BIOMATERIALS AND NOVEL TECHNOLOGIES FOR HEALTHCARE

5TH BIOMAH BIENNIAL INTERNATIONAL CONFERENCE

13-16 OCTOBER, 2026

BIOMATERIALS AND NOVEL TECHNOLOGIES FOR HEALTHCARE

13-16 OCTOBER, 2026

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Biomaterials Erlangen

Dear Colleagues and Friends,

It is our great pleasure to welcome you to BioMaH 2026 – Biomaterials and Novel Technologies for Healthcare, an international conference dedicated to the latest advances in biomaterials science and emerging technologies for improving human health.

Over the years, BioMaH has become a meeting place for researchers, clinicians, engineers, and professionals from different disciplines, providing a unique forum for scientific exchange, discussion, and the development of new collaborations. The complexity of today's healthcare challenges requires a multidisciplinary approach, where materials science, biology, engineering, and medicine converge to create innovative solutions for diagnosis, treatment, tissue repair, and regeneration.

The scientific programme of BioMaH 2026 reflects the dynamic evolution of the field, covering cutting-edge topics including advanced biomaterials, regenerative medicine, bioactive and multifunctional materials, nanotechnology, biomedical devices, implantable systems, and novel approaches for personalized healthcare. Particular attention is devoted to fostering interactions between fundamental research and clinical applications, promoting the translation of innovative concepts into effective medical technologies.

This conference would not have been possible without the dedication and enthusiasm of the Scientific and Organizing Committees, the contribution of our Plenary, Keynote and Oral speakers and Poster presenters, the support of our partners, and the active participation of all attendees. I would like to express my sincere gratitude to everyone who has contributed to creating this scientific event and to all researchers who will share their knowledge, ideas, and discoveries during the conference.

I hope that BioMaH 2026 will provide an inspiring environment for scientific discussion, networking, and the establishment of new collaborations, strengthening the international community dedicated to the development of advanced biomaterials and technologies for healthcare.

We wish you all a successful and stimulating conference.

Julietta V. Rau

Chair, BioMaH 2026

and the BioMaH Organizing Committee

5TH BIOMAH CONFERENCE

BIOMATERIALS AND NOVEL TECHNOLOGIES FOR HEALTHCARE

OCTOBER 13-16, 2026

Consiglio Nazionale delle Ricerche, Piazzale Aldo Moro 7, Rome

PRESIDENTS

IULIAN V. ANTONIAC

(National University of Science and Technology Politehnica Bucharest, Romania)

ALDO R. BOCCACCINI

(Friedrich-Alexander University of Erlangen-Nuernberg, Germany)

CHAIR

JULIETTA V. RAU

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

SESSIONS:

1. PLENARY
2. ADVANCED MATERIALS AND METHODS IN ORTHOPAEDICS
3. BIOMATERIALS AND ADVANCED MODELS FOR INTERVERTEBRAL DISC REGENERATION
4. MATERIALS FOR DENTISTRY AND FACIAL PROSTHETICS
5. EORS "INNOVATING BIOMATERIALS: FROM CLINICAL NEEDS TO ADVANCED BIOLOGICAL TESTING"
6. BIODEGRADABLE ALLOYS FOR BIOMEDICAL IMPLANTS
7. REGENERATIVE MEDICINE AND TISSUE ENGINEERING 1
8. REGENERATIVE MEDICINE AND TISSUE ENGINEERING 2
9. REGENERATIVE MEDICINE AND TISSUE ENGINEERING 3
10. BIOMEDICAL IMPLANTS 1
11. BIOMEDICAL IMPLANTS 2
12. SUSTAINABLE AND GREEN TECHNOLOGIES IN BIOMEDICAL RESEARCH
13. ADDITIVE MANUFACTURING & BIOFABRICATION 1
14. ADDITIVE MANUFACTURING & BIOFABRICATION 2
15. NANOMATERIALS AND BIOSENSORS FOR CLINICAL APPLICATIONS
16. MATERIALS IN CARDIOVASCULAR SURGERY AND TISSUE ENGINEERING
17. NEUROSURGERY
18. SCIENCE MEETS ART

🏆 **NOTE:** ORAL AND POSTER CONTRIBUTIONS MARKED WITH THE SYMBOL 🏆 ARE ELIGIBLE FOR THE YOUNG ORAL AWARD and YOUNG POSTER AWARD.

OCTOBER 13TH TUESDAY

8.00-9.00 REGISTRATION

SALA CONVEGNI

9.00-9.30 **CONFERENCE OPENING AND AUTHORITIES' GREETINGS**

IULIAN V. ANTONIAC - PRESIDENT

ALDO R. BOCCACCINI - PRESIDENT

ALDO DI CARLO - DIRECTOR OF HOSTING INSTITUTION: INSTITUTE OF THE STRUCTURE OF MATTER OF THE ITALIAN NATIONAL RESEARCH COUNCIL (ISM-CNR)

DINO FIORANI – FORMER DIRECTOR OF ISM-CNR, EMERITUS RESEARCHER OF CNR

JULIETTA RAU - CHAIR

SESSION 1
PLENARY

CHAIRS: PROF. ALDO R. BOCCACCINI, PROF. IULIAN V. ANTONIAC, PROF. LUIGI AMBROSIO and DR. JULIETTA V. RAU

SALA CONVEGNI

9.30-10.00 **PLENARY SPEAKER** **PROF. IULIAN V. ANTONIAC** (ROMANIA)

PRESIDENT OF THE ROMANIAN SOCIETY FOR BIOMATERIALS HEAD OF MATERIALS SCIENCE AND ENGINEERING DEPARTMENT AND MEMBER OF THE SENATE OF NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA BUCHAREST;
PAST PRESIDENT OF THE INTERNATIONAL SOCIETY FOR CERAMICS IN MEDICINE; FULL MEMBER OF THE ROMANIAN ACADEMY OF SCIENTIST

BIOMATERIALS AND NEW TECHNOLOGIES FOR HEALTHCARE: INNOVATIONS IMPACTING RESEARCH AND DEVELOPMENT

10.00-10.30 **PLENARY SPEAKER** **PROF. ALDO R. BOCCACCINI** (GERMANY)

HEAD, INSTITUTE OF BIOMATERIALS, UNIVERSITY OF ERLANGEN-NUREMBERG VISITING PROFESSOR OF MATERIALS SCIENCE AND ENGINEERING, DEPARTMENT OF MATERIALS, IMPERIAL COLLEGE LONDON, UK

BIOACTIVE GLASSES AND IONIC MEDICINE: PROGRESS AND CHALLENGES

10.30-11.00 **PLENARY SPEAKER** **DR. CHRISTOPHE DROUET** (FRANCE)

DEPUTY DIRECTOR OF CIRIMAT, CNRS RESEARCH DIRECTOR, CIRIMAT – UNIVERSITY OF TOULOUSE, FRANCE HONORARY PRESIDENT OF MATSAN – MATERIALS FOR HEALTHCARE COMMISSION, FRANCE COORDINATOR OF FRENCH NETWORK "GDR CNRS BIOMIM – BIOMIMETISM AND BIOINSPIRATION"

WHEN BIOINSPIRATION FEEDS INNOVATION: A STORY OF SMART CERAMIC SYSTEMS IN (NANO)MEDICINE

11.00-11.30 **COFFEE BREAK + GROUP PHOTO**

11.30-12.00 **PLENARY SPEAKER** **DR. DEEPAK VASHISHTH** (USA)

CO-DIRECTOR, RPI-ICAHN SCHOOL OF MEDICINE CENTER FOR ENGINEERING AND PRECISION MEDICINE YAMADA CORPORATION CHAIRED PROFESSOR, DEPARTMENT OF BIOMEDICAL ENGINEERING RENSSELAER POLYTECHNIC INSTITUTE(RPI), NEW YORK

VITA NUOVA: A NEW LIFE FOR OLD BONES, REVITALIZING, RESTORING, AND REBUILDING THE MATRIX

12.00-12.30 **PLENARY SPEAKER** **PROF. YUFENG ZHENG** (CHINA) Ph.D, FBSE, FAIMBE

DIRECTOR OF THE INSTITUTE OF HEALTHCARE MATERIALS, SCHOOL OF MATERIALS SCIENCE AND ENGINEERING PEKING UNIVERSITY, BEIJING

BIODEGRADABLE METALS: CURRENT RESEARCH STATUS AND FUTURE RESEARCH DIRECTION

12.30-13.30 **LUNCH**

SESSION 2
ADVANCED MATERIALS AND METHODS IN ORTHOPAEDICS

CHAIRS: PROF. LUIGI AMBROSIO and PROF. BOYKO GUEORGUIEV

SALA CONVEGNI

13.30-13.55 **KEYNOTE SPEAKER** **PROF. DR. BOYKO GUEORGUIEV** (SWITZERLAND)

