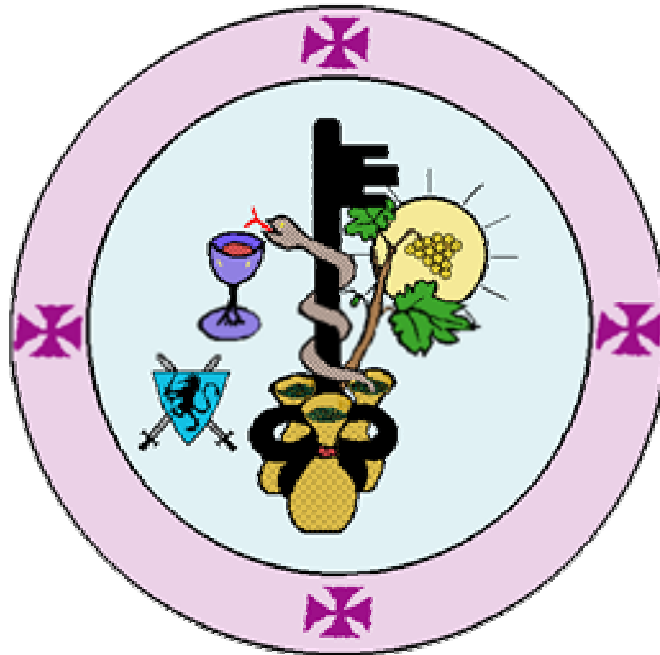


ISTEC-CNR

INSTITUTE OF SCIENCE AND TECHNOLOGY FOR CERAMICS
ITALIAN NATIONAL RESEARCH COUNCIL



CERAMICS, CELLS AND TISSUES
9th Annual Seminar & Meeting



Topic of this year:

MATERIALS FOR TISSUES ENGINEERING
CHEMISTRY AND MICROSTRUCTURE: THE ROLE FOR CERAMICS

Congress Hall of BANCA DI ROMAGNA
Via P. Costa, 3 - Faenza – Italy

September 28 – October 1, 2004

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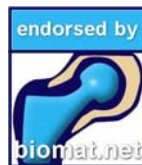
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and the collaboration of the following Associations:

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- University of Tokyo, Faculty of Medicine, Department of Oral Surgery (Tokyo, J).
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- University of Northumbria at Newcastle, Surface Engineering Research Centre (Newcastle-upon-Tyne, UK).

9th Seminar and Meeting on:
CERAMICS, CELLS AND TISSUES
MATERIALS FOR TISSUES ENGINEERING
CHEMISTRY AND MICROSTRUCTURE: THE ROLE FOR CERAMICS

Congress Hall of Banca di Romagna
Via P. Costa 3 – 48018 Faenza - Italy

September 28 – October 1, 2004

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Katsunari Nishihara

Nishihara Institute – Tokyo – Japan

Christian Rey

InterUniversity Centre of Research & Engineering of Materials – National Polytechnic Institute of Toulouse – France

CHAIRMEN

A. Ravaglioli, A. Krajewski

ISTEC – CNR (Faenza, I)

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PAST PRESIDENTS

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CERAMICS, CELLS AND TISSUES
MATERIALS FOR TISSUES ENGINEERING
CHEMISTRY AND MICROSTRUCTURE: THE ROLE FOR CERAMICS
September 28 – October 1, 2004

PROGRAM FOR

TUESDAY SEPTEMBER 28, 2004

Congress Hall of Banca di Romagna
Via P. Costa 3, Faenza

15÷18	<ul style="list-style-type: none">▪ Registration of the participants at the Congress Hall ▪ Placing of Posters: mounted on the appropriately numbered board▪ Facultative visit to the International Museum of Ceramics of Faenza <i>Viale Baccarini, 15, Faenza; <u>free entrance</u> http://www.racine.ra.it/micfaenza/index.htm</i>
19÷22	<ul style="list-style-type: none">▪ WELCOME COCKTAIL PARTY ▪ Visit to the halls of “Carlo Zauli” Museum, with exhibition <i>Via della Croce, 6 – Faenza</i> <div style="text-align: right;"><p>museocarlozauli http://www.museozauli.it</p></div>

Notice:

The Fourth CCT Prize

Also this year, the Scientific and Organising Committees will award a prize of € 500 for the best oral paper presented by a young researcher on the basis of scientific content and quality of presentation.



