BIOMAD

3rd INTERNATIONAL BIENNIAL CONFERENCE OF BIOMATERIALS AND NOVEL TECHNOLOGIES FOR HEALTHCARE

OCTOBER 18-21, 2022 ROME, ITALY

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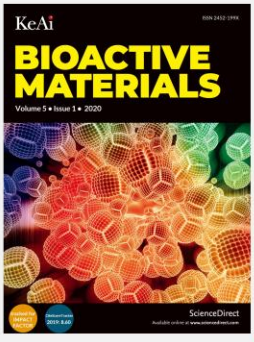

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3RD BIOMAH CONFERENCE
BIOMATERIALS AND NOVEL TECHNOLOGIES FOR HEALTHCARE
OCTOBER 18-21, 2022

PRESIDENTS
MAURO ALINI *(AO FOUNDATION, SWITZERLAND)*
GIOVANNI BARBANTI- BRÒDANO *(ORTHOPAEDIC INSTITUTE RIZZOLI, BOLOGNA, ITALY)*
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)*

OCTOBER 18TH TUESDAY

8.30-9.00 REGISTRATION

9.00-9.30 **CONFERENCE OPENING AND AUTHORITIES GREETINGS**
PRESIDENTS: **MAURO ALINI, ALDO BOCCACCINI E GIOVANNI BARBANTI- BRÒDANO**
DIRECTOR OF THE INSTITUTE OF THE STRUCTURE OF MATTER OF THE ITALIAN NATIONAL RESEARCH COUNCIL (ISM-CNR) **ALDO DI CARLO**
CHAIR: **JULIETTA RAU**

SESSION 1: ADVANCED MATERIALS IN ORTHOPAEDICS

CHAIRS: PROF. MAURO ALINI AND DR. GIOVANNI BARBANTI-BRÒDANO

9.30-10.00 **KEYNOTE SPEAKER** **PROF. GEORG N. DUDA** (GERMANY)
JULIUS WOLFF INSTITUTE FOR BIOMECHANICS AND MUSCULOSKELETAL REGENERATION, CHARITÉ - UNIVERSITÄTSMEDIZIN BERLIN
IMMUNO-MECHANICS IN BONE DEFECT HEALING: DRIVE REGENERATION BY EMPLOYING THE IMMUNE-STRUCTURE INTERFACE

10.00-10.30 **KEYNOTE SPEAKER** **DR. DANTE DALLARI** (ITALY)
THE "RECONSTRUCTIVE ORTHOPAEDIC SURGERY INNOVATIVE TECHNIQUES – MUSCULOSKELETAL TISSUE BANK", RIZZOLI ORTHOPAEDIC INSTITUTE, BOLOGNA
ALLOGENEIC GRAFTS AS BIOMIMETIC MATERIALS FOR CLINICAL APPLICATION

10.30-11.00 **KEYNOTE SPEAKER** **DR. MAURO ALINI** (SWITZERLAND)
AO FOUNDATION
HYDROGEL-ANTIBIOTICS FOR TREATING BONE INFECTION

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

11.30-12.00 **KEYNOTE SPEAKER** **PROF. SILVIA FARÈ** (ITALY)
DEPARTMENT OF CHEMISTRY, MATERIALS AND CHEMICAL ENGINEERING G. NATTA, POLITECNICO DI MILANO, MILAN
BIOMIMETIC 3D SCAFFOLD-BASED IN VITRO MODELS FOR BONE PATHOLOGY INVESTIGATION

SPEAKERS

12.00-12.15 **DR. MATTEO D'ESTE** (SWITZERLAND)
AO RESEARCH INSTITUTE DAVOS, AO FOUNDATION, DAVOS
TOWARDS DECIPHERING NEUTROPHILS ROLE IN THE IMMUNE RESPONSE TO BIOMATERIALS

12.15-12.30 **PROF. ELVIRA DE GIGLIO** (ITALY)
DEPARTMENT OF CHEMISTRY, UNIVERSITY OF BARI
A NEW GELLAN GUM/LIGNIN BIOINK: A PROMISING ROUTE FOR CARTILAGE REPAIR

12.30-12.45 **DR. ORLY ZEITUNI-TIMOR** (ISRAEL)
OSSIO LTD., CAESAREA
EARLY MINERAL ION RELEASE AND *IN-VIVO* BIO-INTEGRATION OF GLASS FIBER- REINFORCED ORTHOPEDIC IMPLANTS

12.45-13.00 **QUESTIONS, DISCUSSION AND CHALLENGES AHEAD**

13.00-14.00 **LUNCH**

SESSION 2: ADVANCED FUNCTIONAL MATERIALS FOR ORTHOPAEDIC AND SPINE SURGERY

CHAIRS: PROF. ALDO R. BOCCACCINI AND DR. DANTE DALLARI

14.00-14.30 **KEYNOTE SPEAKER** **DR. GIANLUCA VADALÀ** (ITALY)
UNIVERSITA CAMPUS BIO-MEDICO DI ROMA, RESEARCH UNIT OF ORTHOPAEDIC SURGERY, FACULTY OF MEDICINE AND SURGERY
MSC BASED INTERVERTEBRAL DISC REGENERATION: FROM BENCH TO BEDSIDE

14.30-15.00 **KEYNOTE SPEAKER** **DR. LUUK VAN DIJK** (NETHERLANDS)
SCIENTIFIC AFFAIRS MANAGER OF KUROS BIOSCIENCES
THE IMPORTANCE OF SURFACE TECHNOLOGY AND IMMUNOMODULATION FOR PREDICTABLE BONE FORMATION: FROM BENCHTOP TESTS TO CLINICAL EVIDENCE.

