

P25. Knowledge and New Trends in Obtaining Metal Prosthetic Structures – Systematic Review

Popa Cătălin, Radu Rica, Daniel Tirtea, Alina Robu, Miruna Anghel, Petre Marășescu, Horia Manolea

Department of Prosthesis Technology, University of Medicine and Pharmacy of Craiova