The title of the award is:
€ 500

This is the fourth award financed by



SCIENTIFIC PROGRAM

WEDNESDAY SEPTEMBER 29, 2004

8.30-9.30 Registration of the participants

Note:

**All sessions of this 9th CCT Meeting-Seminar are held in the Room "A".
Special Round Tables are held in the Room "B".**

MORNING SESSION - Room A: 9.30-13.15

9.30 - Welcome address by the Authorities

OPENING SESSION – INTRODUCTION AND GENERAL LECTURES

CHAIRMEN: K. Nishihara (J), C. Rey (F), A. Ravaglioli (I)

9.50 -	Conference Chairmen's opening address A. Ravaglioli, A. Krajewski ISTEC-CNR – Faenza (Italy)
10.05 -	The historical evolution on the concept of utility of bioceramics: from inert uses to regenerative bioengineering S. Hulbert President of the Rose-Hulman Institute of Technology – Terre Haute (IN-USA)
10.25 -	Disclosure of the key cause of intractable immune diseases by means of hybrid-type artificial immune organs K. Nishihara President of Nishihara Institute – Tokyo (Japan)
10.45 -	Ion substitution in apatites and their physical-chemical and biological consequences C. Rey, C. Combes, C. Drouet CIRIMAT, ENSIACET – Toulouse (France)
11.05 -	Nanoscale ceramics, proteins and cells: building blocks for hard tissues R.W. Siegel Rensselaer Nanotechnology Centre, Rensselaer Polytechnic Institute – Troy (NY-USA)
11.25 -	DISCUSSION
11.45 -	COFFEE BREAK

12.00 -	Biodegradable composites containing bioactive glass for tissue engineering scaffolds A.R. Boccaccini Department of Materials and Centre for Tissue Engineering and Regenerative Medicine, Imperial College – London (UK)
12.20 -	Application of nanotechnology for alternative surfaces of total joint components F. Namavar Department of Orthopaedics and Rehabilitation, University of Nebraska Medical Center, Scott technology Center – Omaha (Nebraska-USA)
12.50 -	Intelligent biomaterials for tissue repair and regeneration: the challenge of bioactive ceramics F. Branda, A. Costantini, G. Luciani, B. Silvestri, A. Ravaglioli Dept. of Materials and Production Engineering, University “Federico II” – Napoli (Italy)
13.05 -	DISCUSSION
13.15 -	LUNCH

AFTERNOON SESSIONS

- Room A: 15.00-19.30

SESSION 1 – MATERIALS-TISSUE INTERACTIONS

CHAIRMEN: S. Oscarsson (S), H. Uludag (CAN)

15.00 -	Bone cell (MG63) attachment to protein coated silicon wafers Å. Rosengren ^{1,2} , A. Vitina ² , S. Oscarsson ^{1,2} ¹ Dept. for Chemical Engineering, Malardalen University - Eskilstuna (Sweden); ² Center for Surface Biotechnology, Uppsala University – Uppsala (Sweden)
15.15 -	Response of normal human osteoblast cells for titanium with hydrothermal treatment H. Oguchi ¹ , Y. Karube ¹ , T. Ohshima ² , N. Maeda ² , M. Morito ¹ ¹ Department of Geriatric Dentistry, ² Department of Oral Bacteriology, Tsurumi School of Dental Medicine; Yokohama (Japan)
15.30 -	Collagen-silica interactions and relevance to biomaterials containing silica D. Eglin, S. Maalhem, T. Coradin, J. Livage Lab. of Condensed Matter Chemistry, University “Pierre et Marie Curie” – Paris (France)
15.45 -	In vitro and in vivo evaluation of SiO₂-based coating enriched with a bioactive peptide A. Bagno ¹ , M. Dettin ¹ , N. Mela ¹ , A. Cacchioli ² , M. Morpurgo ³ , M. Guglielmi ⁴ , C. Gabbi ² , C. Di Bello ¹ ¹ Dept. of Chemical Process Engineering, University of Padova (Italy); ² Dept. of Animal Health, University of Parma (Italy); ³ Dept. of Pharmaceutical Sciences, University of Padova (Italy); ⁴ Dept. of Mechanical Engineering, University of Padova (Italy)
16.00 -	DISCUSSION on the lectures of Session 1 and Poster P26.
16.15 -	COFFEE BREAK