AO RESEARCH INSTITUTE DAVOS, SWITZERLAND
PRESIDENT OF THE EUROPEAN ORTOPEDIC RESEARCH SOCIETY

INNOVATIONS IN FRACTURE CARE – FROM BIOMECHANICS TO PROGNOSIS AND CLINICAL APPLICATIONS

13.55-14.20 **KEYNOTE SPEAKER** **PROF. DR. ULRIKE RITZ** (GERMANY)

DEPARTMENT OF ORTHOPEDICS AND TRAUMATOLOGY, UNIVERSITY MEDICAL CENTER MAINZ, GERMANY

MULTIFUNCTIONAL FIVE-LAYER COLLAGEN LAMINATES FOR INTEGRATED INFECTION CONTROL AND BONE REGENERATION IN CONTAMINATED FRACTURE MODELS

14.20-14.45 **KEYNOTE SPEAKER** **DR. MARIA GRAZIA RAUCCI** (ITALY)

INSTITUTE OF POLYMERS, COMPOSITES AND BIOMATERIALS – NATIONAL RESEARCH COUNCIL (IPCB-CNR), NAPLES

ENGINEERING SMART THERAGENERATIVE HYDROGELS AS LIVING MATERIALS FOR BONE REGENERATION

SPEAKERS

14.45-15.00 **PROF. FRANZ E. WEBER** (SWITZERLAND)

UNIVERSITY ZURICH, CENTER FOR DENTAL MEDICINE, ORAL BIOTECHNOLOGY & BIOENGINEERING, ZURICH

OPTIMIZED MICROARCHITECTURE FOR BONE SUBSTITUTES AND FUNCTIONALIZATION WITH EXOSOMES.

15.00-15.15 **DR. SHALINI MUTHUSAMY** (INDIA)

DEPARTMENT OF BIOCHEMISTRY AND BIOTECHNOLOGY, CSIR CENTRAL LEATHER RESEARCH INSTITUTE, TAMIL NADU, INDIA

GENETIC CODE EXPANDED CATECHOL MEDIATED BRIDGING OF OSTEOGENESIS AND ANGIOGENESIS

15.15-15.30 **DR. ALESSANDRO CIANCIOSI** (SWITZERLAND)

AO RESEARCH INSTITUTE DAVOS

INTEGRATING FARADAY WAVE-INDUCED CELL PATTERNING AND OPTICAL FIBER-ASSISTED PRINTING FOR CARTILAGE IN VITRO MODEL DEVELOPMENT

15.30-15.45 **DR. PERY FREITAS** (ITALY)

POLITECNICO DI TORINO, DEPARTMENT OF APPLIED SCIENCE AND TECHNOLOGY, TORINO

SURFACE FUNCTIONALISATION OF ARTIFICIAL CARBONATED APATITE BONE SUBSTITUTE WITH A STRONTIUM-ASSOCIATED A-TOCOPHERYL PHOSPHATE BIOACTIVE LAYER

15.45-16.30 **COFFEE BREAK + POSTER SESSION 1**

SESSION 3

SUSTAINABLE AND GREEN TECHNOLOGIES IN BIOMEDICAL RESEARCH

CHAIRS: PROF. DR. GÜLTEKIN GÖLLER and PROF. ANTONIETTA PEPE

SALA CONVEGNI

16.30-16.55 **KEYNOTE SPEAKER** **PROF. DR. GÜLTEKIN GÖLLER** (TURKEY)

MATERIALS SCIENCE IN ISTANBUL TECHNICAL UNIVERSITY, DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING, MASLAK, ISTANBUL

SUSTAINABLE PLANT-BASED CAPSULE TECHNOLOGIES FOR ADVANCED PHARMACEUTICAL APPLICATIONS

SPEAKERS

16.55-17.10 **PROF. ANTONIETTA PEPE** (ITALY)

DEPARTMENT OF BASIC AND APPLIED SCIENCES, UNIVERSITY OF BASILICATA, POTENZA, ITALY

BIOACTIVE BIOMEDICAL DEVICES BASED ON ELECTROSPUN SCAFFOLDS INCORPORATING SUSTAINABLE PROPOLIS EXTRACTS

17.10-17.25 **DR. SILA KILIC-CEVIRGEL** (TURKEY)

ISTANBUL TECHNICAL UNIVERSITY, DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING, MASLAK, ISTANBUL, TURKEY YEDITEPE UNIVERSITY, FACULTY OF PHARMACY, DEPARTMENT OF PHARMACEUTICAL ANALYTICAL CHEMISTRY, ATASEHIR, ISTANBUL, TURKEY

EXTRACTION OF CELLULOSE FROM AGRICULTURAL WASTES FOR SUSTAINABLE BIOMATERIAL APPLICATIONS

17.25-17.40 **DR. BRIGIDA BOCHICCHIO** (ITALY)

DEPARTMENT OF BASIC AND APPLIED SCIENCES, UNIVERSITY OF BASILICATA, POTENZA, ITALY

ELECTROSPUN SCAFFOLD ENRICHED WITH BIOACTIVE MOLECULES AS NANOFIBERED MEDICAL DEVICES

17.40-17.55 **DR. ELISA BATONI** (ITALY)

RESEARCH CENTER "E. PIAGGIO", UNIVERSITY OF PISA, PISA, ITALY
DEPARTMENT OF INFORMATION ENGINEERING, UNIVERSITY OF PISA, PISA, ITALY
DEPARTMENT OF PHARMACY, UNIVERSITY OF PISA, PISA, ITALY

TOWARDS SUSTAINABLE BIOMATERIALS AND BIOFABRICATION FOR TISSUE ENGINEERING: VALORISATION OF INDUSTRIAL WASTE AND NATURAL RESOURCES

SESSION 4

MATERIALS FOR DENTISTRY AND FACIAL PROSTHETICS

CHAIRS: PROF. DR. HORIA OCTAVIAN MANOLEA and PROF. DR. MARIUS MANOLE

SALA MARCONI

13.40-14.05 **KEYNOTE SPEAKER** **PROF. DR. HORIA OCTAVIAN MANOLEA, MD** (ROMANIA)

DEPARTMENT OF DENTAL MATERIALS, FACULTY OF DENTISTRY, UNIVERSITY OF MEDICINE AND PHARMACY CRAIOVA

ARTIFICIAL INTELLIGENCE IN DENTISTRY AND DENTAL RESEARCH

14.05-14.30 **KEYNOTE SPEAKER** **PROF. DR. MARIUS MANOLE** (ROMANIA)

DEPARTMENT OF PROSTHETICS AND DENTAL MATERIALS, FACULTY OF DENTISTRY, IULIU HATIEGANU UNIVERSITY OF MEDICINE AND PHARMACY, CLUJ-NAPOCA

PROSTHETIC DENTAL REHABILITATION: FROM ANALOGIC TO DIGITAL

SPEAKERS

14.30-14.45 **DR. MADDALENA PACZKOWSKA-WALENDOWSKA** (POLAND)

POZNAN UNIVERSITY OF MEDICAL SCIENCES, DEPARTMENT OF PHARMACOGNOSY AND BIOMATERIALS, POZNAN

MULTIFUNCTIONAL BIOMATERIALS IN REGENERATIVE DENTISTRY - A PHARMACEUTICAL PERSPECTIVE TOWARD CLINICAL EXPECTATIONS

14.45-15.00 **DR. RADU M. PISC** (ROMANIA)

DEPARTAMENT OF ORTHODONTICS AND DENTOFACIAL ORTOPAEDICS, FACULTY OF DENTAL MEDICINE, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA

RESEARCH TO IMPROVE FIXED ORTHODONTIC TREATMENT OF THIRTY SIX ANGLE CLASS II SEVERE MALOCCLUSIONS WITH PREMOLAR EXTRACTIONS USING A MODIFIED ORTHODONTIC SCIENTIFIC SIMULATOR

15.00-15.15 **DR. MIRUNA ANDREEA ANGHEL** (ROMANIA)

DEPARTMENT OF DENTAL PROSTHESIS TECHNOLOGY, FACULTY OF DENTISTRY, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA

EVALUATION OF THE IMPACT OF POST-CURING PROTOCOLS ON THE DIMENSIONAL FIDELITY OF PROVISIONAL RESTORATIONS MADE USING OPEN-SYSTEM 3D PRINTING TECHNOLOGIES.

