



*International Conference on  
Biomaterials and Regenerative Medicine*



**BioReMed**

**2023**

*July 19<sup>th</sup> - 21<sup>st</sup>  
Sibiu, ROMANIA*



*International Conference on Biomaterials and Regenerative Medicine  
July 19<sup>th</sup> - 21<sup>st</sup>, Sibiu, ROMANIA*

# Welcome

Dear Colleagues,

We have the pleasure to invite you to the International Conference on Biomaterials and Regenerative Medicine BIOREMED'2023 which will be held in Sibiu (Romania), July 19-21th, 2023.

The aim of this event is to bring together scientists from biomaterials, medical devices 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, and neurosurgery, cardiovascular and other surgery) will be here 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. The choice of the keynote speakers will bring on stage home some of the best scientist from the field of biomaterials, tissue engineering and medical devices.

Round table discussions intended to promote interdisciplinary research projects will be organized and a technical exhibition will run in parallel with the scientific sessions.

The conference will also host a Young Scientists Forum who could promote new ways of communicating and thinking on the research and educational aspects, and the General Assembly of the Romanian Society for Biomaterials.

We look forward to seeing you all in Sibiu!

Yours sincerely,

Iulian Antoniac  
Conference President

Radu Fleacă  
Conference President





 **BioReMed 2023**

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July 19<sup>th</sup> - 21<sup>st</sup>, Sibiu, ROMANIA*

## Organizers



**UNIVERSITATEA  
LUCIAN BLAGA  
— DIN SIBIU —**



## Endorsed by:



GEMA EQUIPMENTS





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## Committees

### Conference Presidents

**Iulian Antoniac (Romania)**

**Radu Fleacă (Romania)**

### Organizing Committee

**Iulian Antoniac**

**Horațiu Moldovan**

**Cosmin Sinescu**

**Aurel Mohan**

**Erar Kamel**

**Horia Manolea**

**Marius Manole**

**Aurora Antoniac**

**Alina Robu**

**Radu Fleacă**

**Horațiu Dura**

**Gabriel Racz**

**Vicențiu Săceleanu**

**Ciprian Tănăsescu**

**Chicea Radu**

**Laura Ștef**

**Cătălin Popa**

**Mircea Stețiu**



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# International Scientific Committee

**Iulian Antoniac (Romania)**  
**Mauro Alini (Switzerland)**  
**Mihaela Baciut (Romania)**  
**Tiberiu Bațagă (Romania)**  
**Horia Benea (Romania)**  
**Elvira Bratilă (Romania)**  
**Daniela Buruiană (Romania)**  
**Cristina-Ioana Bica (Romania)**  
**Alexandru Vlad Ciurea (Romania)**  
**Ilaria Cacciotti (Italy)**  
**Cristian Dinu (Romania)**  
**Lucian Dorbanțu (Romania)**  
**Răzvan Ene (Romania)**  
**Radu Fleacă (Romania)**  
**Norina Fornă (Romania)**  
**Ștefan Florian (Romania)**  
**Brandușa Ghiban (Romania)**  
**Amina Gharbi (Tunisia)**  
**Sebastian Grădinaru (Romania)**  
**Gultekin Goller (Turkey)**  
**James C.Kirkpatrick (Germany)**  
**Earar Kamel (Romania)**  
**Ondine Lucaciu (Romania)**  
**Jose M.Martin-Martinez (Spain)**  
**Lavinia Meda-Negrutiu (Romania)**  
**Horia Manolea (Romania)**

**Horațiu Moldovan (Romania)**  
**Corneliu Munteanu (Romania)**  
**Florin Miculescu (Romania)**  
**Marian Miculescu (Romania)**  
**Mărioara Moldovan (Romania)**  
**Adrian Molnar (Romania)**  
**Aurel Mohan (Romania)**  
**Horia Pleș (Romania)**  
**Corrado Piconi (Italy)**  
**Cătălin Popa (Romania)**  
**Anca Porumb (Romania)**  
**Andrei Sandu (Romania)**  
**Vicențiu Săceleanu (Romania)**  
**Cosmin Sinescu (Romania)**  
**Horațiu Suciu (Romania)**  
**Grigore Tinică (Romania)**  
**Ciprian Tănăsescu (Romania)**  
**Ștefan Voicu (Romania)**  
**Liliana Vereștiuc (Romania)**  
**Petrică Vizureanu (Romania)**  
**Gabriel Racz (Romania)**  
**Julietta V. Rau (Italy)**  
**Nicolae Cofaru (Romania)**  
**Mihai Roman (Romania)**  
**Octav Russu (Romania)**  
**Julia Mirza Rosca (Spain)**





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# BioRemed 2023 Conference Information

## Topics

- Biomaterials
- Tissue engineering
- Clinical applications of biomaterials, medical devices and their performance in cardiovascular surgery
- Clinical applications of biomaterials, medical devices and their performance in orthopedic surgery
- Clinical applications of biomaterials, medical devices and their performance in neurosurgery
- Clinical applications of biomaterials, medical devices and their performance in dentistry
- Biomechanics
- Surface engineering
- Scaffolds
- Pharmacology and drug delivery
- Biocompatibility
- Nanotechnology
- Regenerative medicine
- Biofabrication

## Call for Papers

During the conference, a large series of **keynote and invited lectures** will be presented.

All the abstracts submitted are sorted into different categories.

**Abstracts** for posters or oral presentations are welcome and should be submitted using the **template format**.

The intending author should submit an abstract of **no more than 300 words**.

Abstracts should be submitted in **English** and sent to the Scientific Secretariat through the email address [office@bioremed.ro](mailto:office@bioremed.ro)

All abstracts will be refereed, and a criterion of rejection will be lack of originality.





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Notification of acceptance or rejection by the Scientific Committee will be mailed to the presenting Author.

After receiving notification of acceptance submission, you need to register (using **Registration Form**).

All registered participants will have the opportunity to present their papers in a specific format for **posters** that will be presented in **electronic format**.

Each presenting author can submit a maximum of two abstracts but can be co-authors for an unlimited number of abstracts.

Please email the conference secretariat at [office@bioremed.ro](mailto:office@bioremed.ro) with details of any revisions or queries.

All accepted abstracts will be published as **BIOREMED 2023 Proceeding**.

## Venue

### Universitatea Lucian Blaga, Sibiu.

The Lucian Blaga University of Sibiu (ULBS) is one of the oldest universities in Romania, with a tradition of over 225 years. The University promotes unique specializations in the Romanian academic space, and the high degree of trust recommends “Lucian Blaga” University of Sibiu as a strong institution involved in increasing the quality of the educational process. The Faculty of Medicine was established in 1990, it developed by increasing the number of students in training, by completing the professional endowment, enriching along the way with other specializations: Dental Medicine, General Medical Assistance, Dental Technique and Pharmacy.

## Important Dates

*April 15, 2023 Opening of the Abstract Submission*

*May 15, 2023 Abstract Submission Deadline*

*July, 8, 2023 Registration Deadline*

*July 19-21, 2023 Conference Dates*





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# Program

The International Conference on Biomaterials and Regenerative Medicine BIOREMED'2023, offers a unique opportunity to participate in a highly trans-disciplinary event covering the development and application of biomaterials in medicine, as well as the clinical performance of medical devices.

The purpose of this event is to discuss and suggest improvements of biomaterials, tissue engineering, and regenerative medicine of today and tomorrow. Considering that interdisciplinary cooperation is the pathway to evolution, we would like to bring together scientists from the field of biomaterials and tissue engineering with clinicians from different areas of expertise that includes dentistry, orthopedics, neurosurgery, cardiovascular surgery, general and aesthetic surgery.

## PLENARY SESSIONS

For the first time, we conceived this session involving clinicians and material scientists on the same podium. Here, highly reputed clinicians will describe relevant clinical needs in the field of Cardiovascular Surgery, Orthopedic and Traumatology, Neurosurgery, General Surgery and Gynecology, Dentistry, and will pass the baton to biomaterial experts and material scientists to discuss about effective approaches and promising solutions.