15.00–15.20 **COFFEE BREAK**

SPEAKERS

15.20-15.35 **DR. GIOVANNI BARBANTI- BRÒDANO** (ITALY)
DEPARTMENT OF SPINE SURGERY, IRCCS ISTITUTO ORTOPEDICO RIZZOLI, BOLOGNA
AUTOLOGOUS MESENCHYMAL STEM CELLS IN THE TREATMENT OF SPINAL ANEURYSMAL BONE CYST

15.35-15.50 **DR. LORENZO ANDREANI** (ITALY)
ORTHOPAEDIC AND TRAUMA SURGEON, ORTHOPAEDIC ONCOLOGIC SURGEON, AOUP ORTHOPAEDIC AND TRAUMA UNIT, UNIVERSITY OF PISA, TUSCANY
CARBON FIBER IMPLANTS FOR ORTHOPAEDIC ONCOLOGY SURGERY

15.50-16.05 **DR. FRANCESCA SALAMANNA** (ITALY)
COMPLEX STRUCTURE SURGICAL SCIENCES AND TECHNOLOGIES, IRCCS ISTITUTO ORTOPEDICO RIZZOLI, BOLOGNA
THE VERTEBRAL BONE MARROW CLOT AS NEW AND ADVANCED AUTOLOGOUS CELL THERAPY IN SPINAL SURGICAL PROCEDURES

16.05-16.20 **DR. EMANUELA ASUNIS (ITALY)**
DEPARTMENT OF SPINE SURGERY, IRCCS ISTITUTO ORTOPEDICO RIZZOLI, BOLOGNA
BIOMIMETIC 3D-PRINTED CUSTOM-MADE PROSTHESIS FOR ANTERIOR COLUMN RECONSTRUCTION AFTER EN BLOC RESECTION FOR SPINAL TUMORS

16.20-16.35 **DR. LEON RIEHAKAINEN** (ITALY)
INSTITUTE OF CLINICAL PHYSIOLOGY, NATIONAL RESEARCH COUNCIL, PISA
INSTITUTE OF LIFE SCIENCES, SANT'ANNA SCHOOL OF ADVANCED STUDIES, PISA
IN VIVO PET IMAGING OF IMPLANT-ASSOCIATED INFLAMMATION AND BONE REGENERATION

16.35-16.50 **DR. MANUELE GORI** (ITALY)
INSTITUTE OF BIOCHEMISTRY AND CELL BIOLOGY (IBBC) – NATIONAL RESEARCH COUNCIL (CNR), ROME
LABORATORY OF REGENERATIVE ORTHOPAEDICS, RESEARCH UNIT OF ORTHOPAEDIC SURGERY, CAMPUS BIO-MEDICO UNIVERSITY OF ROME
A POLY(SBMA) ZWITTERIONIC HYDROGEL COATING OF POLYIMIDE SURFACES FOR REDUCING THE FOREIGN BODY REACTION TO IMPLANTED NEURAL ELECTRODES

16.50-17.05 **DR. FABRIZIO RUSSO** (ITALY)
UNIVERSITA CAMPUS BIO-MEDICO DI ROMA, RESEARCH UNIT OF ORTHOPAEDIC SURGERY,
FACULTY OF MEDICINE AND SURGERY
BONE MARROW ASPIRATE CONCENTRATE AND PLATELET RICH FIBRIN FOR SPINAL SURGERY

17.05-18.05 **POSTER SESSION (P1-P15)**

19.00-20.30 **APERITIF NETWORKING PARTY**
HOTEL ATENEO GARDEN PALACE, VIA DEI SALENTINI 3 ROMA

OCTOBER 19TH WEDNESDAY

SESSION 3: MATERIALS AND NOVEL TECHNOLOGIES FOR BIOMEDICAL IMPLANTS AND IMPLANT COATINGS

CHAIRS: PROF. IULIAN ANTONIAC AND DR. JULIETTA V. RAU

9.00-9.30 **KEYNOTE SPEAKER** **PROF. RAINER GADOW** (GERMANY)
INSTITUTE FOR MANUFACTURING TECHNOLOGIES OF CERAMIC COMPONENTS AND COMPOSITES (IFKB), UNIVERSITY OF STUTTGART, GRADUATE SCHOOL OF EXCELLENCE FOR ADVANCED MANUFACTURING ENGINEERING GSAME, UNIVERSITY OF STUTTGART
SUSPENSION FLAME SPRAYED METAL DOPED CALCIUM PHOSPHATE COATINGS WITH ANTIBACTERIAL PROPERTIES FOR INFECTION PROPHYLAXIS

9.30-10.00 **KEYNOTE SPEAKER** **PROF. YUFENG ZHENG** (CHINA)
SCHOOL OF MATERIALS SCIENCE AND ENGINEERING, PEKING UNIVERSITY
ADVANCES IN BIODEGRADABLE METALS FOR POTENTIAL USAGE WITHIN BONE

10.00-10.30 **KEYNOTE SPEAKER** **PROF. IULIAN ANTONIAC** (ROMANIA)
MATERIALS SCIENCE AND ENGINEERING FACULTY, UNIVERSITY POLITEHNICA OF BUCHAREST, PRESIDENT OF THE ROMANIAN SOCIETY FOR BIOMATERIALS
THE BEST WAY TO ADVANCE BIOMEDICAL IMPLANTS: BIOMATERIALS OR CLINICAL NEEDS

10.30–10.50 **COFFEE BREAK**

10.50-11.20 **KEYNOTE SPEAKER** **PROF. GÜLTEKIN GÖLLER** (TURKEY)
ISTANBUL TECHNICAL UNIVERSITY, DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING, MASLAK, ISTANBUL
CERAMICS: PROCESSING AND CHARACTERIZATION FOR BIOMATERIALS APPLICATIONS