SESSION 2 – SCAFFOLDS FOR HARD TISSUES (PART 1)

CHAIRMEN: A. Krajewski (I), L. Di Silvio (UK)

16.30	- INVITED LECTURE Stem cells and scaffolds for bone tissue engineering L. Di Silvio Guy's, King's and St Thomas' Medical and Dental Inst., King's College – London (UK)
16.50	- Three-dimensional porous bioactive glass fibre scaffolds: hydrodynamic and geometric characterisation L. Moimas ^{1,2,3} , K. Markkula ^{2,3} , C. Schmid ² , E. Pirhonen ¹ ¹ Inion Ltd. - Tampere (Finland); ² DIMCA, University of Trieste (Italy); ³ Department of Materials Engineering, Tampere University – Tampere (Finland)
17.05	- Modelling of antibiotic release from delivery systems based on hydroxyl-apatite implants O. Zamoum ^{1,2} , S. Thibault ¹ , G. Regnié ¹ , M.O. Mecherri ² , M. Fiallo ¹ , P. Sharrock ² ¹ LCBM, University “Paul Sabatier”, Castres (France); ² University of Tizi Ouzou (Algerie)
17.20	- Bioactivity of glass-ceramic scaffolds for tissue engineering E. Verné, C. Vitale-Brovarone Dept. of Materials Science and Chemical Engineering, University Polytechnic of Torino (Italy)
17.35	- DISCUSSION on the lectures of Session 2 and Posters P8, P75, P109, P117.

SESSION 3 – MATERIALS IN SIMULATED BODY FLUIDS

CHAIRMEN: C. Tas (USA), C. Di Bello (I)

17.50 -	INVITED LECTURE Spark Plasma Sintering (SPM), thermal spray processing and in vitro characterisation of nanostructured hydroxyapatite (HA) and HA/nano-zirconia coatings K.A. Khor ¹ , H. Li ¹ , P. Cheang ² ¹ School of Mechanic and Production Engineering, ² Division of Bioengineering, College of Engineering; Nanyang Technological University - Singapore
18.10 -	Precipitation of carbonate-apatite from revised simulated body fluid S.V. Dorozhkin Professional – Moscow (Russia)
18.25 -	<i>In vitro</i> comparison testing of novel calcium phosphate nanowhiskers prepared by a microwave-assisted molten salt process S. Jalota, A.C. Tas, S.B. Bhaduri School of Materials Science and Engineering, Clemson University (SC-USA.)
18.40 -	<i>In vitro</i> comparison of the apatite-inducing ability of three different SBF solutions on Ti6Al4V S. Jalota, A.C. Tas, S.B. Bhaduri School of Materials Science and Engineering, Clemson University (SC-USA)
18.55 -	Antithrombin interactions with heparin surfaces in blood plasma studied by multicoloured TIRF J.E. Klinth ^{1*} , K. Nilsson-Ekdahl ^{1,2} and R. Larsson ² . ¹ Department of Chemistry and Biomedical Sciences, University of Kalmar, SE-391 82 Kalmar (Sweden); ² Department of Oncology, Radiology and Clinical Immunology, Section of Clinical Immunology, Rudbeck Laboratory C5, Uppsala University Hospital, SE-75185 Uppsala (Sweden)
19.10 -	INVITED LECTURE An <i>in vitro</i> study of the sterilisation of titanium dental implants using low intensity UV-radiation V. Bavastrello ^{1,2} , D.J. Riley ¹ , U. Covani ² , A. Barone ² , C. Nicolini ^{1,2} ¹ “Elba” Foundation – Rome (Italy); ² Nanoword Institute and Biophysics, University of Genova (Italy)
19.25 -	DISCUSSION on the lectures of Session 3 and Poster P86.
20.00 - 22.0	WELCOME PARTY AND BUFFET OFFERED BY THE MAJOR OF FAENZA