### Plenary Invited Speakers:

*Julietta V. Rau (Italy) - Ion-doped calcium phosphate-based coatings with antibacterial properties for biomedical implants*

*Fleacă Radu (Romania) - Fixation stability in open wedge high tibial osteotomy*

*Antoniac Iulian (Romania) - Role of degradable magnesium alloys in medicine*

*Săceleanu Vicențiu (Romania) - BrainIT: From biomaterials to brain repair and regeneration*

*Forna Norina (Romania) - Practical applications regarding the use of bone regeneration materials in resorptions and bone substance losses*

*Gruionu Gabriel (USA) - Predictive computational model for intramyocardial hemorrhage in reperfused myocardial infarction*

*Popa Cătălin (Romania) - Drug delivery system in integrated structures*

*Sinescu Cosmin (Romania) - New trends in dental adhesives*







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Moldovan Horațiu (Romania) - *Left ventricular assist devices in end stage heart failure - constructive solution in XXI century*

Dinu Cristian (Romania) - *Maxillofacial implants and their clinical performance*

Grădinaru Sebastian (Romania) - *Biomaterials design strategies applicable for hernia repair*

Cacciotti Ilaria (Italy) - *Custom mad approach by additive manufacturing for maxillofacial applications*

Ciurea Alexandru-Vlad (Romania) - *Actual status of biomaterials in romanian neurosurgery*

## SCIENTIFIC SESSIONS

The scientific sessions will be organized as a form of TRACKS for a specific topic, in two parallel sessions. High level experts from various fields agree to give some keynote talks. The organizers intend to distribute keynote talks during specific TRACK, but this depends on the number of registered participants interested by each TRACK. Anyway, if the number of conference participants is not so high, the keynote talk will be condensed on the most appropriate topic. More details about the program will be available after the deadline for participants registration.

### Scientific Sessions

**Invited Plenary Session 1 - Chair: Săceleanu Vicențiu**

**Invited Plenary Session 2 - Chair: Fleacă Radu**

**Invited Plenary Session 3 - Chair: Antoniac Iulian**

**Invited Plenary Session 4 - Chair: Dura Horațiu**

**Invited Plenary Session 5 - Chair: Miculescu Marian**

**Scientific Sessions 1 - Clinical applications of biomaterials, medical devices and their performance in dentistry**

**Chairs:** Forna Norina, Earar Kamel, Ștef Laura

**Scientific Sessions 2 - Clinical applications of biomaterials, medical devices and their performance in general surgery & gynecology**

**Chairs:** Tănăsescu Ciprian, Chicea Radu, Dragoș Șerban

**Scientific Sessions 3 - Biomaterials I**

**Chairs:** Munteanu Corneliu, Buruiană Daniela, Gângu Oana

**Scientific Sessions 4 - Biomaterials II**

**Chairs:** Vizureanu Petrică, Sandu Andrei Victor, Ghiban Brândușa

**Scientific Sessions 5 - Technologies for Orthopedic Surgery**

**Chairs:** Fleacă Radu, Gruionu Lucian, Lăptoiu Dan

**Scientific Sessions 6 - Clinical applications of biomaterials, medical devices and their performance in cardiovascular surgery**

**Chairs:** Moldovan Horațiu, Dorobanțu Lucian, Molnar Adrian





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**Scientific Sessions 7 - Clinical applications of biomaterials, medical devices and their performance in orthopedic surgery**

**Chairs:** Ene Răzvan, Benea Horia, Roman Mihai

**Scientific Sessions 8 - Dental Biomaterials**

**Chairs:** Dinu Cristian, Sinescu Cosmin, Manolea Horia

**Scientific Sessions 9 - Clinical applications of biomaterials, medical devices and their performance in neurosurgery**

**Chairs:** Ciurea Alexandu-Vlad, Săceleanu Vicențiu, Pleș Horia

## **Workshop: Education at the frontier between engineering and medicine**

*Presentations and debates with the participation of the representative persons involved in universities management related to Medicine, Dental Medicine, Bioengineering, Medical Engineering, from Bucharest, Cluj-Napoca, Timisoara, Iasi, Oradea, Targu-Mures, Craiova, Galati, Sibiu.*





## PROGRAM OVERVIEW

July 19<sup>th</sup>, 2023

TIME	EVENT	
	Room 1 – ULBS	
08.00-09.00	Registration Open	
09.00-09.30	Opening Ceremony	
	Welcome speech - Steering Committee SRB / ULBS / AOSR Presentation of the plenary invited speakers	
09.30-11.00	<u>Invited Plenary Session 1</u> <b>Fleacă Radu (Romania)</b> – Fixation stability in open wedge high tibial osteotomy <b>Antoniac Iulian (Romania)</b> – Role of degradable magnesium alloys in medicine <b>Gruionu Gabriel (USA)</b> - Predictive computational model for intramyocardial hemorrhage in reperfused myocardial infarction	
11.00-11.30	Coffee Break	
11.30-12.30	<u>Invited Plenary Session 2</u> <b>Săceleanu Vicențiu (Romania)</b> – BrainIT: From biomaterials to brain repair and regeneration <b>Forna Norina (Romania)</b> – Practical applications regarding the use of bone regeneration materials in resorptions and bone substance losses	
12.30-13.30	Lunch Break	
TIME	Room 1 – ULBS	Room 2 – ULBS
13.30-16.30	<u>Scientific Sessions 1</u> Clinical applications of biomaterials, medical devices and their performance in dentistry <b>Keynote Speakers:</b> <b>Agop-Forna Doriana</b> - Bone loss management using biodegradable grafting materials	<u>Scientific Sessions 2</u> Clinical applications of biomaterials, medical devices and their performance in general surgery & gynecology <b>Keynote Speakers:</b> <b>Tănăsescu Ciprian</b> - Peculiarities in the use of alloplastic material in the surgical



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	<p><b>Lucaciu Ondine Patricia</b> - <i>Validation of a new drug delivery system for periodontal regeneration on an animal model</i></p> <p><b>Porumb Anca</b> - <i>The assessment of ceramic dental materials during the treatment of severe adult cleft palate</i></p> <p><b>Oral presentations:</b>          Ștef Laura          Dinis Vanessa-Maria          Săceleanu Adriana          Kurunczi Andreea          Hrior Gabriela          Heredea Anne-Maria          Boța Gabriela          Stețiu Andreea          Țogoe Marius-Mihai          Mitariu Gabriela Simona          Frățilă Anca          Dahm Tataru Cristina Adriana</p>	<p><i>treatment of inguinal hernia in day surgery</i></p> <p><b>Chicea Radu</b> - <i>Inflammatory response in polypropylene meshes used for genital prolaps</i></p> <p><b>Oral presentations:</b>          Dragoș Șerban          Popescu Dragoș          Taroi Cristian          Mureșan Olimpiu          Ispasoiu Florin          Nistor Claudiu-Eduard          Bratu Dan          Crețu Dan          Tănăsescu Denisa          Moga Doru          Costea Daniel Ovidiu</p>
16.30-17.00	<b>Sponsor Presentations - Gema Equipments</b>	
	<b>Room 2 – ULBS</b>	
17.00-17.30	<b>Coffee Break &amp; Electronic Poster Session</b>	
<b>TIME</b>	<b>Room 1 – ULBS</b>	<b>Room 2 – ULBS</b>
17.30-19.00	<p><b>Scientific Sessions 3</b>          Biomaterials I  <b>Keynote Speakers:</b>  <b>Bălțatu Mădălina Simona</b> - <i>Innovative titanium alloys suitable for medical applications</i>  <b>Cotruș Cosmin</b> - <i>Electrochemical techniques used for surfaces bioactivation of metallic materials</i>  <b>Istrate Bogdan</b> - <i>Mg-Ca-Zn biodegradable alloys and their</i></p>	<p><b>Scientific Sessions 4</b>          Biomaterials II  <b>Keynote Speakers:</b>  <b>Cavalu Simona</b> - <i>Natural and manufactured collagenic membranes for tissue regeneration: new approaches and improvements</i>  <b>Voicu Ștefan Ioan</b> - <i>Functional polymeric membrane materials for medical applications</i></p>