11.20-11.50 **KEYNOTE SPEAKER** **PROF. CARLOS ROBERTO GRANDINI** (BRAZIL)
UNESP – UNIV. ESTADUAL PAULISTA, LABORATÓRIO DE ANELASTICIDADES E BIOMATERIAIS, BAURU, SÃO PAULO
IBTN-BR – INSTITUTE OF BIOMATERIALS, TRIBOCORROSION AND NANOMEDICINE – BRAZILIAN BRANCH, BAURU, SÃO PAULO
SURFACE MODIFICATIONS ON NOVEL BETA Ti-BASED ALLOYS FOR BIOMEDICAL APPLICATIONS

SPEAKERS

11.50-12.05 **DR. GABRIELA GRAZIANI** (ITALY)
RIZZOLI ORTHOPAEDIC INSTITUTE (IOR), NANOBIOTECHNOLOGY LABORATORY (NABI), BOLOGNA
NANOSTRUCTURED METAL-BASED BIOMIMETIC AND ANTIBACTERIAL COATINGS FOR CUSTOM-MADE ORTHOPAEDIC DEVICES

12.05-12.20 **PROF. ORNELLA CAVALLERI** (ITALY)
DIPARTIMENTO DI FISICA AND OPTMATLAB, UNIVERSITÀ DI GENOVA
TAILORING THE SURFACE PROPERTIES OF ANODICALLY GROWN Ti AND Nb OXIDE LAYERS TO PROMOTE OSTEOINTEGRATION

12.20-12.35 **PROF. YURII P. SHARKEEV** (RUSSIA)
INSTITUTE OF STRENGTH PHYSICS AND MATERIALS SCIENCE OF SB RAS, TOMSK POLYTECHNIC UNIVERSITY
RF AND DC MAGNETRON SPUTTERING METHODS FOR DEPOSITION OF BIOCOATINGS

12.35-12.50 **DR. ALEXANDER D. KASHIN** (RUSSIA)
INSTITUTE OF STRENGTH PHYSICS AND MATERIALS SCIENCE SB RAS, TOMSK
SURFACE MODIFICATION OF A BIORESORBABLE Mg ALLOY USING A BIOACTIVE COATING BASED ON DIATOMITE

12.50-13.05 **DR. AURORA ANTONIAC** (ROMANIA)
FACULTY OF MATERIAL SCIENCE AND ENGINEERING, UNIVERSITY POLITEHNICA OF BUCHAREST
IN VITRO CORROSION BEHAVIOR OF Mg-Nd-Y-Zn-Zr ALLOYS TYPE

13.30–14.30 **LUNCH**

PARALLEL SESSION 4: MATERIALS FOR DENTAL APPLICATIONS

CHAIRS: PROF. MAHA DAOU AND PROF. HORIA MANOLEA

14.30-15.00 **KEYNOTE SPEAKER** **PROF. HORIA MANOLEA** (ROMANIA)
DEPARTMENT OF DENTAL MATERIALS, VICE-DEAN FACULTY OF DENTISTRY, UNIVERSITY OF MEDICINE AND PHARMACY CRAIOVA
BIOCOMPATIBILITY ASSESSMENT OF BONE AUGMENTATION MATERIALS

15.00-15.30 **KEYNOTE SPEAKER** **PROF. FRANZ E. WEBER** (SWITZERLAND)
UNIVERSITY ZURICH, CENTER FOR DENTAL MEDICINE, ORAL BIOTECHNOLOGY & BIOENGINEERING, ZURICH
3D PRINTED CERAMIC LIGHTWEIGHT BONE SUBSTITUTES WITH PERIODIC MINIMAL SURFACE MICROARCHITECTURES ARE HIGHLY OSTEOCONDUCTIVE

SPEAKERS

15.30-15.45 **PROF. NORINA FORNA** (ROMANIA)
FACULTY OF DENTAL MEDICINE, UNIVERSITY OF MEDICINE AND PHARMACY "GRIGORE T. POPA" IASI
CHALLENGES REGARDING THE USE OF BONE REGENERATION MATERIALS IN IMPLANT SURGERY

15.45-16.00 **PROF. MAHA H. DAOU** (LEBANON, CANADA)
SCHOOL OF DENTISTRY SAINT JOSEPH UNIVERSITY BEIRUT, LEBANON
VISITING SCHOLAR AT MCGILL UNIVERSITY, MONTREAL, CANADA
BIOCOMPATIBILITY OF DENTAL MATERIALS IN CONTEMPORARY PEDIATRIC DENTISTRY

16.00–16.20 **COFFEE BREAK**

16.20-16.35 **PROF. ANCA PORUMB** (ROMANIA)
DEPARTMENT OF DENTAL MEDICINE, FACULTY OF MEDICINE AND PHARMACY, UNIVERSITY FROM ORADEA
IMAGISTIC EXPLORATIONS IN PAEDIATRIC DENTISTRY

16.35-16.50 **PROF. VINISHA PANDEY** (INDIA)
DEPARTMENT OF CONSERVATIVE DENTISTRY AND ENDODONTICS, DEPARTMENT OF CONSERVATIVE DENTISTRY AND ENDODONTICS, MAHARANA PRATAP DENTALCOLLEGE, KANPUR, UTTAR PRADESH
EINSTEIN'S SPLENDID LIGHT: CLINICAL APPLICATIONS OF LASERS IN DENTISTRY

16.50-17.05 **DR. ALEX SALAN** (ROMANIA)
FACULTY OF DENTISTRY, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA
VARIANTS OF USE OF ZIRCONIA IN DENTISTRY

17.05-17.20 **DR. NICOLETA CIOATERÀ** (ROMANIA)
DEPARTMENT OF CHEMISTRY, UNIVERSITY OF CRAIOVA
ZIRCONIA-BASED BIOMATERIALS: FROM COMPOSITION TO STRUCTURAL STABILITY

17.20-17.35 **PROF. PAULO NORONHA LISBOA-FILHO** (BRAZIL)
UNESP - SÃO PAULO STATE UNIVERSITY, SCHOOL OF SCIENCES, DEPARTMENT OF PHYSICS, BAURU
MICROPOROUS METAL-ORGANIC FRAMEWORKS (MOFS) IN THE CONTROL OF EXTRACELLULAR MATRIX DEGRADATION AND IMPROVEMENT OF DENTAL MATERIAL'S THERAPEUTIC CAPABILITIES

