

BIOREMED2019

**International Seminar on
Biomaterials and Regenerative
Medicine**



**September 26-28, 2019
Craiova, Romania**



Invited Plenary Speakers

September 26th

09.00-10.30 **Invited Plenary Speakers Session I (Art Museum)**

CHAIRS: Iulian Antoniac, Julietta Rau

09.00-09.45

Yasuhiko Tabata - *Institute for Frontier Life and Medical Sciences, Kyoto University, Japan*

Biomaterials Technology Indispensable for Regenerative Medicine

09.45-10.30

Corrado Piconi – *Institute for the Science and Technology of Ceramics, National Research Council (ISTEC-CNR), Faenza, Italy*

Metal-Free Implantology: from Nacre to Ceramic Composites

11.00 – 13.00 **Invited Plenary Speakers Session II (Art Museum)**

CHAIRS: Anna Tampieri, Horia Manolea

11.00-11.30

Julietta V. Rau - *Consiglio Nazionale delle Ricerche, Istituto di Struttura della Materia (CNR-ISM), Rome, Italy*

Antibacterial and Bioactive materials for Biomedical Implant Applications

11.30-12.00

Iulian Antoniac - *University Politehnica of Bucharest, Romania*

Biodegradable Magnesium Alloys - From Raw Materials to Medical Devices

12.00-12.30

Anna Tampieri - *National Research Council, Institute of Science and Technology for Ceramics: ISTEC-CNR, Faenza, Italy*

Bioinspired mineralization process to produce hybrid magnetic scaffolds tuning tissue regeneration process

12.30-13.00

Oana Gîngu - *University of Craiova, Romania*

Powder metallurgy – a versatile technology for the biomaterials processing in bulk state, coatings or granules.

September 27th

11.00-13.00 Invited Plenary Speakers Session III (UMF 310)

CHAIRS: Corrado Piconi, Florin Miculescu

11.00 – 11.30

Mauro Alini - *AO Research Institute, Davos Platz, Switzerland.*
Hyaluronan Hydrogel Platform for Musculoskeletal Regeneration

11.30-12.00

Ilaria Cacciotti - *University of Rome "Niccolò Cusano", Rome, Italy*
Biomimetic and multifunctional composites as platforms for regenerative medicine: from the material formulation to the supports realization

12.00-12.30

Gilson Khang - *Chonbuk National University (CBNU), Korea*
Regeneration of Retina Pigment Epithelium by Hydrogel and Cells

12.30-12.50

Liliana Verestiuc - *"Grigore T. Popa" University of Medicine and Pharmacy Iasi, Romania*
Mucoadhesive Polymeric Biomaterials – Advantages, Challenges and In Vitro Models for Testing

12.50-13.10

Răzvan Ghinea - *University of Granada, Spain*
Optical Properties of Dental Biomaterials and Bio-Engineered Tissues

13.10-13.30

Maha Daou - *Saint Joseph University, Beirut, Lebanon*
Fatigue and failure of dental materials

SCIENTIFIC SESSIONS

(KEY-NOTE & ORAL PRESENTATIONS, E-POSTERS)

September 26th

15.00-17.00 Scientific Session A1 (UMF 310)

CHAIRS: Andreea Didilescu, Simona Stoleriu

Keynote Speakers – Conferences

Manolea Horia - *University of Medicine and Pharmacy Craiova, Romania*

Choosing the right dental material. Why do we need research in the medical school

Didilescu Andreea - *“Carol Davila” University of Medicine and Pharmacy Bucharest, Romania*

The effect of calcium silicate-based materials on dentin bridge formation

Oral Presentations

Mărășescu Petre - *University of Medicine and Pharmacy Craiova, Romania*

Esthetic dental biomaterials wear

Stoleriu Simona - *University of Medicine and Pharmacy “Grigore T. Popa”, Iași, Romania*

Effect of corrosion and abrasion on surface characteristics of composite resins used for direct restorations

Nicolicescu Claudiu - *University of Craiova, Romania*

Biomaterials wear mechanisms

Tărăță Daniela - *University of Craiova, Romania*

Modern methods of investigating the structure of hard dental tissues

Rică Radu - *University of Medicine and Pharmacy Craiova, Romania*

Biocompatibility evaluation of new materials based on zirconia using in vivo methods