THURSDAY SEPTEMBER 30, 2004

MORNING SESSIONS

- Room A: 8.30-13.00

SESSION 4 – SURFACE MODIFICATIONS AND CELLS

CHAIRMEN: A. Cigada (I), J. Planell (E), K. Nishihara (J)

8.30 -	Surface modification of hydroxyapatite ceramics to modulate cell adhesion and improve tissue generation A. Schuessele ¹ , B. Volk ^{1,3} , H. Mayr ² , T. Blunk ¹ , M.B. Schulz ^{1,3} , A. Goepferich ¹ ¹ Department of Pharmaceutical Technology, University of Regensburg (Germany); ² “Friedrich-Baur” Research Institute for Biomaterials – Bayreuth (Germany); ³ Institute for Pharmaceutical Sciences, Pharmaceutical Technology, “Karl-Franzens” University – Graz (Austria)
8.45 -	Application of cell sorting by surface modification C.-C. Lin, F.-H. Lin Institute of Biomedical Engineering, National Taiwan University – Taipei (Taiwan)
9.00 -	<i>In vitro</i> characterisation of a novel antibacterial surface treatment on titanium B. Del Curto ¹ , M.F. Brunella ¹ , C. Giordano ¹ , M.P. Pedefferri ¹ , V. Valtulina ² , L. Visai ² , A. Cigada ¹ ¹ Department of Chemistry, Materials and Chemical Engineering, University Polytechnic “Giulio Natta” – Milan (Italy); ² Department of Biochemistry-Medicine, University of Pavia (Italy)
9.15 -	Alteration of the surface composition of biomaterials by segregation C.C. Sorrell, O.C. Standard, S. Kennedy, J. Nowotny School of Materials Science and Engineering, University of New South Wales – Sydney (Australia)
9.30 -	DISCUSSION on the lectures of Session 4 and Poster P42.

SESSION 5 – BONE REGENERATION AND TISSUE REPAIR

CHAIRMEN: F. Rustichelli (I), Y. Ikada (J), A.M. Gatti (I)

9.45 -	INVITED LECTURE Polymeric biomaterials for bone regeneration Y. Ikada Suzuka University of Medical Sciences – Suzuka, Mie (Japan)
10.05 -	Advanced X-ray micro-analysis of bone regenerated by bone marrow stromal cells M. Mastrogiacomo ¹ , A. Cedola ^{2,3} , V. Komlev ^{2,4,6} , Françoise Peyrin ⁵ , P. Giannoni ¹ , R. Cancedda ¹ , S. Lagomarsino ^{2,3} , F. Rustichelli ⁶ ¹ Laboratory of Regenerative Medicine, National Cancer Research Institute – Genova (Italy); ² INFM – Ancona (Italy); ³ Photonic and Nanotechnologies Institute of C.N.R. – Rome (Italy); ⁴ Institute for Physical Chemistry of Ceramics, Russian Academy of Sciences – Moscow (Russia); ⁵ ESRF – Grenoble (France); ⁶ Department of Sciences Applied to Complex Systems, Polytechnic University of Marche – Ancona (Italy)
10.20 -	Imparting mineral affinity to proteins: novel tools for bone tissue engineering H. Uludag, G. Bansal, S. Gittens, J. Wright, C. Kucharski Department of Chemical and Materials Engineering and Department of Biomedical Engineering, University of Alberta – Edmonton (Alberta – Canada)
10.35 -	Comparison of computerized histomorphometry, back scattered electron imaging of scanning electron microscope and energy dispersive X-ray analysis in evaluation of bone ingrowth into porous bioactive glass and titanium implants H. Ylänen ¹ , C. Ekholm ¹ , N. Moritz ² , H.T. Aro ² , M. Hupa ¹ ¹ Process Chemistry Centre, Åbo Akademi University – Turku (Finland); ² Orthopaedic Research Laboratory, University of Turku (Finland)
10.50 -	Fully biodegradable PLA/CaP glass composite material for bone regeneration: surface properties and in vitro cell response M. Navarro ¹ , I. Amaral ² , E. Engel ¹ , M. Barbosa ² , M.P. Ginebra ¹ , J.A. Planell ¹ ¹ Center of Reference for Bioengineering of Catalonia (CREBEC), Biomaterials and Biomechanics Division, Technical University of Catalonia – Barcelona (Spain); ² Institute of Biomedical Engineering (INEB), University of Porto (Portugal)
11.05 -	DISCUSSION on the lectures of Session 5 and Poster P40, P115.
11.20 -	COFFEE BREAK