15.15-15.30 **DR. FARRUKH ERKINOV** (UZHBEKISTAN)

TASHKENT INSTITUTE OF CHEMICAL TECHNOLOGY

DEVELOPMENT OF DENTAL CEMENT FORMULATIONS BASED ON LOCAL RAW MATERIALS OF UZBEKISTAN

15.30-15.45 **DR. STELIAN MIHAI SEVER PETRESCU** (ROMANIA)

DEPARTAMENT OF ORTHODONTICS AND DENTOFACIAL ORTOPAEDICS, FACULTY OF DENTAL MEDICINE, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA

ANALYSIS OF TEMPERATURE INDUCED EFFECTS ON AN ORTHODONTIC SYSTEM USING THE FINITE ELEMENT METHOD

15.45-16.30 **COFFEE BREAK + POSTER SESSION 1**

16.30-16.45 **DR. CĂTĂLIN POPA** (ROMANIA)

DEPARTMENT OF PROSTHESIS TECHNOLOGY, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA

COMPARATIVE EVALUATION OF THE MANUFACTURING ACCURACY OF METAL PROSTHETIC COPINGS PRODUCED BY THREE DIGITAL TECHNOLOGIES

16.45-17.00 **DR. RADU-MIHAI SLĂVOIU** (ROMANIA)

DEPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY, FACULTY OF DENTAL MEDICINE, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA

MAGNESIUM ALLOYS AS BONE GRAFT MATERIALS IN ORAL SURGERY: CT AND MICROCT ANALYSIS

17.00-17.15 **DR. SE HUN CHUNG** (UNITED KINGDOM)

ACADEMIC CENTRE OF RECONSTRUCTIVE SCIENCE, FACULTY OF DENTISTRY, ORAL AND CRANIOFACIAL SCIENCES, KING'S COLLEGE LONDON, LONDON

EFFECT OF UV EXPOSURE ON COLOUR STABILITY OF PIGMENTED SILICONE PROSTHESES: A STUDY ON ETHNIC SKIN TONE VARIABILITY

17.15-17.30 **DR. KATHRYN CHAMBERLAIN** (UNITED KINGDOM)

DEPARTMENT OF LIFE SCIENCES, MANCHESTER METROPOLITAN UNIVERSITY, MANCHESTER

THE EFFECTS OF SKIN TONE ON THE MECHANICAL PROPERTIES OF MAXILLOFACIAL SILICONE FOR FACIAL PROSTHETICS

17.30-17.45 **DR. KOKOLO ETIOWO** (FRANCE)

UNIVERSITÉ DE STRASBOURG, CNRS, INSTITUT CHARLES SADRON, STRASBOURG

MINIMALLY INVASIVE SURGERY FOR SINUS LIFT BONE REPAIR: POLYBUTYLENE SUCCINATE-BASED FOAMS

OCTOBER 14TH WEDNESDAY

SESSION 5

EUROPEAN ORTHOPEDIC RESEARCH SOCIETY (EORS) BIOMAH CLINICAL BRIDGE: UNMET NEEDS AND INNOVATING BIOMATERIALS: FROM CLINICAL NEEDS TO ADVANCED BIOLOGICAL TESTING

CHAIRS: PROF. EDUARDO GARCÍA-REY and PROF. GABRIELA GRAZIANI

SALA CONVEGNI

09.05-09.30 **KEYNOTE SPEAKER** **PROF. EDUARDO GARCÍA-REY** (SPAIN)

DEPARTMENT OF ORTHOPAEDIC SURGERY AND TRAUMATOLOGY UNIVERSITY LA PAZ HOSPITAL, MADRID DEPARMENT OF SURGERY, SCHOOL OF MEDICINE UNIVERSIDAD AUTÓNOMA DE MADRID

MODERN COATINGS IN TOTAL JOINT ARTHROPLASTY: HALF CENTURY IN THE LIMELIGHT

09.30-09.55 **KEYNOTE SPEAKER** **PROF. PETR HUMPOLÍČEK** (CZECH REPUBLIC)

CENTRE OF POLYMER SYSTEMS, TOMAS BATA UNIVERSITY, ZLÍN

FROM CONDUCTIVITY TO INSTRUCTIVITY: HOW CELL- AND IMMUNE-INSTRUCTIVE CONDUCTING POLYMERS CAN ADVANCE IN VITRO TISSUE MODELS.

09.55-10.20 **KEYNOTE SPEAKER** **PROF. DIETMAR W. HUTMACHER** (AUSTRALIA)

MAX PLANCK QUEENSLAND CENTRE (MPQC) FOR THE MATERIALS SCIENCE OF EXTRACELLULAR MATRICES, GREATER BRISBANE AREA, AUSTRALIA

BIOMEDICALLY ENGINEERED NEW APPROACH METHODOLOGIES FOR THE STUDY OF IMPLANT-ASSOCIATED INFECTIONS

SPEAKERS

10.20-10.35 **DR. LAURA SALDAÑA** (SPAIN)

TRANSLATIONAL RESEARCH IN OSTEOARTICULAR SURGERY, HOSPITAL LA PAZ INSTITUTE FOR HEALTH RESEARCH (IDIPAZ), MADRID BIOMEDICAL RESEARCH NETWORKING CENTRE ON BIOENGINEERING, BIOMATERIALS AND NANOMEDICINE (CIBER-BBN), MADRID

HYDROGEL COMPOSITION AND STIFFNESS MODULATE MSC AND MACROPHAGE RESPONSES: IMPLICATIONS FOR HIP OSTEONECROSIS THERAPY

10.35-10.50 **DR. GEMMA VALLÉS** (SPAIN)

TRANSLATIONAL RESEARCH IN OSTEOARTICULAR SURGERY, HOSPITAL LA PAZ INSTITUTE FOR HEALTH RESEARCH (IDIPAZ), MADRID BIOMEDICAL RESEARCH NETWORKING CENTRE ON BIOENGINEERING, BIOMATERIALS AND NANOMEDICINE (CIBER-BBN), MADRID

BIOLOGICAL MARKERS FOR IMPLANTS EVALUATION: SERUM PROTEINS FOR WEAR AND ASEPTIC LOOSENING

10.50-11.05 **DR. FABRIZIO RUSSO** (ITALY)

LABORATORY OF REGENERATIVE ORTHOPAEDICS, RESEARCH UNIT OF ORTHOPAEDIC, DEPARTMENT OF MEDICINE AND SURGERY, UNIVERSITÀ CAMPUS BIO-MEDICO DI ROMA OPERATIVE RESEARCH UNIT OF ORTHOPAEDICS, FONDAZIONE POLICLINICO UNIVERSITARIO CAMPUS BIO-MEDICO

WHY SPINE FUSION STILL FAILS: CLINICAL CHALLENGES DRIVING THE NEXT GENERATION OF BIOMATERIALS AND REGENERATIVE THERAPIES

11.05-11.55 **COFFEE BREAK + POSTER SESSION 2**

SESSION 6

BIOMATERIALS AND ADVANCED MODELS FOR INTERVERTEBRAL DISC REGENERATION

CHAIRS: PROF. BOYKO GUEORGUIEV and DR. LAURA SALDAÑA

SALA CONVEGNI

11.55-12.20 **KEYNOTE SPEAKER** **PROF. GIANLUCA VADALÀ** (ITALY)

PRESIDENT OF THE ITALIAN ORTHOPAEDIC RESEARCH SOCIETY; LABORATORY OF REGENERATIVE ORTHOPAEDICS, RESEARCH UNIT OF ORTHOPAEDIC, DEPARTMENT OF MEDICINE AND SURGERY, UNIVERSITÀ CAMPUS BIO-MEDICO DI ROMA, ITALY; OPERATIVE RESEARCH UNIT OF ORTHOPAEDICS, FONDAZIONE POLICLINICO UNIVERSITARIO CAMPUS BIO-MEDICO, ITALY

FROM BENCH TO BEDSIDE IN INTERVERTEBRAL DISC REGENERATION: BIOMATERIALS, ADVANCED MODELS AND CELL-BASED THERAPIES

12.20-12.45 **KEYNOTE SPEAKER** **PROF. JENNIFER R. WEISER** (USA)

PROFESSOR OF CHEMICAL ENGINEERING AT THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART IN NEW YORK CITY, USA

INJECTABLE, DRUG-ELUTING BIOMATERIALS FOR THE INTERVERTEBRAL DISC

SPEAKERS

12.45-13.00 **DR. GIULIA CALEFFI** (ITALY)

CELL AND TISSUE ENGINEERING LABORATORY, IRCCS GALEAZZI-SANT'AMBROGIO HOSPITAL, MILAN

BIOFABRICATED PATIENT-DERIVED SPINE UNIT MODELS TO STUDY DEGENERATIVE DISC DISEASE: FROM DEVICE-ASSISTED MULTICOMPARTMENT SYSTEMS TO 3D BIOPRINTED MODELS