17.35-17.50 **DR. LORENZO DEGLI ESPOSTI** (ITALY)
INSTITUTE OF SCIENCE AND TECHNOLOGY FOR CERAMICS (ISTEC), NATIONAL RESEARCH COUNCIL (CNR), FAENZA
ION-DOPED, CITRATE STABILIZED AMORPHOUS CALCIUM PHOSPHATE: A MULTIFUNCTIONAL MATERIAL FOR PREVENTIVE DENTISTRY

17.50-18.05 **DR. RADU M. PISC** (ROMANIA)
DEPARTMENT OF DENTAL MATERIALS, FACULTY OF DENTAL MEDICINE, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA
DEPARTMENT OF ORTHODONTICS, FACULTY OF DENTAL MEDICINE, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA
A EVALUATION OF A NEW Ti-Nb ORTHODONTIC WIRES USING A TYPODONT LABORATORY DEVICE BASED ON A CLINICAL CASE

18.05-18.20 **DR. AMIT S. SHAVIT** (ISRAEL)
FACULTY OF MECHANICAL ENGINEERING, TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY, 3200003 HAIFA, ISRAEL
PERI-IMPLANTITIS' SIGNATURE ON FAILED DENTAL IMPLANTS

18.20-18.35 **DR. IOANA MITRUT** (ROMANIA)
DEPARTMENT OF DENTAL MATERIALS, FACULTY OF DENTAL MEDICINE, UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA
PRECLINICAL AND HISTOLOGICAL STUDY OF BORON-CONTAINING COMPOUNDS HYDROGELS ON EXPERIMENTAL MODEL OF PERIODONTAL DISEASE

18.35 **QUESTIONS, DISCUSSION AND CHALLENGES AHEAD**

OCTOBER 19TH WEDNESDAY

PARALLEL SESSION 5: BIOACTIVE GLASSES

CHAIRS: PROF. FRANCESCO BAINO AND PROF. ENRICA VERNÈ

9.00-9.30 **KEYNOTE SPEAKER** **PROF. ALDO R. BOCCACCINI** (GERMANY)
INSTITUTE OF BIOMATERIALCHAIR, DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING UNIVERSITY OF ERLANGEN-NUREMBERG
ION RELEASING BIOMATERIALS: OVERVIEW OF WELL-KNOWN AND LESS COMMON IONS ENHANCING THE BIOLOGICAL ACTIVITY AND FUNCTIONALITIES OF BIOACTIVE GLASSES

9.30-10.00 **KEYNOTE SPEAKER** **PROF. GIGLIOLA LUSVARDI** (ITALY)
DEPARTMENT OF CHEMICAL AND GEOLOGICAL SCIENCES, UNIVERSITY OF MODENA AND REGGIO EMILIA
FUNCTIONALIZATION OF GLASSES FOR THE DESIGN OF BIOMATERIALS

10.00-10.30 **KEYNOTE SPEAKER** **PROF. FRANCESCO BAINO** (ITALY)
INSTITUTE OF MATERIALS PHYSICS AND ENGINEERING, DEPARTMENT OF APPLIED SCIENCE AND TECHNOLOGY, POLITECNICO DI TORINO
DEVELOPMENT OF BIOACTIVE GLASS SCAFFOLDS BY VAT PHOTOPOLYMERIZATION

10.30–10.50 **COFFEE BREAK**

SPEAKERS

10.50-11.05 **DR. ANA SOFIA PÁDUA** (PORTUGAL)
I3N-CENIMAT, NOVA SCHOOL OF SCIENCE AND TECHNOLOGY, NOVA UNIVERSITY OF LISBON
TANTALUM DOPED BIOACTIVE GLASS: TOWARDS AN ANTI-INFLAMMATORY AND ANTIBACTERIAL RESPONSE

11.05-11.20 **DR. MARI SOFIA LALLUKKA** (ITALY)
POLITECNICO DI TORINO, DEPARTMENT OF APPLIED SCIENCE AND TECHNOLOGY
BIOACTIVE AND ANTIBACTERIAL GLASS DOPED WITH IONIC COPPER BY ION-EXCHANGE IN AQUEOUS SOLUTION

11.20-11.35 **DR. AZIN KHODAEI** (GERMANY, NETHERLANDS)
DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING, INSTITUTE OF BIOMATERIALS, UNIVERSITY OF ERLANGEN-NUREMBERG, GERMANY
DEPARTMENT OF ORTHOPEDICS, UNIVERSITY MEDICAL CENTER UTRECHT, UTRECHT, THE NETHERLANDS
Cu-DOPED BIOACTIVE GLASS NANOPARTICLES AS ICARIIN CARRIER: NON-CONVERGENT OSTEOGENIC AND OSTEOIMMUNOGENIC PERFORMANCE

11.35-11.50 **DR. TIMUR MELKUMYAN** (UZBEKISTAN)
TASHKENT STATE DENTAL INSTITUTE
IN VIVO IMPLANTATION OF ALUMINUM-CONTAINING SILICOPHOSPHATE GLASS

PARALLEL SESSION 6: CRANIOPLASTY MATERIALS AND TUMOUR MODELS

CHAIR: DR. ROBERTO DE SANTIS

11.50-12.20 **KEYNOTE SPEAKER** **PROF. VICENTIU M. SACELEANU** (ROMANIA)
"LUCIAN BLAGA" UNIVERSITY, FACULTY OF MEDICINE, SIBIU
RECONSTRUCTION OF SKULL DEFECTS USING DIFFERENT CRANIOPLASTY MATERIALS