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	<p>importance in the medical applications and material science</p> <p><b>Benea Lidia</b> - Applied electrochemistry for nanostructuring and surface functionalization of biomaterials</p> <p><b>Oral presentations:</b> Vrânceanu Diana</p>	<p><b>Miculescu Florin</b> - Sustainable technologies for bone reconstruction products and bioceramic coatings development</p> <p><b>Gruionu Lucian Gheorghe</b> - Lung airways navigation system using shape sensing and artificial intelligence</p> <p><b>Oral presentations:</b> Ghisman Viorica</p>
20.00-22.00	<b>Chairman Dinner-Hotel Hilton, Restaurant "Camara Boierului" (only by invitation)</b>	





## July 20<sup>th</sup>, 2023

TIME	EVENT	
	Room 1 – ULBS	
09.00-10.00	<b>Registration Open</b>	
09.00-10.30	<b><u>Invited Plenary Session 3</u></b> <i>Julietta V. Rau (Italy) – Ion-doped calcium phosphate-based coatings with antibacterial properties for biomedical implants</i> <i>Popa Cătălin (Romania) – Drug delivery system in integrated structures</i> <i>Sinescu Cosmin (Romania) – New trends in dental adhesives</i>	
10.30-11.00	<b>Coffee Break</b>	
11.00-12.00	<b><u>Invited Plenary Session 4</u></b> <i>Moldovan Horațiu (Romania) – Left ventricular assist devices in end stage heart failure - constructive solution in XXI century</i> <i>Dinu Cristian (Romania) – Maxilofacial implants and their clinical performance</i>	
12.00-13.00	<b>Symposium: Introduction in Digital Univers</b> <b>Room 1 – ULBS</b> <b>Chair: Stețiu Mircea</b>	
13.00-14.00	<b>Lunch Break</b>	
	Room 1 – ULBS	Room 2 – ULBS
14.00-16.10	<b><u>Scientific Sessions 5</u></b> Technologies for Orthopedic Surgery <b>Keynote Speakers:</b> <b>Bătagă Tiberiu</b> - <i>The new 3D technologies in the rapid evolution of orthopedics</i> <b>Cofaru Nicolae Florin</b> – <i>Computer assisted of the biomechanics of the knee joint and axial deviations of the human lower member</i>	14.00-15.10 <b><u>Scientific Sessions 6</u></b> Clinical applications of biomaterials, medical devices and their performance in cardiovascular surgery <b>Keynote Speakers:</b> <b>Dorobanțu Lucian</b> - <i>Transaortic mitral valve reconstruction in hypertrophic obstructive cardiomyopathy – does it simplify or complicate the surgical strategy?</i> <b>Molnar Adrian</b> - <i>Artificial heart valves</i>





	<p><b>Roman Mihai</b> - <i>Pulling force at the level of tibial fixation in ACL reconstruction with hamstrings. Experimental comparative study</i></p> <p><b>Oral presentations:</b> Petrușe Radu Emanuil Breaz Radu Eugen Racz Sever Gabriel Mohor Cosmin Russu Octav Coca Ramona Maria Brănescu Horia</p>		<p><b>Oral presentations:</b> Bacușcă Alberto Safta Sabina Badea Aida</p>
		15.20 – 16.00	<p><b>Scientific Sessions 8</b> Dental Biomaterials</p> <p><b>Keynote Speakers:</b> <b>Manole Marius</b> - <i>Biomaterials used in prosthetic structures on dental implants</i> <b>Manolea Horia Octavian</b> - <i>Teaching dental biomaterials in the 21-st century. The need for a paradigm shift</i></p>
16.00-16.30	<b>Coffee Break &amp; Electronic Poster Session</b>		
<b>TIME</b>	<b>Room 1 – ULBS</b>		<b>Room 2 – ULBS</b>
16.30-19.00	<p><b>Scientific Sessions 7</b> Clinical applications of biomaterials, medical devices and their performance in orthopedic surgery</p> <p><b>Keynote Speakers:</b> <b>Benea Horia</b> - <i>Pyrocarbon hemiprostheses of the shoulder: exploring successes and challenges</i> <b>Vlădescu Dragomir Alina</b> - <i>ZrCu-based thin films metallic glasses for orthopaedic aims</i> <b>Ene Răzvan</b> - <i>Is the two stage prosthetic revision using an antibiotic impregnated hip spacer worth it?</i></p> <p><b>Oral presentations:</b> Lăptoiu Dan Dragoș Apostu Oltean-Dan Daniel</p>		<p><b>Scientific Sessions 8</b> Dental Biomaterials</p> <p><b>Keynote Speakers:</b> <b>Ciocan Lucian Toma</b> - <i>Modern polymers technologies and applications in prosthodontics</i> <b>Crăciunescu Emanuela Lidia</b> - <i>The importance of choosing the impression technique and material in fixed prosthodontics</i></p> <p><b>Oral presentations:</b> Gângu Oana Prodan Corina Mirela Drăghici Maria Alexandra Pisc Radu Cirstea Grigorian Cristinel Anghel Miruna Andreea Mitruț Ioana Petrescu Stelian-Mihai-Sever</p>



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	Dimitriu Alexandru Lisias Georgescu Eduard Cătălin Popescu Elisa Fotescu Horia Mihnea	Tamara-Rahela Ioana Bahrim Sebastian
<b>20.00-23.00</b>	<b>Gala Dinner – Hilton Hotel</b> <i>(all registered participants / tickets)</i>	







## July 21<sup>th</sup>, 2023

TIME	EVENT
	<b>Room 1 – Hilton Hotel</b>
10.00-11.30	<p><b><u>Invited Plenary Session 5</u></b></p> <p><b>Grădinaru Sebastian (Romania)</b> - <i>Biomaterials design strategies applicable for hernia repair</i></p> <p><b>Cacciotti Ilaria (Italy)</b> - <i>Custom mad approach by additive manufacturing for maxillofacial applications</i></p> <p><b>Ciurea Alexandru-Vlad (Romania)</b> - <i>Actual status of biomaterials in Romanian neurosurgery</i></p>
11.30-12.40	<p><b><u>Scientific Sessions 9</u></b></p> <p>Clinical applications of biomaterials, medical devices and their performance in neurosurgery</p> <p><b>Keynote Speakers:</b></p> <p><b>Mohan Aurel</b> - <i>Cranioplasty after traumatic brain injury (TBI) – Customized polyetheretherketone (PEEK) cranial repair system implants review</i></p> <p><b>Pleș Horia</b> - <i>Consensus statement on posttraumatic cranioplasty. Actual status and future directions</i></p> <p><b>Amina Gharbi</b> - <i>Managing the dissolution kinetics of resorbable bioactive glass (BaG) to meet the unique requirements of different patient cohorts</i></p> <p><b>Oral presentations:</b></p> <p>Pleș Horia</p>
12.40-13.10	<b>Sponsor Presentations – Sun Wave Pharma</b>
13.10-14.30	<p><b>Workshop : Education at the frontier between engineering and medicine</b></p> <p><i>Presentations and debates with the participation of the representative persons involved in universities management related to Medicine, Dental Medicine, Bioengineering, Medical Engineering, from Bucharest, Cluj-Napoca, Timisoara, Iasi, Oradea, Targu-Mures, Craiova, Galati, Sibiu.</i></p>
14.30-15.00	<b>Closing Ceremony</b>
	Conference Awards Ceremony
	Closing speech - Steering Committee