13.00-13.15 **DR. CLAUDIA COLAIACOMO** (ITALY)

LABORATORY OF REGENERATIVE ORTHOPAEDICS, RESEARCH UNIT OF ORTHOPAEDIC, DEPARTMENT OF MEDICINE AND SURGERY, UNIVERSITÀ CAMPUS BIO-MEDICO DI ROMA OPERATIVE RESEARCH UNIT OF ORTHOPAEDICS, FONDAZIONE POLICLINICO UNIVERSITARIO CAMPUS BIO-MEDICO

FROM BENCH TO CHIP: ENGINEERING INTERVERTEBRAL DISC-ON-CHIP MODELS FOR NEXT-GENERATION SPINE RESEARCH

13.15-14.10 **LUNCH**

15.30-18.30 **SOCIAL EVENT**

SESSION 7

REGENERATIVE MEDICINE AND TISSUE ENGINEERING 1

CHAIRS: DR. SILVIA PANSERI and DR. JULIETTA RAU

SALA MARCONI

09.00-09.25 **KEYNOTE SPEAKER** **PROF. MARIA CHATZINIKOLAIDOU** (GREECE)

PROFESSOR OF BIOMATERIALS IN BIOENGINEERING AT THE DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING, UNIVERSITY OF CRETE, FACULTY MEMBER AT THE FOUNDATION FOR RESEARCH AND TECHNOLOGY-HELLAS FORTH.

VISITING BIOPRINTED COMPLEX CONSTRUCTS FOR TISSUE REGENERATION USING MULTIFUNCTIONAL BIOMATERIALS

09.25-09.50 **KEYNOTE SPEAKER** **STEFAN I. VOICU** (ROMANIA)

DEPARTMENT OF ANALYTICAL CHEMISTRY AND ENVIRONMENTAL ENGINEERING, FACULTY OF CHEMICAL ENGINEERING AND BIOTECHNOLOGIES, NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA, BUCHAREST, ROMANIA

ADVANCED POLYMERS MATERIALS GROUP, NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA, BUCHAREST, ROMANIA

ACADEMY OF ROMANIAN SCIENTISTS, BUCHAREST, ROMANIA

FUNCTIONALIZED AND COMPOSITE MEMBRANES FOR BONE TISSUE REGENERATION

SPEAKERS

09.50-10.05 **DR. ADRIANA GILARSKA** (POLAND)

AGH UNIVERSITY OF KRAKOW, FACULTY OF PHYSICS AND APPLIED COMPUTER SCIENCE, KRAKOW

DEVELOPMENT AND CHARACTERIZATION OF MAGNETIC COLLAGEN–CHITOSAN HYDROGELS FOR MAGNETICALLY ASSISTED BONE TISSUE ENGINEERING

10.05-10.20 **DR. SARAH STADLMAYR** (SWEDEN)

DEPARTMENT OF MEDICINE (MEDH), KAROLINSKA INSTITUTET, HUDDINGE

BIOMIMETIC SPIDER SILK WITH REGENERATIVE FUNCTIONALITY

10.20-10.35 **DR. CHIARA PASINI** (ITALY)

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING, UNIVERSITY OF BRESCIA

POLYSACCHARIDE-GELATINE HYDROGELS AND FLEXIBLE THERMOPLASTIC STRUCTURES AS HYBRID SCAFFOLDS FOR SOFT TISSUE ENGINEERING

10.35-10.50 **DR. TERESA MACCHI** (ITALY)

DEPT. OF TRANSLATIONAL RESEARCH AND NEW TECHNOLOGY IN MEDICINE AND SURGERY, UNIVERSITY OF PISA

PVA/GELATIN SCAFFOLDS TO CREATE 3D MODELS FOR SINONASAL AND SALIVARY GLAND CANCERS

10.50-11.40 **COFFEE BREAK + POSTER SESSION 2**

SESSION 8
REGENERATIVE MEDICINE AND TISSUE ENGINEERING 2

CHAIRS: PROF. MARIA CHATZINIKOLAIDOU and DR. MONICA MONTESI

SALA MARCONI

11.40-12.05 **KEYNOTE SPEAKER** **DR. SILVIA PANSERI** (ITALY)

INSTITUTE OF SCIENCE, TECHNOLOGY AND SUSTAINABILITY FOR CERAMICS (ISSMC), NATIONAL RESEARCH COUNCIL OF ITALY, FAENZA

MULTI-STIMULI RESPONSIVE AND BIOMIMETIC INTERFACES: ADVANCING PHYSIOLOGICALLY RELEVANT IN VITRO MODELS AND REGENERATIVE THERAPIES

12.05-12.30 **KEYNOTE SPEAKER** **PROF. ILARIA CACCIOTTI** (ITALY)

DEPARTMENT OF ENGINEERING, INSTM RU, UNIVERSITY OF ROME NICCOLÒ CUSANO, ROME
HEAD OF 'MIMOSA-MULTIFUNCTIONAL INNOVATIVE MATERIALS FOR OPTIMIZED SUSTAINABLE APPLICATIONS' GROUP

RENOVATE PROJECT: TOWARDS NEW REGENERATIVE SOLUTIONS FOR OSTEOARTHRITIS

SPEAKER

12.30-12.45 **DR. PARITAT THAITALAY** (LATVIA)

INSTITUTE OF BIOMATERIALS AND BIOENGINEERING, FACULTY OF NATURAL SCIENCES AND TECHNOLOGY, RIGA TECHNICAL UNIVERSITY, RIGA BALTIC BIOMATERIALS CENTRE OF EXCELLENCE, HEADQUARTERS AT RIGA TECHNICAL UNIVERSITY, RIGA

ETHANOL-INDUCED PHASE SEPARATION AS A SIMPLE STRATEGY FOR RAPID GELMA PURIFICATION

12.45-13.00 **DR. LORENZO FILIDEI** (ITALY)

DEPARTMENT OF PHARMACY, UNIVERSITY OF PISA

TOWARDS PH-RESPONSIVE SMART BIOMATERIALS: HA-BDDE HYDROGELS AS A PLATFORM FOR A NOVEL CHROMOGENIC DERIVATIVE

13.00-13.15 **DR. VICTOR V. JERCA** (ROMANIA)

SMART ORGANIC MATERIALS GROUP, "COSTIN D. NENITZESCU" INSTITUTE OF ORGANIC AND SUPRAMOLECULAR CHEMISTRY, ROMANIAN ACADEMY, BUCHAREST

ENGINEERING POLY(2-ISOPROPENYL-2-OXAZOLINE) HYDROGELS AS POTENTIAL IMPLANT MATERIALS

13.15-14.10 **LUNCH**

15.30-18.30 **SOCIAL EVENT**

OCTOBER 15TH THURSDAY

SESSION 9

REGENERATIVE MEDICINE AND TISSUE ENGINEERING 3

CHAIRS: DR. JULIETTA RAU and DR. MARIA GRAZIA RAUCCI

SALA CONVEGNI

09.00-09.25 **KEYNOTE SPEAKER** **DR. MONICA MONTESI** (ITALY)

INSTITUTE OF SCIENCE, TECHNOLOGY AND SUSTAINABILITY FOR CERAMICS (ISSMC), NATIONAL RESEARCH COUNCIL OF ITALY, FAENZA

ENGINEERING COMPLEMENTARY 3D OSTEOSARCOMA MODELS TO INVESTIGATE TUMOUR–STROMA CROSSTALK AND PATHOLOGICAL MATRIX CUES

09.25-09.50 **KEYNOTE SPEAKER** **DR. NELE PIEN** (BELGIUM)

POLYMER CHEMISTRY AND BIOMATERIALS (PBM) GROUP, GHENT UNIVERSITY

FROM MODULAR DESIGN TO REGENERATIVE FUNCTION: MATERIAL PLATFORMS FOR LIGHT-DRIVEN 3D-PRINTING.