12.20-12.50 **KEYNOTE SPEAKER** **PROF. ILARIA CACCIOTTI** (ITALY)
DEPARTMENT OF ENGINEERING, INSTM RU, UNIVERSITY OF ROME NICCOLÒ CUSANO, ROME
INNOVATIVE 3D PRINTED SCAFFOLDS AND IMPLANTS FOR THE CRANIO-MAXILLOFACIAL SECTOR: A FUNCTIONALISED AND MULTIDISCIPLINARY APPROACH

SPEAKERS

12.50-13.05 **PROF. SERENA DANTI** (ITALY)
DEPARTMENT OF CIVIL AND INDUSTRIAL ENGINEERING, UNIVERSITY OF PISA
3D *IN VITRO* MODELS OF HARD AND SOFT TUMOURS

13.05-13.20 **DR. MARIO D'ACUNTO** (ITALY)
INSTITUTE OF BIOPHYSICS, NATIONAL RESEARCH COUNCIL, CNR-IBF, PISA
MULTIVARIATE STATISTICS, MACHINE LEARNING AND CANCER GRADING BY RAMAN SPECTROSCOPY

13.20-13.35 **DR. LORETTA L. DEL MERCATO** (ITALY)
INSTITUTE OF NANOTECHNOLOGY, NATIONAL RESEARCH COUNCIL, CNR-NANOTEC, LECCE
RATIOMETRIC SENSING MATERIALS FOR INTRACELLULAR AND EXTRACELLULAR pH MAPPING AT SINGLE CELL LEVEL IN *IN VITRO* TUMOUR MODELS

13.30-14.30 **LUNCH**

PARALLEL SESSION 7: MATERIALS IN CARDIOVASCULAR SURGERY

CHAIRS: PROF. DEON BEZUIDENHOUT AND PROF. HORATIU MOLDOVAN

14.30-15.00 **KEYNOTE SPEAKER** **PROF. HORATIU MOLDOVAN** (ROMANIA)
"CAROL DAVILA" UNIVERSITY OF MEDICINE AND PHARMACY, BUCHAREST
BIOMATERIALS AS LOCAL HAEMOSTATIC AGENTS IN CARDIOVASCULAR SURGERY

15.00-15.30 **KEYNOTE SPEAKER** **PROF. NEIL DAVIES** (SOUTH AFRICA)
CARDIOVASCULAR RESEARCH UNIT AT THE UNIVERSITY OF CAPE TOWN
HYDROGELS AS ENGINEERABLE SYSTEMS FOR CARDIOVASCULAR REGENERATIVE MEDICINE

15.30-16.00 **KEYNOTE SPEAKER** **PROF. KETUL C. POPAT** (USA)
BIOMATERIALS AND SURFACE MICRO/NANO-ENGINEERING LABORATORY, DEPARTMENT OF MECHANICAL ENGINEERING/SCHOOL OF BIOMEDICAL ENGINEERING/SCHOOL OF ADVANCES MATERIALS DISCOVERY, COLORADO STATE UNIVERSITY, FORT COLLINS CO
BIOMIMETIC SURFACE ENGINEERING OF MATERIALS FOR ORTHOPEDIC AND CARDIOVASCULAR IMPLANTS

16.00–16.20 **COFFEE BREAK**

SPEAKERS

16.20-16.35 **PROF. DEON BEZUIDENHOUT** (SOUTH AFRICA)
CARDIOVASCULAR RESEARCH UNIT, CAPE HEART CENTRE, FACULTY OF HEALTH SCIENCES, UNIVERSITY OF CAPE TOWN
DESIGN AND MATERIAL CONSIDERATIONS FOR TRANSCATHETER HEART VALVE TISSUE ENGINEERING

16.35-16.55 **DR. HARIS MUHAMMAD** (ITALY)
TA INSTRUMENTS, WATERS SPA
APPLICATION OF MOST ADVANCED TECHNOLOGIES FOR CARDIOVASCULAR VALVE AND STENT TESTING

16.55-17.10 **DR. B. FREYSTETTER** (GERMANY)
DEPARTMENT OF CARDIAC SURGERY, LUDWIG MAXIMILIANS UNIVERSITY MUNICH
TAVI WITH THREE-DIMENSIONAL MULTI-LAYERED ELECTRO-SPUN LEAFLETS FOR TISSUE ENGINEERING APPLICATION

17.10-17.25 **MSc. WIAN VAN DEN BERGH** (NETHERLANDS)
XELTIS BV, EINDHOVEN
ONE-YEAR PERFORMANCE OF AN ELECTROSPUN CORONARY ARTERY BYPASS GRAFT IN AN OVINE MODEL

17.25 **QUESTIONS, DISCUSSION AND CHALLENGES AHEAD**

OCTOBER 20TH THURSDAY

SESSION 8: BIOFABRICATION

CHAIRS: PROF. SERENA DANTI AND PROF. JOAQUIM MIGUEL OLIVEIRA

9.00-9.30 **KEYNOTE SPEAKER** **PROF. JOAQUIM MIGUEL OLIVEIRA** (PORTUGAL)
3B'S RESEARCH GROUP, UNIVERSITY OF MINHO
ADVANCES IN NATURAL-BASED BIOMATERIALS AND BIOINKS FOR BIOFABRICATION OF COMPLEX TISSUES

9.30-10.00 **KEYNOTE SPEAKER** **PROF. LORENZO MORONI** (NETHERLANDS)
MERLN INSTITUTE FOR TECHNOLOGY-INSPIRED REGENERATIVE MEDICINE
CHAIR OF COMPLEX TISSUE REGENERATION DEPARTMENT, PROFESSOR IN BIOFABRICATION FOR REGENERATIVE MEDICINE
MECHANICALLY-INSTRUCTIVE SCAFFOLDS TO STEER TISSUE REGENERATION: MERGING MECHANIOBIOLOGY WITH BIOFABRICATION