## DETAILED PROGRAM

**July 19<sup>th</sup>, 2023**

**08.00-09.00 Registration Open**

**09.00-09.30, Room 1 - ULBS**

**Opening Ceremony**

**Welcome speech - Steering Committee**

**SRB / ULBS / AOSR**

**Presentation of the plenary invited speakers**

**09.30-11.00, Room 1 - ULBS**

### Invited Plenary Session 1

**Chair:** Săceleanu Vicențiu

**09.30-10.00**

**Fleacă Radu (Romania)** – *Fixation stability in open wedge high tibial osteotomy*

**10.00-10.30**

**Antoniac Iulian (Romania)** – *Role of degradable magnesium alloys in medicine*

**10.30-11.00**

**Gruionu Gabriel (USA)** - *Predictive computational model for intramyocardial hemorrhage in reperfused myocardial infarction*

**11.00-11.30 Coffee Break**

**11.30-12.30, Room 1 - ULBS**

### Invited Plenary Session 2

**Chair:** Fleacă Radu

**11.30-12.00**

**Săceleanu Vicențiu (Romania)** – *BrainIT: From biomaterials to brain repair and regeneration*

**12.00-12.30**

**Forna Norina (Romania)** – *Practical applications regarding the use of bone regeneration materials in resorptions and bone substance losses*





## 12.30-13.30 Lunch Break

## 13.30-16.30, Room 1 - ULBS

### Scientific Sessions 1

Clinical applications of biomaterials, medical devices and their performance in dentistry

**Chairs:** Forna Norina, Earar Kamel, Ștef Laura

### **Keynote Speakers:**

**13.30 – 13.50**

**Agop-Forna Doriana** - Bone loss management using biodegradable grafting materials

**13.50 – 14.10**

**Lucaciu Ondine Patricia** - Validation of a new drug delivery system for periodontal regeneration on an animal model

**14.10 – 14.30**

**Porumb Anca** - The assessment of ceramic dental materials during the treatment of severe adult cleft palate

### **Oral presentations:**

**14.30 – 14.40**

Ștef Laura - The response of oral cavity tissues to restorative prosthetic materials

**14.40 – 14.50**

Dinis Vanessa-Maria - Evaluations of the stress behavior of different types of polymeric prostheses

**14.50 - 15.00**

Săceleanu Adriana - Influence of chromium concentration on the properties of dental frameworks

**15.00 – 15.10**

Kurunczi Andreea - Green synthesized nanoparticles in dentistry

**15.10 – 15.20**

Hrior Gabriela - A systematic review of dental materials used by our ancestors

**15.20 – 15.30**

Heredea Anne-Maria - The influence of polymer processing technology on bacterial colonization of fixed prostheses

**15.30 – 15.40**

Boța Gabriela - MTA is a reliable material





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**15.40 – 15.50**

Stețiu Andreea - *Indications of the PRF shown to be effective in oral surgical procedures*

**15.50 – 16.00**

Țogoe Marius-Mihai - *Aesthetic effect assessment due to the influence of endodontic post systems used in restorations*

**16.00 – 16.10**

Mitariu Gabriela Simona - *Current aspects about zirconia dental implants in dental medicine*

**16.10 – 16.20**

Frățilă Anca - *Comparative study of the behavior of two dental alloys in different conditions of oral exposure*

**16.20 – 16.30**

Dahm Tataru Cristina Adriana - *Glass ionomer-based restorative material with silver nanoparticles: properties and clinical applications*

**13.30-16.30, Room 2 - ULBS**

### **Scientific Sessions 2**

Clinical applications of biomaterials, medical devices and their performance in general surgery & gynecology

**Chairs:** Tănăsescu Ciprian, Chicea Radu, Dragoș Șerban

### **Keynote Speakers:**

**13.30 – 13.50**

**Tănăsescu Ciprian** - *Peculiarities in the use of alloplastic material in the surgical treatment of inguinal hernia in day surgery*

**13.50 – 14.10**

**Chicea Radu** - *Inflammatory response in polypropylene meshes used for genital prolaps*

### **Oral presentations:**

**14.10 – 14.20**

Dragoș Șerban - *Types of mesh in inguinal hernia repair - our experience*

**14.20 – 14.30**

Dragoș Șerban - *Anatomical 3D polypropylene meshes for inguinal hernia repair the perfect fit for the myopectineal orifice- decoding the local biotribology*

**14.30 – 14.40**

Popescu Dragoș - *Contraceptive intrauterine devices and surrounding tissues - mutual interrelationships*





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**14.40 – 14.50**

Taroi Cristian - *Conservative approach for pelvic organ prolapse - sacrospinous ligament suspension using polypropylene mesh*

**14.50 – 15.00**

Mureșan Olimpiu - *Transobturator/tension-free vaginal tape approach in urinary incontinence*

**15.00 – 15.10**

Ispasoiu Florin - *Silicone cerclage pessary – a useful tool in prevention of premature birth in twin pregnancy*

**15.10 – 15.20**

Nistor Claudiu-Eduard - *Present and future of prosthetic materials for chest wall reconstruction*

**15.20 – 15.30**

Nistor Claudiu-Eduard - *Surgical stabilization in flail chest and pectus excavatum- making the right choice*

**15.30 – 15.40**

Bratu Dan - *Biodegradable esophageal stent - therapeutic solution in esophageal stricture due to benign causes*

**15.40 – 15.50**

Crețu Dan - *A comparative study of mesh fixation versus nonfixation in transabdominal preperitoneal (TAPP) inguinal hernia repair*

**15.50 – 16.00**

Tănăsescu Denisa - *The use of modern dressings in the treatment of the diabetic foot*

**16.00 – 16.10**

Moga Doru - *Why laparoscopic approach for inguinal hernia*

**16.10 – 16.20**

Costea Daniel Ovidiu - *Migration of metal clips into the duodenum or stomach after laparoscopic cholecystectomy: An easily neglected complication*

**16.20 – 16.30**

Costea Daniel Ovidiu - *Anastomotic leakage in colorectal side-to-side anastomoses: a complication of using staplers*

**16.30-17.00, Room 2 - ULBS**

**Sponsor Presentations - Gema Equipments**





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**17.00 - 17.30**

**Coffee Break & Electronic Poster Session**

**17.30 - 19.00, Room 1 - ULBS**

**Scientific Sessions 3**

**Biomaterials I**

**Chairs:** Munteanu Corneliu, Buruiană Daniela, Gângu Oana

**Keynote Speakers:**

**17.30 – 17.50**

**Bălțatu Mădălina Simona** - *Innovative titanium alloys suitable for medical applications*

**17.50 – 18.10**

**Cotruț Cosmin** - *Electrochemical techniques used for surfaces bioactivation of metallic materials*

**18.10 – 18.30**

**Istrate Bogdan** - *Mg-Ca-Zn biodegradable alloys and their importance in the medical applications and material science*

**18.30 – 18.50**

**Benea Lidia** - *Applied electrochemistry for nanostructuring and surface functionalization of biomaterials*

**Oral presentations:**

**18.50 – 19.00**

**Vrânceanu Diana** - *In Vitro biological behavior of bioactive hydroxyapatite based coatings*

**17.30 - 19.00, Room 2 - ULBS**

**Scientific Sessions 4**

**Biomaterials II**

**Chairs:** Vizureanu Petrică, Sandu Andrei Victor, Ghiban Brândușa

**Keynote Speakers:**

**17.30 – 17.50**

**Cavalu Simona** - *Natural and manufactured collagenic membranes for tissue regeneration: new approaches and improvements*

**17.50 – 18.10**

**Voicu Ștefan Ioan** - *Functional polymeric membrane materials for medical applications*





 **BioReMed 2023**

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**18.10 – 18.30**

**Miculescu Florin** - *Sustainable technologies for bone reconstruction products and bioceramic coatings development*

**18.30 – 18.50**

**Gruionu Lucian Gheorghe** - *Lung airways navigation system using shape sensing and artificial intelligence*

**Oral presentations:**

**18.50 – 19.00**

Ghisman Viorica - *New trends in multifunctional coatings onto biocompatible materials*

**20.00 - 22.00 Chairman Dinner-Hotel Hilton, Restaurant “Camara Boierului” (only by invitation)**





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**July 20<sup>th</sup>, 2023**