09.50-10.15 **KEYNOTE SPEAKER** **PROF. DR. NERMIN DEMIRKOL** (TURKEY)

KOCAELI UNIVERSITY, TÜRKIYE

NEXT-GENERATION BIOMATERIALS IN TISSUE ENGINEERING

SPEAKERS

10.15-10.30 **DR. ÖZNUR DINCEL** (TURKEY)

KARABUK UNIVERSITY, TURKEY

MOLECULAR DYNAMICS SIMULATION OF GRAIN SIZE AND TEMPERATURE-DEPENDENT TENSILE BEHAVIOR OF Ti-Zr-Ta-Mo-Mg-Cu-Fe HIGH ENTROPY BIOALLOY

10.30-10.45 **DR. HATICE EVLEN** (TURKEY)

KARABÜK UNIVERSITY, FACULTY OF ENGINEERING AND NATURAL SCIENCE, DEPARTMENT OF MECHATRONICS, KARABÜK

EFFECT OF ZIRCONIA REINFORCEMENT ON THE MECHANICAL, THERMAL AND BIOACTIVE PROPERTIES OF POROUS PLA/HA COMPOSITE SCAFFOLDS FOR BONE TISSUE ENGINEERING

10.45-11.10 **COFFEE BREAK**

SESSION 10

BIOMEDICAL IMPLANTS 1:

TITANIUM ALLOYS AND SURFACE ENGINEERING

CHAIRS: PROF. ANGELA DE BONIS, PROF. DIEGO CORREA and DR. JULIETTA RAU

SALA CONVEGNI

11.10-11.35 **KEYNOTE SPEAKER** **PROF. CARLOS ROBERTO GRANDINI** (BRAZIL)

UNESP - UNIVERSITY ESTADUAL PAULISTA, LABORATÓRIO DE ANELASTICIDADE E BIOMATERIAIS, BAURU, SAN PAULO

FROM SURFACE ENGINEERING TO SMART BIOMATERIALS: DESIGNING NEXT-GENERATION TITANIUM ALLOYS FOR ADVANCED BIOMEDICAL APPLICATIONS

11.35-12.00 **KEYNOTE SPEAKER** **PROF. KETUL C. POPAT** (USA)

CHAIR DEPARTMENT OF BIOENGINEERING, GEORGE MASON UNIVERSITY, FAIRFAX VA

TANFLOC-MODIFIED TITANIUM SURFACES: OPTIMIZING BLOOD COAGULANT ACTIVITY AND STEM CELL COMPATIBILITY

SPEAKERS

12.00-12.15 **DR. ENRICO SANDRINI** (ITALY)

INTRAUMA S.P.A., BRUINO, ITALY

TOWARDS SAFER ORTHOPAEDIC IMPLANTS: STATE OF THE ART, BIOMATERIALS, POROUS TITANIUM STRUCTURES AND SILVER NANOPARTICLE COATINGS

12.15-12.30 **PROF. DIEGO R.N. CORREA** (BRAZIL)

SÃO PAULO STATE UNIVERSITY (UNESP), CAMPUS BAURU, SCHOOL OF SCIENCES, LABORATORY OF ANELASTICITY AND BIOMATERIALS, BAURU (SP)

BOOSTING THE SURFACE PROPERTIES OF THE Ti-6Al-4V ALLOY BY MAO TREATMENT: INFLUENCE OF BULK PHASES AND ELECTROLYTE'S COMPOSITION

12.30-12.45 **DR. MADDALENA BRACCHI** (ITALY)

ITALIAN NATIONAL RESEARCH COUNCIL, CNR-ICMATE, LECCO

Cu- AND Zn-DOPED Ti-6Al-4V ALLOYS PRODUCED BY LPBF FOR ANTIBACTERIAL BIOMEDICAL FIXTURES

12.45-13.00 **DR. HELENA SCHWARZ** (POLAND)

DEPARTMENT OF BIOMATERIALS TECHNOLOGY, FACULTY OF MECHANICAL ENGINEERING AND SHIP TECHNOLOGY, GDAŃSK UNIVERSITY OF TECHNOLOGY, GDAŃSK

ENGINEERING THE IMPLANT–BONE INTERFACE THROUGH MAGNESIUM-MODIFIED MESOPOROUS BIOACTIVE GLASS NANOPARTICLE-ENRICHED COATINGS ON Ti–13Zr–13Nb ALLOY

13.00-13.15 **DR. JOANNA FAHL-SEMRAU** (POLAND)

DEPARTMENT OF BIOMATERIALS TECHNOLOGY, GDAŃSK UNIVERSITY OF TECHNOLOGY

MESOPOROUS BIOACTIVE GLASS NANOPARTICLES IN CHITOSAN COATINGS ON Ti–13Nb–13Zr ALLOY FOR POTENTIAL ENHANCEMENT OF IMPLANT OSSEOINTEGRATION

13.15-14.15 **LUNCH**

SESSION 11

BIOMEDICAL IMPLANTS 2:

COATINGS, INTERFACES AND REGENERATIVE STRATEGIES

CHAIRS: PROF. CARLOS ROBERTO GRANDINI and PROF. KETUL C. POPAT

SALA CONVEGNI

14.15-14.40 **KEYNOTE SPEAKER** **DR SILVIA SPRIANO** (ITALY)

POLITECNICO DI TORINO, POLYTECHNIC UNIVERSITY OF TURIN

FROM INFECTION CONTROL TO OSTEOIMMUNOMODULATION: ENGINEERING BIOMATERIAL SURFACES WITH NATURAL COMPOUNDS AND PROTEINS

14.40-15.05 **KEYNOTE SPEAKER** **PROF. ANGELA DE BONIS** (ITALY)

DEPARTMENT OF BASIC AND APPLIED SCIENCES, UNIVERSITY OF BASILICATA, POTENZA

SHAPING MATTER WITH LIGHT: LASER-BASED ROUTES TO INNOVATIVE BIOMATERIALS

SPEAKERS

15.05-15.20 **DR. RADKA GOREJOVÁ** (SLOVAKIA)

DEPARTMENT OF PHYSICAL CHEMISTRY, PAVOL JOZEF ŠAFÁRIK UNIVERSITY IN KOŠICE

DEVELOPMENT OF ANTIBIOTIC-ENRICHED CERAMIC LAYERS ON TITANIUM VIA ELECTROCHEMICAL DEPOSITION

15.20-15.35 **DR. VIKTORIA ČÁKYOVÁ** (SLOVAKIA)

DEPARTMENT OF PHYSICAL CHEMISTRY, FACULTY OF SCIENCE, P. J. ŠAFÁRIK UNIVERSITY IN KOŠICE

DEVELOPMENT OF GENTAMICIN-LOADED HYDROXYAPATITE COATINGS ON POROUS TITANIUM IMPLANTS

15.35-15.50 **DR. CHIARA ROTA** (ITALY)

POLYTECHNIC DEPARTMENT OF ENGINEERING AND ARCHITECTURE, UNIVERSITY OF UDINE

EFFECT OF SYNTHESIS TEMPERATURE ON BIOMINERALIZED MG-DOPED HYDROXYAPATITE/CHITOSAN PARTICLES FOR Ti6Al4V COATINGS: TUNABLE PHYSICOCHEMICAL PROPERTIES WITH PRESERVED BIOLOGICAL RESPONSE

15.50-16.05 **DR. EKATERINA G. KOMAROVA** (RUSSIAN FEDERATION) Video Presentation

PANIN INSTITUTE OF STRENGTH PHYSICS AND MATERIALS SCIENCE SB RAS, TOMSK

STRUCTURE, COMPOSITION AND ELECTRICAL ACTIVITY OF OXIDE-PHOSPHATE AND CALCIUM-PHOSPHATE COATINGS ON TITANIUM SCAFFOLDS FABRICATED VIA MICRO-ARC OXIDATION

16.05-17.05 **COFFEE BREAK + POSTER SESSION 3**

19.30 **SOCIAL DINNER** **Restaurant "LA LIMONAIA" (INSIDE VILLA TORLONIA)**

VIA LAZZARO SPALLANZANI, 1A

SESSION 12
BIODEGRADABLE ALLOYS FOR BIOMEDICAL IMPLANTS

CHAIRS: PROF. YUFENG ZHENG, PROF. NICANOR CIMPOEŞU and PROF. CORNELIU MUNTEANU

SALA MARCONI

09.00-09.25 **KEYNOTE SPEAKER** **PROF. BOGDAN ISTRATE** (ROMANIA)
VICE-RECTOR "GHEORGHE ASACHI" TECHNICAL UNIVERSITY, FACULTY OF MECHANICAL ENGINEERING, IASI

MICROSTRUCTURE AND DEGRADATION BEHAVIOR OF MAGNESIUM BIODEGRADABLE ALLOYS FOR BIOMEDICAL APPLICATIONS

SPEAKERS

09.25-09.40 **PROF. NICANOR CIMPOEŞU** (ROMANIA)
DEPARTMENT OF MATERIALS SCIENCE, MATERIALS SCIENCE AND ENGINEERING FACULTY, TECHNICAL UNIVERSITY GHEORGHE ASACHI FROM IASI, IASI