10.00-10.30 **KEYNOTE SPEAKER** **PROF. GIOVANNI MARLETTA** (ITALY)
LABORATORY FOR MOLECULAR SURFACES AND NANOTECHNOLOGY, DEPARTMENT OF CHEMICAL SCIENCES, UNIVERSITY OF CATANIA AND CSGI, CATANIA
BIOMOLECULAR ORGANIZATION AND CELL BEHAVIOUR AT NANOSTRUCTURED SURFACES

10.30–10.50 **COFFEE BREAK**

SPEAKERS

10.50-11.05 **DR. SERAFINA PACILIO** (ITALY)
DEPARTMENT OF BIOMEDICAL AND NEUROMOTOR SCIENCES DIBINEM, ALMA MATER STUDIORUM-UNIVERSITÀ DI BOLOGNA
SKELETAL MUSCLE TISSUE RESTORATION USING FUNCTIONALIZED BIOMATERIALS

11.05-11.20 **DR. TIZIANO SERRA** (SWITZERLAND)
AO RESEARCH INSTITUTE DAVOS, AO FOUNDATION, DAVOS
A SOUND ASSEMBLY PLATFORM TO CONTROL TISSUE ORGANIZATION

11.20-11.35 **DR. GIUSEPPE PRENCIPE** (ITALY)
UNIT OF BASIC AND APPLIED SCIENCES, FACULTY OF BIOSCIENCES AND AGRO-FOOD AND ENVIRONMENTAL TECHNOLOGIES, UNIVERSITY OF TERAMO
TENDON BIOMIMETIC PLGA 3D SCAFFOLD ENHANCES AMNIOTIC EPITHELIAL STEM CELLS BIOLOGICAL CAPABILITY FOR TISSUE ENGINEERING APPLICATIONS

11.35-11.50 **DR. VICTOR A. AJISAFE** (INDIA)
DEPARTMENT OF MATERIALS ENGINEERING, INDIAN INSTITUTE OF SCIENCE BANGALORE, KARNATAKA
EFFECTS OF SNAIL MUCUS ON POROUS 3D AGAROSE SCAFFOLD FOR TISSUE ENGINEERING APPLICATIONS

11.50-12.05 **DR. LEONARDO CASSARI** (ITALY)
DEPARTMENT OF INDUSTRIAL ENGINEERING, UNIVERSITY OF PADOVA
BIOACTIVE PEEK FOR BONE TISSUE ENGINEERING

12.05-12.20 **DR. MOHAMMAD EL KHATIB** (ITALY)
UNIT OF BASIC AND APPLIED SCIENCES, FACULTY OF BIOSCIENCES AND AGRO-FOOD AND ENVIRONMENTAL TECHNOLOGIES, UNIVERSITY OF TERAMO
THREE-DIMENSIONAL TENDON BIOMIMETIC SCAFFOLD EXERTS A BOOSTED IMMUNE INDUCTIVE EFFECT ON AMNIOTIC EPITHELIAL STEM CELLS

12.20-12.35 **DR. FEDERICO MOCHI** (ITALY)
E. AMALDI FOUNDATION, VIA DEL POLITECNICO SNC, ROME
HYPATIA RESEARCH CONSORTIUM, VIA DEL POLITECNICO, ROME
EVALUATION OF 3D PRINTED BONE-LIKE SCAFFOLDS IN STATIC AND DYNAMIC CULTURE CONDITIONS

12.35-13.00 **QUESTIONS, DISCUSSION AND CHALLENGES AHEAD**

13.00-14.00 **LUNCH**

14.00-15.00 **POSTER SESSION (P16-P32)**

16.00 **ANCIENT ROME TOUR**

19.30 **CONFERENCE DINNER**
RISTORANTE CIAMPINI - PIAZZA TRINITÀ DEI MONTI, 2

OCTOBER 21ST FRIDAY

SESSION 9: TISSUE REGENERATION AND INFECTION TREATMENT

CHAIR: PROF. ANTONIO GLORIA AND DR. MICHELE IAFISCO

9.00-9.30 **KEYNOTE SPEAKER** **DR. SIMONE SPRIO** (ITALY)
BIOCERAMICS AND BIO-HYBRID COMPOSITES GROUP NATIONAL RESEARCH COUNCIL - , INSTITUTE OF SCIENCE AND TECHNOLOGY FOR CERAMICS, ISTEC-CNR, FAENZA
PHYSICO-CHEMICAL AND STRUCTURAL FEATURES OF CALCIUM PHOSPHATES, RELEVANT FOR INHERENT OSTEOGENIC AND ANTIBACTERIAL PROPERTIES

SPEAKERS

9.30-9.45 **DR. VERA HINTZE** (GERMANY)
INSTITUTE OF MATERIALS SCIENCE, MAX BERGMANN CENTER OF BIOMATERIALS, TU DRESDEN
GLYCOSAMINOGLYCAN-BASED FUNCTIONAL BIOMATERIALS - PROMISING OPTIONS FOR THERAPEUTIC INTERVENTION IN COMPROMISED TISSUE REGENERATION

9.45-10.00 **DR. FRANCESCO TRAINA** (ITALY)
DEPARTMENT "ORTHOPEDICS-TRAUMATOLOGY AND PROSTHETIC SURGERY AND HIP AND KNEE RE-IMPLANTATIONS", IOR - ISTITUTO ORTOPEDICO RIZZOLI
INNOVATIVE SOLUTIONS FOR PERIPROSTHETIC JOINT INFECTIONS

10.00-10.15 **DR. URSZULA PIOTROWSKA** (POLAND)
DEPARTMENT OF ANALYTICAL CHEMISTRY AND BIOMATERIALS, FACULTY OF PHARMACY, MEDICAL UNIVERSITY OF WARSAW
POLYMERIC NANOSYSTEMS FOR TARGETED THERAPY OF COLORECTAL CANCER