Posters

Baltes Liana Sanda - *Transilvania University of Brasov, Romania*

Comparative study of different Ni-Cr dental materials for casting dental crowns and bridges

Jercan Alexandra - *University Politehnica of Bucharest, Romania*

Effect of the Casting Technologies on the Microstructural Characteristics of the Dental Applications

17.30-19.00 Scientific Session A2 (UMF 310)

CHAIRS: Mihaela Țuculină, Alexandru Andrei Iliescu

Keynote Speakers - Conferences

Țuculină Mihaela - *University of Medicine and Pharmacy Craiova, Romania*

The correlations between clinic evolution of the teeth treated by indirect capping hibryd and the new dentine genesis process

Porumb Anca - *University of Oradea, Romania*

Professional dental cleaning effect on veneers and natural teeth after propolis ethanolic extract treatment

Oral Presentations

Porumb Anca - *University of Oradea, Romania*

Sandblasting efficiency on red wine stains from the dental enamel

Staicu Ionela Elisabeta - *University of Medicine and Pharmacy of Craiova, Romania*

The biomechanical consequences of strip perforation caused by the enlargement of the root canal

Posters

Marinescu Iulia Roxana - *University of Medicine and Pharmacy of Craiova, Romania*

Root resorption: panoramic radiography features

Mitruț Ioana - *University of Medicine and Pharmacy of Craiova, Romania*

Hydrogel-Based Calcium Fructoborate: The Applications in Oral Health

Drăghici Emma - *University of Medicine and Pharmacy of Craiova, Romania*

Esthetic rehabilitation of the smile with lithium disilicate all- ceramic restorations

Fărcaș-Berechet Cristina-Mihaela - *University of Medicine and Pharmacy of Craiova, Romania*

The effect of the calcium hydroxide in the treatment of apical periodontitis in patients with Diabetes Mellitus – Case report

Purcărea Marina - *University of Medicine and Pharmacy of Craiova, Romania*

Dental Bleaching – A Literature Review

Ciavoi Gabriela - *University of Oradea, Romania*

The Ethics of Dental Bleaching

Ciavoi Gabriela - *University of Oradea, Romania*

Biocompatibility of acrylic mobile prosthetic versus elastic mobile prosthetic

September 26th

15.00-17.00 Scientific Session B1 (UMF 311)

CHAIRS: Florin Miculescu, Dan Grecu

Keynote Speakers – Conferences

Miculescu Florin - *University Politehnica of Bucharest, Romania*

Sustainable Technologies for Bone Reconstruction Ceramic Biomaterials Derived from Natural Sources and Porogen Agents

Tarniță Daniela - *University of Craiova, Romania*

Numerical Simulations and Finite Element Analysis of Contact Stresses in Normal, Osteoarthritic and Orthotic Knee

Oral Presentations

Grecu Alexandru - *University of Medicine and Pharmacy of Craiova, Romania*

Bone healing augmented with platelet concentrate

Iliuță Daniel - *University of Medicine and Pharmacy of Craiova, Romania*

Methods of Virtual Prototyping Applied to Specific Orthopedic Systems

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

Enhanced implant osseointegration by Tibolone, Alendronate and Simvastatin, in a rat model

Anușca Dan - *University of Medicine and Pharmacy of Craiova, Romania*

The role of the antibiotic impregnated mineral osseous graft in the primary mechanical and infectious stability of the total hip arthroplasty

Călin Dan Cosmin - *University of Medicine and Pharmacy of Craiova, Romania*

The Model of an Experimental Device for Determining the Loads in the Prosthetic Joint of the Hip

Posters

Adam Răzvan - *“Elias” Emergency University Hospital, Bucharest, Romania*

Magnesium alloy's influence on bone healing (callus formation)

Pană Cristina Floriana - *University of Craiova, Romania*

Active corrective corset with smart fluid for spine disorders

Vladu Cristian Ionel - *University of Craiova, Romania*

Controlable prosthetics smart fluid based

17.30-19.00 Scientific Session B2 (UMF 311)