BIODEGRADABLE FEMNSI-BASED SHAPE MEMORY ALLOYS FOR TEMPORARY MEDICAL IMPLANTS: CORROSION BEHAVIOUR AND FUNCTIONAL RESPONSE

09.40-09.55 **PROF. BRANDUSA GHIBAN** (ROMANIA)
NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA BUCHAREST

BIODEGRADATION OF ZINC ALLOYS IN DIFFERENT SURFACE CONDITIONS

09.55-10.10 **DR. ALFREDO RONDINELLA** (ITALY)
UNIVERSITÀ DI UDINE, DIPARTIMENTO POLITECNICO DI INGEGNERIA E ARCHITETTURA, UDINE

OPTIMIZATION OF MAGNESIUM ALLOYS BIOCORROSION RATE THROUGH PMO-FA GEOPOLYMER COATINGS

10.10-10.25 **DR. VERONICA MANESCU (PALTANEA)** (ROMANIA)
NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA BUCHAREST

DEVELOPMENT AND ANALYSIS OF AN IMPLANT MANUFACTURED FROM Mg-ND AND Mg-Zn ALLOYS FOR ORTHOPEDIC USE

10.25-10.40 **DR. PETROVAN TITIANA** (ROMANIA)
"GHEORGHE ASACHI" TECHNICAL UNIVERSITY OF IASI, FACULTY OF MECHANICAL ENGINEERING

BIODEGRADABLE Mg–0.5Ca–0.5Mn–xGd ALLOYS: MICROSTRUCTURE, IN VITRO CORROSION, AND BIOCOMPATIBILITY ASSESSMENT FOR BONE IMPLANT APPLICATIONS

10.45-11.10 **COFFEE BREAK**

SESSION 13

ADDITIVE MANUFACTURING & BIOFABRICATION 1

CHAIRS: PROF. FRANCESCO BAINO and PROF. JAKUB D. RYBKA

SALA MARCONI

11.25-11.50 **KEYNOTE SPEAKER** **PROF. FRANCESCO BAINO** (ITALY)

INSTITUTE OF MATERIALS PHYSICS AND ENGINEERING, DEPARTMENT OF APPLIED SCIENCE AND TECHNOLOGY, POLITECNICO DI TORINO, TURIN

ADDITIVE MANUFACTURING OF BIOACTIVE GLASSES AND CERAMICS: PROGRESS AND CHALLENGES

11.50-12.15 **KEYNOTE SPEAKER** **PROF. JAKUB D. RYBKA** (POLAND)

NANOBIOMEDICAL CENTRE, ADAM MICKIEWICZ UNIVERSITY, POZNAŃ

THE POWER OF COLLAGEN: ENGINEERING THE NEXT GENERATION OF BIOMATERIALS

SPEAKERS

12.15-12.30 **DR. LARISA POPESCU** (ROMANIA)

UNIVERSITY POLITEHNICA OF BUCHAREST, FACULTY OF MATERIALS SCIENCE AND ENGINEERING, BUCHAREST

RESEARCH ADVANCES REGARDING ADDITIVE MANUFACTURING OF RESORBABLE IMPLANTS FOR KIENBÖCK DISEASE TREATMENT

12.30-12.45 **DR. FRANCESCA GAMNA** (ITALY)

DEPARTMENT OF HEALTH SCIENCES, CENTER FOR TRANSLATIONAL RESEARCH ON AUTOIMMUNE AND ALLERGIC DISEASES – CAAD, UNIVERSITÀ DEL PIEMONTE ORIENTALE UPO, NOVARA

RHEOLOGY–PRINTABILITY CORRELATION OF GELMA BASED HYDROGELS FOR EXTRUSION BIOPRINTING OF SOFT TISSUES

12.45-13.00 **DR. SOOJUNG CHAE** (REPUBLIC OF KOREA)

DEPARTMENT OF PRECISION MEDICINE, SUNGKYUNKWAN UNIVERSITY SCHOOL OF MEDICINE (SKKU-SOM)

BIOFABRICATED PANCREAS–MUSCLE PLATFORM FOR MODELING MYOSTEATOSIS-ASSOCIATED METABOLIC CROSSTALK

13.15-14.15 **LUNCH**

SESSION 14
ADDITIVE MANUFACTURING & BIOFABRICATION 2

CHAIRS: PROF. MARCO BOTTINO and PROF. GIOVANNA DELLA PORTA

SALA MARCONI

14.15-14.40 **KEYNOTE SPEAKER** **PROF. MARCO BOTTINO** (USA)

THE ROBERT W. BROWNE ENDOWED PROFESSOR OF DENTISTRY IN THE DEPARTMENT OF CARIOLOGY, RESTORATIVE SCIENCES, AND ENDODONTICS (CRSE) AT THE UNIVERSITY OF MICHIGAN SCHOOL OF DENTISTRY.

DIRECTOR OF RESEARCH IN CRSE AND DIRECTOR OF THE POSTGRADUATE PROGRAM IN REGENERATIVE DENTISTRY AT THE UNIVERSITY OF MICHIGAN.

BIOFABRICATION IN REGENERATIVE DENTAL MEDICINE

14.40-15.05 **KEYNOTE SPEAKER** **PROF. GIOVANNA DELLA PORTA** (ITALY)

DEPARTMENT OF MEDICINE, SURGERY & DENTISTRY "SCUOLA MEDICA SALERNITANA" UNIVERSITY OF SALERNO

3D BIOPRINTING THE DISEASED TENDON NICHE: A COLMA–NANOMEDICINE PLATFORM TO DECODE PATHOLOGICAL TSPCS

SPEAKER

15.05-15.20 **DR. EDUARDO PÉREZ DEL RÍO** (SPAIN)

INSTITUTE OF MATERIALS SCIENCE OF BARCELONA (ICMAB-CSIC), CAMPUS UAB, BELLATERRA

3D PRINTING AS A STRATEGY TO SCALE-UP BIOHYBRID HYDROGELS FOR T CELL MANUFACTURE

15.20-15.35 **DR. SEO Y. JO** (REPUBLIC OF KOREA) 🏆

DEPARTMENT OF PRECISION MEDICINE, SUNGKYUNKWAN UNIVERSITY SCHOOL OF MEDICINE (SKKU-SOM), SUWON

ENGINEERING VASCULARIZED TUMOR MICROENVIRONMENTS USING A POROUS COLLAGEN-BASED BIOINK

16.05-17.05 **COFFEE BREAK + POSTER SESSION 3**

19.30 **SOCIAL DINNER** **Restaurant "LA LIMONAIA" (INSIDE VILLA TORLONIA)**

VIA LAZZARO SPALLANZANI, 1A

SESSION 15
NANOMATERIALS AND BIOSENSORS FOR CLINICAL APPLICATIONS

CHAIRS: DR. MICHELE IAFISCO and DR. MARCO FOSCA

SALA POLIFUNZIONALE

11.35-12.00 **KEYNOTE SPEAKER** **DR. MICHELE IAFISCO** (ITALY)

ISTITUTO PER LO STUDIO DEI MATERIALI NANOSTRUTTURATI (ISMN), CONSIGLIO NAZIONALE DELLE RICERCHE (CNR), BOLOGNA

CALCIUM PHOSPHATE-BASED MATERIALS: FROM NANOCARRIERS TO ANTIBACTERIAL DEVICES

SPEAKERS

12.00-12.15 **DR. FILIPPO CAUSA** (ITALY)

CENTRO DI RICERCA INTERDIPARTIMENTALE SUI BIOMATERIALI (CRIB), UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

MULTIFUNCTIONAL HYDROGEL MATERIALS FOR BIOSENSING APPLICATIONS

12.15-12.30 **DR. KONRAD KWIECIEŃ** (POLAND)

DEPARTMENT OF BIOMATERIALS AND COMPOSITES, FACULTY OF MATERIALS SCIENCE AND CERAMICS, AGH UNIVERSITY OF KRAKOW

POLY(SEBACIC ANHYDRIDE)-BASED ANTIBIOTIC CONJUGATE MICRO- AND NANOPARTICLES FOR SUSTAINED DRUG DELIVERY APPLICATIONS

12.30-12.45 **DR. AMANI ALOTAIBI** (UNITED KINGDOM)

DEPARTMENT OF MATERIALS, THE UNIVERSITY OF MANCHESTER, MANCHESTER

HYDROXYAPATITE NANOPARTICLES INVERT THE THERMAL–MECHANICAL RESPONSE OF 3D-PRINTED POLYCAPROLACTONE SCAFFOLDS

12.45-13.00 **DR. MAHDIEH PABAST** (ITALY)