**09.00-10.00, Registration Open**

**09.00-10.30, Room 1 - ULBS**

**Invited Plenary Session 3**

**Chair:** Antoniac Iulian

**09.00–09.30**

**Julietta V. Rau (Italy)** – *Ion-doped calcium phosphate-based coatings with antibacterial properties for biomedical implants*

**09.30–10.00**

**Popa Cătălin (Romania)** – *Drug delivery system in integrated structures*

**10.00–10.30**

**Sinescu Cosmin (Romania)** – *New trends in dental adhesives*

**10.30-11.00 Coffee Break**

**11.00-12.00, Room 1 - ULBS**

**Invited Plenary Session 4**

**Chair:** Dura Horațiu

**11.00–11.30**

**Moldovan Horațiu (Romania)** – *Left ventricular assist devices in end stage heart failure - constructive solution in XXI century*

**11.30–12.00**

**Dinu Cristian (Romania)** – *Maxillofacial implants and their clinical performance*

**12.00 - 13.00 Symposium: Introduction in Digital Univers**

**Room 1 – ULBS**

**Chair:** Stețiu Mircea

**13.00-14.00 Lunch Break**

**14.00-16.10, Room 1 - ULBS**

**Scientific Sessions 5**

Technologies for Orthopedic Surgery

**Chairs:** Fleacă Radu, Gruionu Lucian, Lăptoiu Dan







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## Keynote Speakers:

**14.00 – 14.20**

**Bătașă Tiberiu** - *The new 3D technologies in the rapid evolution of orthopedics*

**14.20 – 14.40**

**Cofaru Nicolae Florin** – *3D modelling of the knee joint and axial deviations of the human lower member*

**14.40 – 15.00**

**Roman Mihai** - *Pulling force at the level of tibial fixation in ACL reconstruction with hamstrings. Experimental comparative study*

## Oral presentations:

**15.00 – 15.10**

Petrușe Radu Emanuil - *3D Visualization of adolescent idiopathic scoliosis using augmented reality*

**15.10 – 15.20**

Breaz Radu Eugen - *Biomechanical approaches in medicine*

**15.20 – 15.30**

Racz Sever Gabriel - *Incremental forming as manufacturing process for cranioplasty plates*

**15.30 – 15.40**

Mohor Cosmin - *Proximal Femoral Nail Breakage in non-union of the trochanteric region fractures*

**15.40 – 15.50**

Russu Octav - *Biocompatibility in vitro testing of 3D-printed and electrospun materials*

**15.50 – 16.00**

Coca Ramona Maria - *Risk of osteonecrosis of the jaw receiving biphosphonates for bone mets*

**16.00 – 16.10**

Brănescu Horia - *CAD modelling of the human gait using skeleton systems*

**14.00 - 15.10, Room 2 - ULBS**

## Scientific Sessions 6

Clinical applications of biomaterials, medical devices and their performance in cardiovascular surgery

**Chairs:** Moldovan Horațiu, Dorobanțu Lucian, Molnar Adrian





## Keynote Speakers:

**14.00 – 14.20**

**Dorobanțu Lucian** - *Transaortic mitral valve reconstruction in hypertrophic obstructive cardiomyopathy – does it simplify or complicate the surgical strategy?*

**14.20 – 14.40**

**Molnar Adrian** - *Artificial heart valves*

## Oral presentations:

**14.40 – 14.50**

Bacușcă Alberto - *A new total artificial heart developed at "Grigore T. Popa" University of Medicine and Pharmacy from Iasi*

**14.50 – 15.00**

Badea Aida - *Primary degeneration of a biological valve prosthesis in tricuspid position standard situation – transcatheter valve-in-valve insertion, atypical solution*

**15.00 – 15.10**

Safta Sabina - *Endovascular treatment of thoracic aortic disease*

**16.00-16.30**

## Coffee Break & Electronic Poster Session

**16.30-19.00, Room 1 – ULBS**

## Scientific Sessions 7

Clinical applications of biomaterials, medical devices and their performance in orthopedic surgery

**Chairs:** Ene Răzvan, Benea Horia, Roman Mihai

## Keynote Speakers:

**16.30 – 16.50**

**Benea Horia** - *Pyrocarbon hemiprosthesis of the shoulder: exploring successes and challenges*

**16.50 – 17.10**

**Vlădescu Dragomir Alina** - *ZrCu-based thin films metallic glasses for orthopaedic aims*

**17.10 – 17.30**

**Ene Răzvan** - *Is the two stage prosthetic revision using an antibiotic impregnated hip spacer worth it?*





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## **Oral presentations:**

**17.30 – 17.40**

Lăptoiu Dan - *Porous metal structures for bone reconstructions: current practice and future applications*

**17.40 – 17.50**

Dragoș Apostu - *Systemic drug administration enhances the osseointegration of titanium implants*

**17.50 – 18.00**

Oltean-Dan Daniel - *Osseointegration enhancement of titanium implants surfaces modified with strontium-substituted hydroxyapatite in a rat model*

**18.00 – 18.10**

Dimitriu Alexandru Lisias - *The 7-day evolution of foam permeability in continuous negative pressure wound therapy*

**18.10 – 18.20**

Georgescu Eduard Cătălin - *The synergic integration effect of tricalcic phosphate and autograft*

**18.20 – 18.30**

Popescu Elisa - *Sponge or tissue, a comparison between hemostatic materials*

**18.30 – 18.40**

Fotescu Horia Mihnea - *Building Bones: Exploring the Boundless Possibilities of 3D Printing in Orthopedics*

**15.20 – 19.00, Room 2 - ULBS**

## **Scientific Sessions 8**

Dental Biomaterials

**Chairs:** Dinu Cristian, Sinescu Cosmin, Manolea Horia

## **Keynote Speakers:**

**15.20 – 15.40**

**Manole Marius** - *Biomaterials used in prosthetic structures on dental implants*

**15.40 – 16.00**

**Manolea Horia Octavian** - *Teaching dental biomaterials in the 21-st century. The need for a paradigm shift*

**Coffee Break & Electronic Poster Session - 16.00-16.30**





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## **Keynote Speakers:**

**16.30 – 16.50**

**Ciocan Lucian Toma** - *Modern polymers technologies and applications in prosthodontics*

**16.50 – 17.10**

**Crăciunescu Emanuela Lidia** - *The importance of choosing the impression technique and material in fixed prosthodontics*

## **Oral presentations:**

**17.10 – 17.20**

**Gângu Oana** - *Advances of the stereomicroscopy techniques for the dentistry research*

**17.20 – 17.30**

**Prodan Corina Mirela** - *The influence of heating upon color and translucency stability of universal resin-based composites*

**17.30 – 17.40**

**Drăghici Maria Alexandra** - *Osseointegration evaluation of an experimental bone graft material based on hydroxyapatite, reinforced with titanium-based particles*

**17.40 – 17.50**

**Pisc Radu** - *Young Modulus in Orthodontics: changing the way we select the sequence of orthodontic wires when treating orthodontic Angle Cls II malocclusion patients. An experiment using the Electrodont laboratory device*

**17.50 – 18.00**

**Cirstea Grigorian Cristinel** - *Structural assessment of dental hard tissues in teeth with dental injuries using OCT (Optical coherence tomography) investigation*

**18.00 – 18.10**

**Anghel Miruna Andreea** - *Evaluation of a teaching protocol for CAD-CAM technologies in a Romanian dental school*

**18.10 – 18.20**

**Mitruț Ioana** - *Comparative preclinical and histological study of hydrogels containing boric acid and calcium fructoborate on an experimental rat model of periodontal disease*

**18.20 – 18.30**

**Petrescu Stelian-Mihai-Sever** - *Analysis of odonto-periodontal stress by means of the finite element method for a patient with malocclusion*