CHAIRS: Mariana Ioniță, Daniela Tarniță

Keynote Speakers - Conferences

Ioniță Mariana - *University Politehnica of Bucharest, Romania*

3D Polymer-Graphene Biomaterials for Bone Tissue Regeneration

Raiciu Anca Daniela - *“Titu Maiorescu” University, Bucharest, Romania*

The action of gemotherapy in certain types of metabolic diseases

Oral Presentations

Tarniță Daniela - *University of Craiova, Romania*

An Overview of the Properties and Orthopaedic Applications of Shape Memory Alloys

Lăzărescu Grigore - *University of Medicine and Pharmacy of Craiova, Romania*

Bypassing critical anatomical structures as an MIS (minimal invasive surgery) approach.

Ti2 bicortical implants and intra oral welding. A case report.

Ciucă Eduard – *University of Medicine and Pharmacy of Craiova, Romania*

Versatility of ‘sticky bone’ in bone reconstruction

Posters

Ciurezu Leonard - *University of Craiova, Romania*

Biocomposites for alloplastic bone grafts processed by the medium pressure injection moulding

Dascălu Catalina-Andreea - *University Politehnica of Bucharest, Romania*

Development of Biocompatible Polymer-Ceramic Film Structures as Interface in Guided Bone Regeneration

Sima Gabriela - *University of Craiova, Romania*

From alloplastic cortical to trabecular hard tissue grafts made of biocomposites by the powder metallurgy technology

Milea Claudia - *University Politehnica of Bucharest, Romania*

Biodegradable Magnesium Matrix Composites for Bone Tissue Engineering

Antoniuc Aurora - *University Politehnica of Bucharest, Romania*

Characterization and biodegradation behavior of new collagen/hydroxyapatite/magnesium composites for bone tissue engineering

September 27th

8.30-10.30 Scientific Session A3 (UMF 310)

CHAIRS: Ondine Lucaciu, Sanda Mihaela Popescu

Keynote Speakers - Conferences

Lucaciu Ondine - *"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania*

The benefits of adopting computer-guided implant surgery

Manole Marius - *"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania*

The importance of temporary restorations on dental implants

Oral Presentations

Popescu Sanda Mihaela - *University of Medicine and Pharmacy of Craiova, Romania*

Biomaterials for socket grafting

Iliescu Alexandru Andrei - *University of Medicine and Pharmacy Craiova, Romania*

Dynamics of thermal changes in compact bone during osteotomy for dental implant placement: an *in vitro* study

Baciu Sorana - *"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania*

Comparative analysis of marginal adaptation evaluation methods- three dimensional digital scanning versus Scanning Electron Microscopy

Vasiliu Roxana Diana - *"Victor Babes" University of Medicine and Pharmacy Timisoara, Romania*

Evaluation of optical properties and surface roughness of dental restorative CAD/CAM materials after immersion in artificial saliva

Posters

Țogoe Marius Mihai - *"Victor Babes" University of Medicine and Pharmacy Timisoara, Romania*

Treatment of pulp gangrene and complications of the periapical parodontium 1 Year Recall Evaluation

Stan Adrian - *"Victor Babes" University of Medicine and Pharmacy Timisoara, Romania*

Evaluation of dental composite interface using confocal laser scanning microscopy

Rățiu Cosmin Constantin - *"Victor Babes" University of Medicine and Pharmacy Timisoara, Romania*

New concepts in implant bone oral rehabilitation: a titanium structures approach

Timiș Lucia - *"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania*

Evaluation of Bond Strength of Four Different Root Canal Sealers

15.00-17.00 Scientific Session A4 (UMF 310)

CHAIRS: Meda Lavinia Negruțiu, Cosmin Sinescu

Keynote Speakers - Conferences

Negruțiu Meda Lavinia - *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Applications of Magnetic Nanoparticles in Dentistry

Sinescu Cosmin - *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Let's talk about new trends in dental impressions

Oral Presentations

Ilici Roxana Romanita - *“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania*

Materials and technologies to enable minimally invasive dentistry

Crăciunescu Emanuela Lidia - *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Side Effects of Dental Bleaching

Pop Daniela Maria - *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Noninvasive Investigation of Thermoplastic Polymer Fixed Partial Prosthesis