NANOBIOINTERACTIONS & NANODIAGNOSTICS, ISTITUTO ITALIANO DI TECNOLOGIA (IIT), GENOVA DEPARTMENT OF CHEMISTRY AND INDUSTRIAL CHEMISTRY, UNIVERSITY OF GENOVA

PLATINUM NANOPARTICLE-EMBEDDED THERAPEUTIC CONTACT LENSES FOR SCAVENGING EXCESSIVE REACTIVE OXYGEN SPECIES IN OCULAR APPLICATIONS

13.00-13.15 **DR. ISMAIL BAL** (TURKEY)

VOCATIONAL SCHOOL OF HEALTH SERVICES, ISTANBUL OKAN UNIVERSITY, ISTANBUL INSTITUTE OF NANOTECHNOLOGY, GEBZE TECHNICAL UNIVERSITY, KOCAELI, TURKEY

OCULAR IRRITATION POTENTIAL OF DRUG-LOADED LIPOSOMAL HYDROGEL COATINGS FORMED VIA MICROPIPETTING AND MICROFLUIDICS TECHNIQUES

13.15-14.15 **LUNCH**

SESSION 16

MATERIALS IN CARDIOVASCULAR SURGERY AND TISSUE ENGINEERING

CHAIRS: PROF. DR. HORATIU MOLDOVAN, PROF. DR. FRANCESCO STILO and DR. NUNZIO MONTELIONE

SALA POLIFUNZIONALE

14.15-14.40 **KEYNOTE SPEAKER** **DR. NUNZIO MONTELIONE** (ITALY)

VASCULAR SURGERY RESEARCH UNIT, DEPARTMENT OF MEDICINE AND SURGERY, UNIVERSITA CAMPUS BIO-MEDICO DI ROMA, OPERATIVE RESEARCH UNIT OF VASCULAR SURGERY, FONDAZIONE POLICLINICO CAMPUS BIO-MEDICO ROME

WHAT DO CARDIOVASCULAR SURGEONS NEED FROM THE NEXT GENERATION OF VASCULAR GRAFTS?

14.40-15.05 **KEYNOTE SPEAKER** **DR. OANA DOBRE** (UNITED KINGDOM)

CENTRE FOR THE CELLULAR MICROENVIRONMENT, ADVANCED RESEARCH CENTRE, UNIVERSITY OF GLASGOW

ADVANCED MULTI-LAYERED BIOMIMETIC MATRICES FOR SMALL-DIAMETER TISSUE REGENERATION ARCHITECTURE

SPEAKERS

15.05-15.20 **PROF. ELISABETTA ROSELLINI** (ITALY)

DEPARTMENT OF CIVIL AND INDUSTRIAL ENGINEERING, UNIVERSITY OF PISA

EXTRACELLULAR MATRIX-LIKE SCAFFOLDS FOR AGE-SPECIFIC IN VITRO HEART TISSUE MODELS

15.20-15.35 **DR. M. A. DE LA CRUZ GARCIA** (GERMANY)

INSTITUTE FOR MOLECULAR SYSTEMS ENGINEERING AND ADVANCED MATERIALS (IMSEAM), UNIVERSITÄT HEIDELBERG

INJECTABLE SNW-BASED CONDUCTIVE MICROHYDROGELS FOR CARDIAC REPAIR

15.35-15.50 **DR. ELHAM SHARIFIKOLOUEI** (ITALY)

DEPARTMENT OF HEALTH SCIENCES, THE TRANSLATIONAL RESEARCH CENTRE FOR AUTOIMMUNE AND ALLERGIC DISEASES, UNIVERSITÀ DEL PIEMONTE ORIENTALE, NOVARA

HYDROGEL–METALLIC MICROFIBER/NANOWIRE COMPOSITES TO IMPROVE ELECTRICAL BRIDGING IN CONDUCTIVE SOFT CARDIAC PATCHES FOR SYNCHRONIZED BEATING OF IPSC-DERIVED CARDIOMYOCYTES

15.50-16.05 **DR. ANNA FATHI** (ITALY)

DEPARTMENT OF HEALTH SCIENCES, CENTER FOR TRANSLATIONAL RESEARCH ON AUTOIMMUNE AND ALLERGIC DISEASES – CAAD, UNIVERSITÀ DEL PIEMONTE ORIENTALE UPO, NOVARA

SYNTHESIS AND CHARACTERIZATION OF INJECTABLE SELF-HEALING CONDUCTIVE HYDROGELS FOR CARDIAC AND WOUND REGENERATION

16.05-17.05 **COFFEE BREAK + POSTER SESSION 3**

19.30 **SOCIAL DINNER** **Restaurant "LA LIMONAIA" (INSIDE VILLA TORLONIA)**

VIA LAZZARO SPALLANZANI, 1A

OCTOBER 16TH FRIDAY

SESSION 17
NEUROSURGERY

CHAIRS: PROF. DR. VICENTIU SACELEANU and PROF. JOANNA LEWANDOWSKA-ŁAŃCUCKA

SALA CONVEGNI

09.00-09.25 **KEYNOTE SPEAKER** **PROF. MIRCEA VICENTIU SACELEANU** (ROMANIA)
LUCIAN BLAGA UNIVERSITY OF SIBIU, HEAD OF NEUROSURGERY DEPARTMENT COUNTY HOSPITAL OF SIBIU

CRANIOPLASTY: HOW I DO IT

SPEAKERS

09.25-09.40 **PROF. JOANNA LEWANDOWSKA-ŁAŃCUCKA** (POLAND)
FACULTY OF CHEMISTRY, JAGIELLONIAN UNIVERSITY, KRAKÓW

BRAIN-TARGETED BIOPOLYMER-BASED TEMOZOLOMIDE MULTIROUTE DELIVERY PLATFORMS (BRAIN-BIO-TEM)

09.40-09.55 **PROF. MIRCEA VICENTIU SACELEANU** (ROMANIA)
FACULTY OF MEDICINE, UNIVERSITY LUCIAN BLAGA SIBIU

ACADEMY FOR MULTIDISCIPLINARY NEUROTRAUMATOLOGY ROLE IN THE MANAGEMENT OF NEUROTRAUMA

09.55-10.10 **DR. KAROLINA DZIEMIDOWICZ** (UNITED KINGDOM)
SCHOOL OF PHARMACY, UNIVERSITY COLLEGE LONDON

ELECTROSPUN DRUG-RELEASING MATERIALS FOR NEUROSURGICAL APPLICATIONS

10.10-10.25 **DR. ANTONIA ALEXANDRA ILIESCU** (ROMANIA)
"LUCIAN BLAGA" UNIVERSITY OF SIBIU, FACULTY OF MEDICINE

SURGICAL MANAGEMENT OF MALIGNANT ISCHEMIC STROKE: CLINICAL AND RADIOLOGICAL PREDICTORS OF OUTCOME AFTER DECOMPRESSIVE CRANIECTOMY

10.25-10.40 **DR. SONIA LUCACIU** (ROMANIA)
NEUROSURGERY DEPARTMENT, SIBIU COUNTY EMERGENCY CLINICAL HOSPITAL

ADVANCES IN NEUROSURGICAL TRAINING THROUGH 3D RECONSTRUCTION AND ADDITIVE MANUFACTURING

10.40-11.10 **COFFEE BREAK**

SESSION 18
SCIENCE MEETS ART

CHAIRS: DR. GABRIELA GRAZIANI and DR. JULIETTA V. RAU

SALA CONVEGNI

11.10-11.35 **KEYNOTE SPEAKER** **DR. GABRIELA GRAZIANI** (ITALY)

HUMAN SCIENCES AND LIFE QUALITY PROMOTION DEPARTMENT, SAN RAFFAELE ROME UNIVERSITY, ROME, ITALY EUROPEAN ORTHOPAEDIC RESEARCH SOCIETY

FROM ART TO SCIENCE AND VICE VERSA: RESEARCH AND COMMUNICATION ACROSS DIVERSE (BUT NOT SO DIFFERENT) FIELDS

SPEAKERS

11.35-11.50 **PROF. STEFAN I. VOICU** (ROMANIA)

DEPARTMENT OF ANALYTICAL CHEMISTRY AND ENVIRONMENTAL ENGINEERING, FACULTY OF CHEMICAL ENGINEERING AND BIOTECHNOLOGIES, NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA, BUCHAREST, ROMANIA
ADVANCED POLYMERS MATERIALS GROUP, NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY POLITEHNICA, BUCHAREST, ROMANIA
ACADEMY OF ROMANIAN SCIENTISTS, BUCHAREST, ROMANIA

A VISUAL REPRESENTATION OF MEMBRANE SCIENCE IN FAMOUS PAINTINGS - SYMBOLS AND CONCEPTS

11.50-12.05 **PROF. JENNIFER R. WEISER** (USA)