**18.30 – 18.40**

**Tamara-Rahela Ioana** - *Surface analysis of orthodontic mini-implants after their clinical use*

**18.40 – 18.50**

**Bahrim Sebastian** - *The conventional impression technique, an endangered standard?*

**20.00 - 23.00 Gala Dinner – Hilton Hotel**

*(all registered participants / tickets)*





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July 21<sup>th</sup>, 2023

10.00 - 11.30, Room 1 – Hilton Hotel

**Invited Plenary Session 5**

Chair: Miculescu Marian

10.00 – 10.30

**Grădinaru Sebastian (Romania)** - *Biomaterials design strategies applicable for hernia repair*

10.30 – 11.00

**Cacciotti Ilaria (Italy)** - *Custom mad approach by additive manufacturing for maxillofacial applications*

11.00 – 11.30

**Ciurea Alexandru-Vlad (Romania)** - *Actual status of biomaterials in Romanian neurosurgery*

11.30-12.40

**Scientific Sessions 9**

Clinical applications of biomaterials, medical devices and their performance in neurosurgery

**Chairs:** Ciurea Alexandu-Vlad, Săceleanu Vicențiu, Pleș Horia

**Keynote Speakers:**

11.30 – 11.50

**Mohan Aurel** - *Cranioplasty after traumatic brain injury (TBI) – Customized polyetheretherketone (PEEK) cranial repair system implants review*

11.50 – 12.10

**Pleș Horia** - *Consensus statement on posttraumatic cranioplasty. Actual status and future directions*

12.10 – 12.30

**Amina Gharbi** - *Managing the dissolution kinetics of resorbable bioactive glass (BaG) to meet the unique requirements of different patient cohorts*

**Oral presentations:**

12.30 – 12.40

Pleș Horia - *Bicomponent fibrin glue obtained from the patients blood*





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**12.40-13.10, Room 1 – Hilton Hotel**

**Sponsor Presentations – Sun Wave Pharma**

**13.10-14.30**

**Workshop : Education at the frontier between engineering and medicine**

*Presentations and debates with the participation of the representative persons involved in universities management related to Medicine, Dental Medicine, Bioengineering, Medical Engineering, from Bucharest, Cluj-Napoca, Timisoara, Iasi, Oradea, Targu-Mures, Craiova, Galati, Sibiu.*

**14.30-15.00**

**Closing Ceremony**

Conference Awards Ceremony

Closing speech - Steering Committee





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## POSTERS

1. **Aurora Antoniac**, Iulian Antoniac, Alina Robu, Gheorghe Păltănea, Daniela Gheorgiță, Iuliana Corneschi  
Polymeric-based coatings for biodegradable Mg alloys
2. **Tiberiu Bița**, Ion Ciucă, Marian Miculescu, Gheorghe Păltănea, Ana-Iulia Bița, Iuliana Corneschi, Horațiu Dura, Iulian Antoniac  
Evaluation of the fluoride conversion coating effect on corrosion behavior of Mg–Zn–Ca–Mn alloys
3. Marin Mihaela, Buruiană Daniela Laura, Mocanu Alina Maria, Marin Florin Bogdan, **Bogatu Nicoleta Lucica**  
Heart Rate Monitoring Device Using Arduino Platform
4. **Alina Elena Bololoi**, Laura Elena Geambazu, Iulian Vasile Antoniac, Robert Viorel Bololoi, Ciprian Alexandru Manea, Dănuț Vasile Cojocaru, Delia Pătroi  
Solid State Processing of CoCrMoNbTi High Entropy Alloy for Biomedical Applications
5. **Buruiană Daniela-Laura**, Marin Florin Bogdan, Vasilache Florin, Gurău Gheorghe, Marin Mihaela, Ghisman Georgiana  
Holonc control of automatic chest compression device
6. **Borislav Dușan Caplar**, Emanuela Lidia Crăciunescu, Marius Țogoe, Carina Sonia Neagu, Christa Șerban, Andreea Novac, Mihai Romînu, Cosmin Sinescu, Meda-Lavinia Negruțiu, Vanesa Maria Diniș, Daniela Maria Pop  
Microscopic evaluation of the metal-ceramic interface for SLS framework
7. **Gabriela Ciungu**, Cristina Maria Iordache, Robert Ciocoiu, Brândușa Ghiban  
Structural characterization of a new ZnCu(Mg) biodegradable alloy





8. **Gabriel Cristescu**, Robert Bololoi, Marian Miculescu, Robert Ciocoiu, Alexandru Streza, Iulian Antoniac

A correlation between surface free energy - deformation degree for metallic materials used for prolonged contact with skin

9. **Nazem Dawod**, Iulian Antoniac, Marian Miculescu, Aurora Antoniac, Alina Robu, Elena Ungureanu

Influence of alloying with precious metals on the microstructure and corrosion resistance of the Co-Cr dental alloy

10. Robert Ciocoiu, Alina Necşulescu, Octavian Trante, **G. Dobri**, A. Banu, Nicolae Văleanu

Adapting the Girifalco - Good equation for metallic materials. A study on 5 alloys from the TNZT system

11. **Bogdan Dragomir**, Panaite Tinela, Olteanu Daniel, Karvelas Nikos, Alice Chehab, Raluca Vieriu

Comparative analysis of peak torque values during insertion and removal of three mini-implants: an in vitro investigation

12. **Norin Forna**, Paul-Dan Sirbu

Use of osteoconductive macroporous synthetic bone substitutes and plate osteosynthesis in the management of tibial plateau fractures

13. **Daniela Gheorghită**, Iulian Antoniac, Horațiu Moldovan, Aurora Antoniac, Alina Robu, Ana Bița, Anton Fikai, Ludmila Motelică

Influence of lavender essential oil on antioxidant, physical and biological properties of chitosan sponge for hemostatic applications

14. **Maria Eleonora Gherghina**, Lavinia Mărcuț, Veronica Mănescu (Păltânea), Aurora Antoniac, Gheorghe Păltânea, Alina Robu, Aurel George Mohan, Iuliana Corneschi, Robert Ciocoiu, Iulian Antoniac

Wetting properties of 3D printed antimicrobial PLA







**15. Cristina Maria Iordache, Gabriela Ciungu, Marian Miculescu, Robert Ciocoiu, Brândușa Ghiban**

Heat Treatment Influence on the Mechanical and Structure properties of a new Zn-Mg (Ca) biodegradable alloy

**16. Adriana Ileana (Blăjan), Robert Ciocoiu, Ion Ciucă, Doru Blăjan, Tiberiu Bița, Alina Robu, Gabriel Cristescu, Nicolae Văleanu**

Relating the structure with the mechanical behavior of surgical guides obtained by FDM

**17. Marina Roxana Iordăchescu, Alexandru Streza, Ana-Iulia Bița**

Microstructural characterization of metallic biomaterials used in the execution of surgical instruments for orthopedics

**18. Ștefan Alexandru Lăptoiu, Marian Miculescu, Mihai Cojocaru**

Sinterability of natural origin hidroxyapatite powder

**19. Pompilia Mioara Lopes, Violeta Popescu**

Development of a highly stable hydrogels formula utilizing gelatin, whey, and glucomannan as biomaterials

**20. Marin Florin Bogdan, Buruiană Daniela-Laura, Miron Laurențiu-Nicu, Gurău**

Gheorghe, Marin Mihaela

Intelligent active medical exoskeleton

**21. Ioana Maria Marinescu, Anca C.Parau, Alina Vlădescu (Dragomir), Mihaela Dinu,**

Cosmin M.Cotruț

Quaternary ZrCuCa-X thin films metallic glasses for orthopaedics

**22. Veronica Mănescu (Păltânea), Gheorghe Păltânea, Iulian Antoniac, Aurora Antoniac**

Potential of Biodegradable Magnetic Scaffolds for Bone Tissue Engineering and Oncology Applications





23. Doina Prodan, **Marioara Moldovan**, Ioan Petean, Stanca Cuc, Codruța Saroși, Miuța Filip, Gabriel Furtos

Obtaining and characterization of some inorganic precursors used in some restorative dental composites formulation

24. **Daniela Alina Necșulescu**, Mariana Ciurdaș, Robert Ciocoiu

Evaluation of the maintenance operation of forceps

25. **Mădălina Oprea**, Ștefan Ioan Voicu, Andreea Mădălina Pandelescu, Adrian Ionuț Nicoară