Rominu Mihai - *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Impression Materials: Incompatibilities. A Literature Study

Cojocaru Melania - *University of Medicine and Pharmacy of Craiova, Romania*

Platelet Rich Fibrin in Periodontal Regeneration

17.30 - 19.00 Scientific Sessions A5 (UMF 310)

CHAIRS: Earar Kamel, Marius Manole

Keynote Speakers - Conferences

Earar Kamel – *Dunarea de Jos University of Galati*

Current Approaches in Fixed Prosthesis With Zirconia Ceramic Support

Constantinescu Florin Eugen - *University Politehnica of Bucharest, Romania*

True bone regeneration with the use of β -TCP material

Oral Presentations

Matei Ruxandra Ilinca - *University of Oradea, Romania*

Microscopic aspects of junction between dental hard tissues and composite material depending on composite insertion: layering *versus* bulk-fill

Uriciuc Willi - *“Iuliu Hațieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania*

Research about thermodynamic behavior on the surface of dental alloy with Cobalt-Chrome base

Posters

Gruia Codruța - *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

In vitro optical behavior evaluation of different CAD /CAM ceramic blocks

Rotar Raul - *„Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Marginal fit assessment of CAD/CAM ceramic crowns. Comparison between direct and indirect

digital workflow

Costea Cosmin Ioan - *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Biomechanical evaluation of PEKK Overdenture using Numerical Simulation

Todor Raluca – *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Marginal Fit of Zirconia Dental Crowns Approach at Different Sintering Conditions

Cojocariu Andreea Codruța – *“Victor Babes” University of Medicine and Pharmacy Timisoara, Romania*

Analysis of the dimensional variation of different types of impression techniques

Saroși Codruța – *“Babes-Bolyai” University, Cluj-Napoca, Romania*

Characterization of physico-chemical and adhesive properties of orthodontic cements

Focsăneanu Sergiu - *“Gheorghe Asachi” Technical University Iasi, Romania*

Potential improvement of the properties of zirconia for dental applications by surface modifications treatments

September 27th

8.30-10.30 Scientific Session B3 (UMF 311)

CHAIRS: Vicențiu Săceleanu, Anca Daniela Raiciu

Keynote Speakers - Conferences

Săceleanu Vicențiu - *“Lucian Blaga” University, Sibiu, Romania*

Management of Orbital Fractures

Oral Presentations

Aurel Mohan - *University of Oradea, Romania*

Biomaterials used in Cranioplasty Surgery after Decompressive Craniectomy

Mercuț Maria Filofteia - *University of Medicine and Pharmacy of Craiova, Romania*

Virtual 3D model of the human eye development based on computer tomograph images

Mecu Roxana Maria - *University of Medicine and Pharmacy of Craiova, Romania*

Composite systems for biocompatible materials with medical applications

Duceac Ioana - *“Grigore T. Popa” University of Medicine and Pharmacy, Iasi, Romania*

Smart hydrogels based on chitosan, collagen and poly(acrylic acid) for soft tissue engineering

Lădaru Alin - *“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania*

3D patient specific implants for cranioplasty, a multicenter study

Posters

Cojocaru Florina Daniela - *“Grigore T. Popa” University of Medicine and Pharmacy, Iasi, Romania*

Magnetic scaffolds with applications in bone tissue treatment and regeneration

Mocanu Aura Catalina - *University Politehnica of Bucharest, Romania*

Novel Porous Ceramics with Random Interconnected 3D Channels Obtained by Sacrificial Porogen Method

15.00-17.00 Scientific Session B4 (UMF 311)

CHAIRS: Simona Cavalu, Nicoleta Cioateră

Keynote Speakers - Conferences

Voicu Ștefan - *University Politehnica of Bucharest, Romania*

Advanced Functional Polymeric Membranes for Medical Applications

Cavalu Simona - *University of Oradea, Romania*

PMMA materials for orthopedic, dental and cranioplasty applications- additives and improvements

Oral Presentations

Cioateră Nicoleta - *University of Craiova, Romania*

Structural Challenges of Zirconia-Based Biomaterials

Ciociu Robert Cătălin - *University Politehnica of Bucharest, Romania*

Anisotropy of 3D Printed Polylactic Acid

Posters

Dreanca Alexandra - *University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania*