DEPARTMENT OF CHEMICAL ENGINEERING, THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART, NY

FROM CLINICAL UTILITY TO COMPUTATIONAL COUTURE: THE VORONOI PATTERN AS A BRIDGE BETWEEN BIOMEDICAL ENGINEERING AND THE ARTS

12.05-12.20 **DR. KAROLINA DZIEMIDOWICZ** (UNITED KINGDOM) 🏆

SCHOOL OF PHARMACY, UNIVERSITY COLLEGE LONDON

FROM MICROSCOPE TO CYANOTYPE: TRANSLATING BIOMATERIALS INTO ART THROUGH ARTIST-SCIENTIST CONVERSATIONS

12.20-13.00 **BEST ORAL PIZES – BEST POSTER PRIZES**
&
5TH BIOMAH CONFERENCE REMARKS

POSTER SESSIONS

OCTOBER 13TH TUESDAY

POSTER SESSION 1

SALA 3D

P1

MAURO UBERTINO[A], JOSÉ R. GUERRA-LÓPEZ[A,B], ANA E. BIANCHI[C,D], VERÓNICA FERRARESI-CUROTTO[E], JORGE A. GÜIDA[D,F], REINALDO PIS-DIEZ[F], LUCIA FOGLIA[A], ANDRES PIGHIN[A], JULIETTA V. RAU[G], K. BARBARO[H], and GUSTAVO A. ECHEVERRÍA[C,D].

[A] *DEPARTAMENTO DE CIENCIAS BÁSICAS, UNIVERSIDAD NACIONAL DE LUJÁN, RUTA 5 Y 7, CC 6700, LUJÁN, ARGENTINA.*

[B] *INSTITUTO DE ECOLOGÍA Y DESARROLLO SUSTENTABLE (INEDES, CONICET-UNLU), 6700 LUJÁN, BUENOS AIRES, ARGENTINA.*

[C] *DEPARTAMENTO DE FÍSICA, FACULTAD DE CIENCIAS EXACTAS, UNIVERSIDAD NACIONAL DE LA PLATA AND IFLP (CONICET, CCT LA PLATA), C.C. 67, 1900 LA PLATA, ARGENTINA.*

[D] *DEPARTAMENTO DE CIENCIAS BÁSICAS FACULTAD DE INGENIERÍA, UNIVERSIDAD NACIONAL DE LA PLATA. 115 Y 49. 1900 LA PLATA. ARGENTINA.*

[E] *INSTITUTO DE FÍSICA DE LA PLATA AND IFLP (CONICET, CCT LA PLATA), C.C. 67, 1900 LA PLATA, ARGENTINA*

[F] *CEQUINOR (CCT-LA PLATA), FACULTAD DE CIENCIAS EXACTAS, UNIVERSIDAD NACIONAL DE LA PLATA, CC 962, 1900, LA PLATA, ARGENTINA.*

[G] *ISTITUTO DI STRUTTURA DELLA MATERIA, CONSIGLIO NAZIONALE DELLE RICERCHE, ISM-CNR, VIA DEL FOSSO DEL CAVALIERE 100, 00133 ROME, ITALY.*

[H] *ISTITUTO ZOOPROFILATTICO SPERIMENTALE LAZIO E TOSCANA "M. ALEANDRI", VIA APPIA NUOVA, 00178, ROME, ITALY.*

STRUCTURAL AND MORPHOLOGICAL TRANSFORMATIONS IN A Sr-DOPED CERAMIC SYNTHESIZED VIA A WET ROUTE: EXPERIMENTAL AND THEORETICAL STUDIES

P2

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ENZYMATICALLY CROSSLINKED APHANOTHECE SACRUM HYDORGELS WITH ANGIOGENIC ACTIVITY FOR TISSUE REGENERATION ON WOUND HEALING

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ENHANCED OSTEOGENIC RESPONSE TO AN OSTEOCHONDRAL SCAFFOLD MODIFIED WITH BMP-2 OR STRONTIUM-ENRICHED AMORPHOUS CALCIUM PHOSPHATE IN A CO-CULTURE IN VITRO MODEL

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DEVELOPMENT AND CHARACTERIZATION OF MULTIPRINCIPAL B-TI ALLOYS WITH OPTIMIZED MECHANICAL AND CORROSION PROPERTIES FOR BIOMEDICAL APPLICATIONS

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MULTIFUNCTIONAL INTEGRATED NANOCOMPOSITES FOR SEPSIS TREATMENT BY BLOCKING THE VICIOUS CYCLE OF INFLAMMATION-COAGULATION DYSFUNCTION

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THERAPEUTIC COMPONENT-MODIFIED CARBONATED APATITE AND BIOPOLYMER COMPOSITES FOR NEXT-GENERATION IMPLANT COATINGS

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SOL-GEL DERIVED BORATE BIOACTIVE GLASS–CHITOSAN COMPOSITE COATINGS FABRICATED BY ELECTROPHORETIC DEPOSITION (EPD) FOR BONE REGENERATION APPLICATIONS

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ENGINEERING ZnO-BASED OPTICAL MICROCAVITIES

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CHARACTERIZATION AND IN VITRO BIOLOGICAL EVALUATION OF MODIFIED TITANIUM ALLOY AND STAINLESS STEEL SURFACES FOR MEDICAL IMPLANT

OCTOBER 14TH WEDNESDAY

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P15

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ENHANCING THE PROPERTIES OF ADDITIVELY MANUFACTURED Mg ALLOYS BY POST-PROCESSING TECHNIQUES

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CURCUMIN-LOADED GelMA HYBRID SCAFFOLDS REINFORCED WITH PCL MELT ELECTROWRITTEN MESH FOR IMPROVED MECHANICAL PROPERTIES AND SUSTAINED DRUG RELEASE

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CRYOGELS OF PLACENTA MODIFIED WITH METHACRYLATE AND HYDROXYAPATITE FOR BONE REGENERATION

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A NEW CLASS OF MARAGING STAINLESS STEELS FOR THE MANUFACTURE OF CERTAIN MEDICAL DEVICES

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CERAMIC COATINGS FOR 3D PRINTED POROUS CRANIOFACIAL IMPLANTS: CURRENT STRATEGIES AND CHALLENGES

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BIOCERAMIC OF ZINC-DOPED HA: STRUCTURAL AND CELLULAR STUDIES

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GELATIN-POLY(2-ISOPROPENYL-2-OXAZOLINE) HYBRID NANOFIBER DRESSINGS FOR POTENTIAL WOUND HEALING APPLICATIONS

OCTOBER 15TH THURSDAY

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INFLUENCE OF CUTTING AND MILLING MANUFACTURING TECHNOLOGIES ON THE MOLECULAR BIOCOMPATIBILITY OF PETG CLEAR ALIGNERS

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BIOACTIVE Mn-Si- AND Sr-Si-DOPED CALCIUM PHOSPHATE COATINGS ON TITANIUM IMPLANTS FABRICATED VIA MICRO-ARC OXIDATION

P29

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COBALT AND CHROMIUM IONS IMPAIR CONTRACTILITY AND SARCOMERE INTEGRITY IN HUMAN iPSC-DERIVED CARDIOMYOCYTES: AN IN VITRO MODEL FOR METAL-ON-METAL IMPLANT CARDIOTOXICITY

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THERMO-RESPONSIVE PNIPAM/SPION HYDROGEL-FIBER COMPOSITE FOR TARGETED HYPERTHERMIA AND SUSTAINED DRUG DELIVERY IN ENDOMETRIOSIS TREATMENT

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Mg-BASED ALLOYS POTENTIALLY USED FOR MANUFACTURING DENTAL MEMBRANES FOR GUIDED BONE REGENERATION

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MECHANICALLY INTERLOCKED NAPHTHALIMIDE FLUOROPHORES AS AN EMERGING PLATFORM FOR TUNABLE OPTICAL PROBES

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PHYSICAL AND CHEMICAL PROPERTIES OF EXPERIMENTAL OPAQUE AND DENTIN CERAMICS FOR METAL-CERAMIC RESTORATIONS

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GELATIN/POLY(METHACRYLIC ACID) HYDROGELS REINFORCED WITH HYDROXYAPATITE AND BIOACTIVE GLASS NANOPARTICLES FOR BONE TISSUE ENGINEERING

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DEVELOPMENT AND CHARACTERIZATION OF A NOVEL BEESWAX/SODIUM ALGINATE BIOMATERIAL FOR BONE TISSUE REGENERATION

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A SENSITIVE PLATFORM FOR RAPID DETECTION OF AMPICILLIN USING MODIFIED ELECTRODES