A novel generation of surface-functionalized cellulose acetate membranes for biomedical applications

26. **Violeta Popescu**, Pompilia-Mioara Purcea-Lopes

Protein-Based Hydrogels with Excellent Stability as Potential Matrix for Treating Ulcerative Wounds

27. **Alina Robu**, Iulian Antoniac, Veronica Mănescu (Păltânea), Robert Bololoi, Lavinia Nicolescu

Mechanical properties and in vitro degradation on biodegradable Mg-Zn-Ca alloys

28. Vasile Claudiu Ciubotaru, Petrică Vizureanu, **Andrei Victor Sandu**, Dragoș Cristian Achitei, Mădălina Simona Bălțatu

Metals Used in Ancient Medicine: Short Overview

29. Mihai Tofan, Petrică Vizureanu, Mădălina Simona Bălțatu, Doru Dumitru Burduhos-Nergis, **Andrei Victor Sandu**

Biomaterials Applications in Regenerative Medicine: Pioneering a Paradigm Shift in Healthcare

30. Marius Albert Mazilu, **Andrei Victor Sandu**, Petrică Vizureanu, Manuela Cristina Perju, Mădălina Simona Bălțatu

Titanium Alloys with Low Young's Modulus: A Promising Frontier for Advanced Engineering Applications





31. **Codruța Saroși**, Alexandrina Muntean, Petean Ioan, Prodan Doina, Filip Miuța, Cuc Stanca, Laura Monica Rusu, Mărioara Moldovan  
Amelogenin peptides-hydroxyapatite hydrogels for enamel remineralisation
32. **Iulian Spânu**, Aurora Antoniac, Alina Robu, Alexandru Streza, Iulian Antoniac  
Surface properties for the thermal spray copper-based coatings on different metallic alloys
33. **Alexandru Stere**, Ana-Iulia Bița, Iulian Antoniac  
Determining the possible causes of failure of an orthopedic screw-plate implant for clavicle fractures
34. **Alexandru Streza**, Iulian Antoniac, Veronica Păltânea, Robert Ciocoiu, Cosmin Nicolescu  
In vitro evaluation of corrosion behavior for two polymer-coated Mg-3Nd alloys
35. **Vlad - Gabriel Vasilescu**, Lucian -Toma Cioca  
Research on increasing the tissue compatibility of the dental implant to shorten the post-implantation healing period (Experimental Study)
36. **Călin-Ilie Mohor**, Ciprian Tănăsescu, Cosmin-Ioan Mohor\*, Mihai Faur, Andrei Moisin, Dan Crețu  
Treatment of Rectal Prolapse with Intraperitoneal Mesh (Textile Allograft)
37. **Sergiu Focsaneanu**, Antoniac Iulian, Aurora Antoniac, Alina Robu, Spânu Iulian  
A systematic review of dental surgical drill

# SPONSORI





# MEDICAL ORTOVIT

*tehnologia care vindecă*

Founded in 1997, **MEDICAL ORTOVIT** has continuously grown on a solid foundation and is now a leading provider of orthopaedic implants and other high-tech treatments.

The advantage of team professionalism – orthopaedic surgeons, scrub nurses, engineers - has materialized in the permanent gain of new valuable products in the company's portfolio, as well as by signing distribution contracts with major companies such as Smith+Nephew (UK/USA), Fournitures Hospitalieres and Groupe Lepine from France, Permedica (IT), Hofer from Austria and others.

The company's main activity is the retail trade of medical devices and it's covering all the needed aspects of the orthopaedic patient treatment, having 4 main departments:

- **RECONSTRUCTION** (joint replacements) : hip, knee, shoulder, ankle, elbow, tumorous solutions, robotics devices/ CORI
- **TRAUMA** (fractures treatment implants) : from screws and plates to complex systems as TSF / T aylor Spatial Frame, an advanced computerized external fixator
- **SPORTS MEDICINE** (endoscopic implants and instrumentation) – state of the art solutions provided by Smith+Nephew, one of the major players worldwide
- **ADVANCED WOUND MANAGEMENT** (special dressings and treatment systems for advanced wound care) – including here the negative pressure treatment systems

Among the company's flagship products are the JOURNEY, LEGION and GENESIS II knee prostheses, OXINIUM components and customised implantation through the VISIONAIRE system, SURESHOT precise and totally radiations free distal targeting device, PICO compact and totally portable negative pressure wound therapy device a.s.o.

**MEDICAL ORTOVIT** is also involved in numerous scientific research projects such as:

*"Medical device for the treatment of joint diseases based on nanomaterials and magnetic field effects"* 2009-2011

*"Nanostructured materials for surface functionalization of joint endoprotheses with reduced wear"* 2009-2011

*"Resorbable implants used in arthroscopy made of Biomimetic Biomaterials"* 2009-2011

*"Macroporous injectable bioactive biomaterials for bone regeneration"* 2012-2015

*"Obtaining biodegradable magnesium alloy implants for use in ankle and foot surgery"* 2014-2017

*"Ligament reconstruction using advanced structural materials based on synthetic and natural polymers"* 2014-2017

The company has also worked alongside scientific partners in registering a patent entitled *"Hydrated biocomposite supports with enzymatically cross-linked polypeptide component, for cell growth and regeneration/tissue modelling and the obtaining method"*.

We stay up to date with scientific progress and we want to be part of it.

As our logo states: **technology that heals.**

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# SANTE

## INTERNATIONAL

Founded in 1992, Sante International has as its object of activity the sale of medical equipment starting from the concrete needs of potential beneficiaries. Our mission is to always offer our customers and business partners the best quality equipment and exceptional services. The main market segment we address is represented by hospitals belonging to the public sector, without neglecting the large-scale private initiatives in the field. Sante International has in its client portfolio over 500 medical service providers from Romania and the Republic of Moldova. The basic principle regarding our activity is that we offer complete solutions, starting with the consulting activity, the placement of the equipment that best meets the customer's requirements and the maintenance activity, service and after-sales support.

Our product portfolio is the result of a rigorous selection process that took place in more than 30 years of activity. As a result, we have established a strong partnership with the most prestigious suppliers of medical instruments and supplies in the world: Siemens Healthcare Diagnostics, Abbott / St. Jude Medical, Ecolab, CISA, Aerocom and AccuVein USA. Our product portfolio includes, among others: integrated laboratory equipment and systems, products for cardiovascular surgery and electrophysiology, hygiene solutions and disinfectants for surfaces, instruments, skin and air, vein illuminators, sterilization systems, pneumatic transport system and macerators.

In order to meet the high expectations of our customers and partners, Sante International implemented a quality management system, certified in 2000 by DQS-Germany according to SR EN ISO 9002, currently recertified ISO 9001/2015 and in 2022 we obtained the system certification of information security management ISO 27001:2013.

[www.sante.ro](http://www.sante.ro)

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Timisoara Office:

Ghirodei Street, no. 36

Cluj Office:

Calea Dorobantilor, no. 111

Iasi Office:

Lascar Catargiu Street, no. 37



# GEMA EQUIPMENTS

**Gema Equipments** is a leading company in the field of medical device distribution and integration in Romania, with decades of experience serving the Romanian healthcare market. Our company operates as a national integrator as we offer complete solutions for equipping operating rooms, intensive care units, and imaging departments.

With a deep understanding of the unique needs and challenges of the Romanian healthcare system, Gema Equipments has continuously evolved and expanded its product offerings to meet the demands of our customers. We pride ourselves on being a trusted partner for hospitals, clinics, and other healthcare facilities across the country.

At Gema Equipments, we have built our success on a foundation of quality, innovation, and expertise. We work closely with renowned international manufacturers who share our commitment to providing cutting-edge medical devices that enhance patient care and improve clinical outcomes. We actively monitor trends and advancements in medical technology, allowing us to anticipate the needs of our customers and identify innovative solutions that can drive positive change in patient care.