Biocompatibility evaluation of alginate-pullulan-bioactive glass composite with gold nanospheres and spherical nanocages

Magyari Klara - *Babes-Bolyai University, Cluj-Napoca, Romania*

Silicate based bioactive glasses with gold nanoparticles for skin wound regeneration trials

Bălan Vera - *“Grigore T. Popa” University of Medicine and Pharmacy of Iasi, Romania*

Magnetic nanoparticles for drug delivery applications in breast cancer therapy

Lupescu Ștefan - *“Gheorghe Asachi” Technical University of Iasi, Romania*

Electrochemical analysis of some biodegradable Mg-Ca-Mn alloys

Voloseniuc Tudor - *“Gheorghe Asachi” Technical University, Iasi, Romania*

Influence of Mn content on the microstructure of Mg-Ca-Mn alloys

17.30 - 19.00 Scientific Session B5 (UMF 311)

CHAIRS: Ghiban Brândușa, Corneliu Munteanu,

Keynote Speakers - Conferences

Ghiban Brândușa – *University Politehnica of Bucharest, Romania*

Fractographic considerations in Hip Resurfacing. Case studies considerations

Oral Presentations

Popescu Oana Diana – *“Gheorghe Asachi” Technical University of Iasi, Romania*

Effect of Gd content on the microstructure, mechanical properties and in vitro analysis of Mg–Ca–Gd alloys

Rotaru Andrei – *University of Craiova, Romania*

Antimicrobial materials based on biguanidine derivative complexes with Co(II) and Zn(II): Synthesis, characterization and thin film deposition by Matrix-Assisted Pulsed Laser Evaporation technique

Posters

Ungureanu Elena - *University Politehnica of Bucharest, Romania*

Electrochemical magnesium substituted hydroxyapatite for biodegradation control

Ungureanu Elena - *University Politehnica of Bucharest, Romania*

Development of bioactive and bactericide coatings through electrochemical deposition of Ag and Zn doped HAp

Bololoi Robert – *University Politehnica of Bucharest, Romania*

Physical 3D Spine Model Created From DICOM Images

Tăbăraș Diana – *University Politehnica of Bucharest, Romania*

Polymeric Coatings Based on Cellulose Acetate for Biodegradation Control in the Case of Mg-Zn Alloys

September 27th

11.00-13.00 Workshop offered by **KavoKerr**

Predictable materials and techniques for aesthetic adhesive restorations

Prosthetic Department , 3-rd floor, UMF Craiova

COMPARATIVE STUDY OF DIFFERENT NI-CR DENTAL MATERIALS FOR CASTING DENTAL CROWNS AND BRIDGES

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Abstract: The materials used for the porcelain-fused-to-metal and casting dental crown and bridge are required to have a simple manufacturing process, low cost price and surely a very good corrosion resistance. The nickel from Ni-based alloys is known as highly toxic, with epithelial cells and fibroblasts and despite the common allergies to nickel, it was allied with chromium, so the use of Ni-Cr alloys in the oral cavity does not always lead to an allergic reaction; so the use of Ni-Cr dental alloys is increasing.

Due to the spread of Ni-Cr alloys, the present paper made a comparative study of six alloys: Wiron NT, Wiroloy and Heraenium (Germany), Verasoft (USA) and Nicromal Soft and V (Romania) regarding microstructure characterization and corrosion behaviour (Open Circuit Potential, Polarization Resistance, Tafel slopes and Electrochemical Impedance Spectroscopy) in simulated body fluid (Ringer solution).

The obtained results showed that mentioned alloys are under the influence of an anodic control, due to the formation of protective layers, most likely of oxide, on the surface. Also, according to the type of corrosion these alloys can be divided into two categories. A uniform general corrosion behaviour was found on the surface of Wiron NT and Heraenium Ni-Cr alloys and pitting corrosion for Wiroloy, V, VeraSoft and Nicromal Soft Ni-Cr alloys. In terms of susceptibility to corrosion, the biologic safety of the studied alloys is very high for the Heraenium and Wiron NT and adequate for the rest.

Key words: Ni-Cr dental alloys, corrosion, biomaterials