10.15-10.30 **DR. MEYSAM FIROOZBAHR** (AUSTRALIA)
DEPARTMENT OF CHEMISTRY AND BIOTECHNOLOGY, SWINBURNE UNIVERSITY OF TECHNOLOGY, VICTORIA
ENDOPHYTIC FUNGI SOLVENT EXTRACTS AS A NOVEL SOURCE OF BIOACTIVE COMPOUNDS IN ELECTROSPUN POLYCAPROLACTONE WOUND DRESSING

10.30-10.45 **DR. ALINA ROBU** (ROMANIA)
FACULTY OF MATERIAL SCIENCE AND ENGINEERING, UNIVERSITY POLITEHNICA OF BUCHAREST
STUDY OF THE MECHANICAL PROPERTIES OF NEW TYPES OF ANTIMICROBIAL ACRYLIC BONE CEMENT

10.45–11.00 **COFFEE BREAK**

SESSION 10: INNOVATIVE CERAMIC AND COMPOSITE MATERIALS

CHAIRS: DR. GABRIELA GRAZIANI AND DR. VERA HINTZE

11.00-11.30 **KEYNOTE SPEAKER** **DR. MICHELE IAFISCO (ITALY)**
INSTITUTE OF SCIENCE AND TECHNOLOGY FOR CERAMICS (ISTEC), NATIONAL RESEARCH COUNCIL (CNR)
CALCIUM PHOSPHATE NANOPARTICLES AS NANOCARRIERS OF THERAPEUTIC PEPTIDES

SPEAKERS

11.30-11.45 **PROF. KATHERINA FERNÁNDEZ** (CILE)
LABORATORIO DE BIOMATERIALES, DEPARTAMENTO DE INGENIERÍA QUÍMICA, UNIVERSIDAD DE CONCEPCIÓN
DEVELOPMENT AND CHARACTERIZATION OF A COMPOSITE MATERIAL BASED ON REDUCED GRAPHENE OXIDE (RGO) AND NANOCELLULOSE (CNF)

11.45-12.00 **PROF. DINA V. DEYNEKO** (RUSSIA)
DEPARTMENT OF CHEMISTRY, LOMONOSOV MOSCOW STATE UNIVERSITY, MOSCOW
THE DEPENDENCE OF ANTIMICROBIAL ACTIVITY ON THE CU^{2+} CONCENTRATION IN $Ca_{10.5-X}Cu_X(PO_4)_7$

12.00-12.15 **DR. ABHISHEK INDURKAR** (LATVIA)
RUDOLFS CIMDINS RIGA BIOMATERIALS INNOVATIONS AND DEVELOPMENT CENTRE OF RTU, INSTITUTE OF GENERAL CHEMICAL ENGINEERING, FACULTY OF MATERIALS SCIENCE AND APPLIED CHEMISTRY, RIGA TECHNICAL UNIVERSITY
BALTIC BIOMATERIALS CENTRE OF EXCELLENCE, HEADQUARTERS AT RIGA TECHNICAL UNIVERSITY
TAILOR-MADE SYNTHESIS OF BIONIC AMORPHOUS CALCIUM PHOSPHATE

12.15-12.30 **DR. EWELINA E. CICHOŃ** (POLAND)
FACULTY OF MATERIALS SCIENCE AND CERAMICS, AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KRAKOW
CYTOCOMPATIBILITY OF CALCIUM PHOSPHATE CEMENTS FUNCTIONALIZED WITH BIOSURFACTANTS

12.30-12.45 **DR. JOANNA P. CZECHOWSKA** (POLAND)
FACULTY OF MATERIALS SCIENCE AND CERAMICS, AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KRAKÓW
INFLUENCE OF TETRAETHOXYSILANE (TEOS) ON PHYSICOCHEMICAL PROPERTIES OF A-TRICALCIUM PHOSPHATE-BASED INJECTABLE BONE SUBSTITUTES

12.45-13.00 **DR. KONSTANTIN PROSOLOV** (RUSSIA)
INSTITUTE OF STRENGTH PHYSICS AND MATERIALS SCIENCE, SIBERIAN BRANCH OF RUSSIAN ACADEMY OF SCIENCES, TOMSK
ULTRASONIC-ASSISTED MICRO-ARC OXIDATION DEPOSITION OF CALCIUM PHOSPHATE COATINGS FOR LOCAL DRUG DELIVERY APPLICATION

12.40-13.00 **CLOSING REMARKS**
BEST ORAL PRIZES - BEST POSTER PRIZES

POSTERS

SESSION (P1-P15)

P1

A. ALTIGERI[1], C. COCUMELLI[1], L. POLITO[1], E. GALVANO[1], A. ZEPPARONI[1], V. MONTELEONE[1], A. DURI[2], G. LOFFREDO[1], O. LAI[1], P. GHISELLINI[3,4], C. RANDO[3,4], R. EGGENHÖFFNER[3,4], M.T. SCICLUNA[1], K. BARBARO[1,4]

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THE USE OF BOTTLENOSE DOLPHIN UMBILICAL CORD MESENCHYMAL STEM CELLS IN REGENERATIVE MEDICINE AND DIAGNOSTIC TESTS

P2

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INCORPORATION OF BORATE-BASED BIOACTIVE GLASS PARTICLES AS INORGANIC FILLER IN ALGINATE-BASED HYDROGELS FOR BONE TISSUE REGENERATION

P3

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OZOILE-ALGINATE MICROSPHERES FOR THE THERAPEUTIC MANAGEMENT OF CROHN'S DISEASE

P4

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SYNTHESIS AND CHRACTERIZATION OF RGO/PDA/ALGINATE HYDROGEL AS POSSIBLE WOUND DRESSING

P5

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REGENERATIVE MEDICINE BY STEM CELLS AND BIOINFORMATICS STUDY: REPAIR OF ARTICULAR HYALINE