Our partners:

***7D Surgical, CMR Surgical, Meril, BHS Technologies,  
IRRAS USA, Mego Afek, Nitrocare, Getinge, Karl Storz,  
B Braun, Nihon Kohden, LSI Solutions, Condor.***

# Medtronic

We are so much more than a medical device company: We have a bold ambition to become the global leader in healthcare technology.

Brand is much more than a logo. It's how an organization looks, what it says, how it sounds, and the interactions it has with internal and external audiences. Ultimately, a brand is defined by the sum of all experiences someone has with an organization.

The Medtronic brand is built on a foundation of core ideas, beliefs, and strategy. These include key concepts about what brand is, the role it plays in our organization, how we define our brand.

With 70 years of leadership in healthcare technology and a global team of over 95,000 people constantly pursuing better outcomes for patients, physicians, and caregivers and with a profound understanding of the human body, we accelerate medical innovation.

It all started in 1949 with a big dream in a small garage. Our co-founder, Earl Bakken, was committed to a bold idea: positively contributing to human welfare, from the world's first battery-powered pacemaker to groundbreaking surgical robotics, our purpose remains the same:

## **Engineering the extraordinary.**

Written in 1960, our Mission drives everything we do, to contribute to human welfare by application of biomedical engineering in the research, design, manufacture, and sale of instruments or appliances that alleviate pain, restore health, and extend life, to direct our growth in the areas of biomedical engineering, to strive without reserve for the greatest possible reliability and quality in our products, to recognize the personal worth of all employees and maintain good citizenship.

## **What we do?**

We attack the world's most complex and challenging health problems, our therapies and solutions span four portfolios to treat more than 70 conditions in the human body: Cardiovascular, Medical Surgical, Neuroscience and Diabetes.

**Cardiovascular:** Cardiac Ablation Solution, Cardiac Surgery, Mechanical Circulatory Support, Cardiac Rhythm Management, Peripheral Vascular Health, Structural Heart and Aortic, Coronary & Renal Denervation, Cardiovascular Diagnostics and Services.

**Medical Surgical:** Surgical Robotics, Patient Monitoring, Respiratory Interventions, Surgical Innovations.

**Neuroscience:** Cranial & Spinal Technologies, Pelvic Health, Neurovascular, Neuromodulation, Ear/Nose/Throat.

**Diabetes:** Type 1 diabetes and Type 2 diabetes

Our progress is driven by constant innovation that creates new markets and growth opportunities.

At Medtronic, our Mission-led social impact and sustainability efforts encompass many proactive initiatives — driven by our core business, our functions and regions, our leadership, the Medtronic Foundation, and Medtronic LABS. These efforts create and catalyze positive societal and environmental change in communities around the world. The impact communications strategy aligns with our Mission, brand purpose, and commitments. It speaks to our broader role in society and amplifies our efforts to become the world's most admired healthcare technology leader. Our impact work and messaging serve as critical proof of our "better outcomes for our world" commitment in our brand and culture framework. This commitment asserts that our purpose-led strategies and contributions help create better outcomes around the world for patients, healthcare professionals, and the communities where we live and work. Beyond our advancements in clinical outcomes, it also includes the societal and environmental outcomes we create.



Driving impact through purpose is nothing new for Medtronic. Six words have motivated us to engineer the extraordinary for 60 years and counting: Alleviate pain. Restore health. Extend life. Our Mission was designed around how we serve patients, our healthcare partners, our employees, and our communities. Our focus on improving health outcomes remains constant in the face of evolving global challenges. With more than 90,000 people in more than 175 countries, we see extraordinary possibilities to further increase our positive impact in the world. We are committed to creating better outcomes for our world by accelerating access to healthcare technology; advancing inclusion, diversity, and equity; and protecting our planet. We work to integrate sustainability into our business and prioritize the highest quality standards for a more transparent, ethical, and resilient company. We push ourselves to continually expand what it means to be a purpose-driven company, partnering and engaging openly with stakeholders and society for global good. In all we do, people come first.

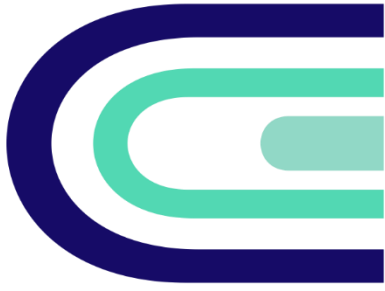
**Pillar: Accelerating access to healthcare technology** by combining the power of healthcare technology with strong partnerships, Medtronic is helping put equity within reach. More than half the world's population lacks access to essential healthcare. And the deadliest diseases disproportionately impact marginalized populations. Healthcare technology can be a profound equalizer. We partner with health systems to bring revolutionary technology to communities around the world.

- Medtronic LABS is changing the health equity narrative: The only health systems innovator that develops community-based, tech-enabled solutions for marginalized populations, Medtronic LABS has reached over 1M patients to date. An independent nonprofit organization funded by Medtronic, LABS drives system-level transformation to enable scalable, sustainable, last-mile healthcare delivery.

- Technology is a bridge to better health access: Emerging technology is bringing healthcare to more people in new ways. We harness the power of data to address undertreatment, detect risk and redefine patient access. From preventive care to research-driven treatment models, Medtronic delivers tech-enabled solutions for marginalized populations and health systems.

- Partnerships are key to achieving healthcare equity: We tailor our approach to meet the specific health needs of individual communities. By partnering with health systems, governments, businesses, NGOs, and others, we identify gaps in care to build customized programs. Our partnerships rally the best minds to advance health equity and drive system level transformation.

**Boldly turning the unknown into answers. And answers into actions.  
This is our promise. We engineer the extraordinary.**



# EPSYLON GROUP

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**SC EPSYLON GROUP SRL** is a Romanian company active on Romanian medical devices market.

We are authorized by Ministry of Health to import and distribute medical devices to public and private hospitals and clinics. We have ISO 9001:2008 certification for our import and distribution activity.

**Epsilon Group** in unique importer and distributor for Romanian market for the following manufacturers:

- **JOTEC GmbH** - Germany (part of Artivion – USA) – vascular grafts (polyester and PTFE), endovascular devices and consumables;
- **ON-X Life Technologies** – USA (part of Artivion – USA) – mechanical heart valves
- **Ascyrus Medical** – Canada (part of Artivion – USA) AMDS device for aortic arch
- **Peters Surgical** – France – surgical suture for general and specialized surgery, meshes, titanium and polymer ligating clips, various surgical accessories.
- **Welfare Medical** – UK – mechanical suture (staplers), laparoscopic devices electro surgery consumables, catheters
- **Andanza** – Germany – compression bandages for closing punctured arteries or veins after minim invasive procedures

Our activity on Romanian market includes:

1. Import of medical devices and consumables from our suppliers
2. Medical promotion of the products we import and distribute. We are visiting regularly targeted doctors from public and private hospitals.
3. Our sales team includes sales manager and 5 medical representatives with extensive experience in medical devices sales.
4. Assist together with proctor to each endovascular implantation
5. Distribution of the medical devices and consumables to public and private hospitals and to sub distributors and partners. Together with our partners we achieved national coverage.

Below are listed some of the hospitals where we are distributing directly:

- Bucharest Emergency University Hospital
- Bucharest Clinic University Hospital
- Elias Emergency University Hospital
- Cantacuzino Hospital
- Military Emergency Hospital
- Cluj Heart Institute
- Constanta Emergency County Hospital
- Timisoara Emergency County Hospital
- Bucharest Sanador Hospital
- Brasov ICCO Hospital

Through our partners, the products we distribute are sold also in:

- Targu Mures Emergency County Hospital
- Targu Mures Heart Institute
- Oradea Emergency County Hospital
- Sibiu Emergency County Hospital
- Cluj Emergency County Hospital
- Baia Mare Emergency County Hospital
- Arad Emergency County Hospital
- Brasov Emergency County Hospital

Mihai Popovici Turnea  
Commercial Manager



# SMART HEALTH GROUP

*Excellence is our speciality*

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# MED HEALTH CARE PROJECT



## Sun Wave Pharma

Making Tomorrow Healthier