P6

F. GRASSI[A], M. PETRETTA[A,B], C. CHIARIOTTI[A], B. GRIGOLO[A]

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[B]REGENHU SA, VILLAZ S PIERRE, SWITZERLAND

MELT-ELECTROWRITTEN PCL SCAFFOLDS LOADED WITH METHACRYLATED FIBROIN AND HUMAN BONE POWDER FOR BONE TISSUE ENGINEERING APPLICATIONS

P7

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IMPROVING THE PRINTABILITY OF HYALURONIC ACID/GELATIN BIOINKS BY PRE-CROSSLINKING

P8

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EFFECT OF GALLIUM ON PHYSICOCHEMICAL CHARACTERISTICS OF HYDROXYAPATITE

P9

A. PADMANABHAN[A], A. SENSINI[B], M.L. FOCARETE[A], L. CRISTOFOLINI[B], G. CENACCHI[C,D], R. COSTA[C,D], S. PACILIO[C,D]

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A GRADIENT MINERALISATION TECHNIQUE FOR FASCICLE-INSPIRED ELECTROSPUN BUNDLES TO BE USED FOR ENTHESIS REGENERATION

P10

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INJECTABLE BIOMIMETIC MICROPARTICLES FOR *IN SITU* MYOCARDIAL REGENERATION: A COMPARISON BETWEEN TRADITIONAL AND MICROFLUIDIC FABRICATION TECHNIQUES

P11

J. STOJKOVSKA[A,B], I. BANICEVIC[A], J. PETROVIC[A,B], M. MILIVOJEVIC[C], M. STEVANOVIC[C,D,E], B. OBRADOVIC[A]

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NOVEL 3D APPROACH FOR OSTEOSARCOMA RESEARCH COMPRISING BIOACTIVE COMPOSITE SCAFFOLDS IN CONJUNCTION WITH PERFUSION BIOREACTORS

P12

B. OBRADOVIC*[A], J. STOJKOVSKA[A,B], Z. RADOVANOVIC[B], T. MATIC[B], R. PETROVIC [A], DJ. JANACKOVIC[A], DJ. VELJOVIC [A]

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THE EXCELLMATER PROJECT FOR ADVANCEMENT OF NOVEL BIOCERAMIC AND COMPOSITE BIOMATERIALS FOR MEDICAL APPLICATIONS

P13

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FABRICATION AND CHARACTERISATION OF HYDROXYAPATITE REINFORCED COLLAGEN POROUS COMPOSITE BEAMS FOR BONE TISSUE ENGINEERING

P14

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FABRICATION AND EVALUATION OF HA/PEARL COMPOSITE PARTICLES AND CHITOSAN BASED SCAFFOLDS

P15

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CYTOCOMPATIBILITY OF SOL-GEL COATINGS CONTAINING CARBON NANOPARTICLES

SESSION (P16-P32)

P16

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DEVELOPMENT OF A FUNCTIONAL RESISTANCE ZIRCONIA GRADED BIOACTIVE COMPOSITE

P17

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PREPARATION OF UNCALCINED HYDROXYAPATITE MICROSPHERES AND IN VITRO DISSOLUTION ASSESSMENT

P18

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THE DEPENDENCE OF ANTIMICROBIAL ACTIVITY ON THE CU^{2+} CONCENTRATION IN $Ca_{10.5-x}Cu_x(PO_4)_7$

P19

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MODELLING THE BEHAVIOUR OF TWO TITANIUM-BASED ALLOYS WITH AN EQUIVALENT CIRCUIT

P20

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INFLUENCE OF Zn ON PROPERTIES EVALUATION OF Mg-0.5Ca-xZn BIODEGRADABLE ALLOYS

P21

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BIOACTIVE ANTIBIOTIC-ELUTING HYDROXYAPATITE-BASED COATINGS OBTAINED BY ELECTROPHORETIC DEPOSITION ON TITANIUM

P22

M. MARSICO[A], M. CURCIO[A], A. GALASSO[A], P. FALABELLA[A], M. TRIUNFO[A], A. GUARNIERI[A], R. SALVI [A], C. SCIEUZO[A], D. IANNICIELLO[A], R. TEGHIL[A], A. DE BONIS[A].
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CHITOSAN-METAL NANOPARTICLES COMPOSITE WITH ENHANCED ANTIBACTERIAL ACTIVITY

P23

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MICROSTRUCTURE AND MECHANICAL PROPERTIES OF NEW Ni-Cr AND Co-Cr DENTAL ALLOYS

P24

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THE EFFECTS OF ULTRASONIC SCALING AND AIR-ABRASIVE POWDERS ON THE DECONTAMINATION OF 9 IMPLANT-ABUTMENT SURFACES: SCANNING ELECTRON ANALYSIS AND IN VITRO STUDY

P25

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3D PRINTING OF POROUS CALCIUM PHOSPHATE CERAMICS

P26

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DOES A NANO BIOCERAMIC SURFACE ENHANCE BONE INTEGRATION WITH TITANIUM ALLOYS?

P27

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SURFACE CHARACTERISTICS EVALUATION OF TRANSLUCENT MULTILAYERED DENTAL ZIRCONIA SUBJECTED TO DIFFERENT METHODS OF AGING

P28

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POLYANILINE COLLOIDAL DISPERSIONS WITH IMMUNOMODULATORY EFFECT PREPARED BY ENZYME-CATALYSED POLYMERIZATION

P29

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MULTIDOPED TRICALCIUM PHOSPHATE/POLYHYDROXYNONANOATE-BASED BONE SUBSTITUTES

P30

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CHARACTERIZATION OF THE CELLULOSE ACETATE COATINGS FOR MAGNESIUM ALLOYS

P31

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COPPER-BASED COMPOSITE COATING AS AN ANTIMICROBIAL SURFACE

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COMPARISON OF PHYSICOCHEMICAL PROPERTIES OF CALCINED AND UNCALCINED HYDROXYAPATITE NANOSPHERES