SESSION 6 – BIOCERAMIC COATINGS

CHAIRMEN: G. Rizzi (I), R. Groppetti (I), E. Verné (I)

11.35 -	Atomic transfers between implanted bioceramics and tissues in orthopaedic surgery J.L. Irigaray, G. Guibert, E. Chassot, E. Jallot L.P.C. Clermont-Fd, “Blaise Pascal” University – Aubiere (France)
11.50 -	Rapid coating of Ti6Al4V at room temperature with a calcium phosphate solution similar to 10 SBF A. C. Tas, S. B. Bhaduri School of Materials Science and Engineering, Clemson University (SC-USA)
12.05 -	Contribution to the development and characterization of biomimetic and bioactive hydroxyapatite coating for orthopaedic and dental implants R. Groppetti ¹ , M. Malpeli ¹ , A. Mangia ² , C. Mucchino ² , A. Scrivani ¹ , N. Senin ¹ ¹ Department of Industrial Engineering, University of Parma (Italy); Department of General and Inorganic Chemistry, Analytical Chemistry, Physic-Chemistry, University of Parma (Italy)
12.20 -	DISCUSSION on the lectures of Session 6 and Posters P13 and P76.

SESSION 7 – PATENTS, CERTIFICATIONS AND STANDARDS

CHAIRMEN: S. Mangini (I), L. Carnevali (I)

12.35 -	Patent strategies: a ceramics perspective S. Mangini Studio Torta – Bologna (Italy)
12.50 -	Technical standards and regulatory frameworks in tissue engineering: an overview of the role of the certification A. Faenza Professional – Bologna (Italy)
13.05 -	New law about animal experiment in Italy: “On. Schmidt”: revision D.L. 116/92 L. Carnevali ¹ , G. Noera ² ¹ DVM-HRS – Bologna (Italy); ² Department of Cardiothoracic Surgery, “Villa Maria Cecilia” Hospital, School of Cardiac Surgery, University of Modena and Reggio Emilia – Cotignola (Ravenna) (Italy)
13.20 -	DISCUSSION on the lectures of Session 7
13.30 -	LUNCH

AFTERNOON SESSIONS - **Room A: 15.00-20.00****SESSION 8 – CLINICAL EXPERIENCES****CHAIRMEN: C.C. Sorrell (AUS), R. Giardino (I)**

15.00 -	Effect of specific bioceramic chemistry on osteogenesis in a single pore rodent model M.B. Pabbruwe ¹ , O.C. Standard ² , C.R. Howlett ³ , C.C. Sorrell ² ¹ Chemical Engineering Dept., University of Bath (UK); ² School of Materials, Science and Engineering, University of New South Wales – Sydney (Australia); ³ Bone Materials Unit, School of Pathology, University of New South Wales – Sydney (Australia)
15.15 -	Dental stem cells in tooth repair: a cellular and molecular approach T.A. Mitsiadis Department of Craniofacial Development, GKT Dental Institute, King's College, Guy's Hospital – London (UK)
15.30 -	Development of the hybrid-type artificial root and clinical applications M. Tejima, K. Nishihara Nishihara Institute, Tokyo (Japan)
15.45 -	DISCUSSION on the lectures of Session 8 and Posters P15.

SESSION 9– COMPOSITES FOR TISSUE ENGINEERING (PART 1)**CHAIRMEN: S. Kumar (IN), A. Tampieri (I), N. Theilgaard (D)**

16.00 -	Biohybrid HA/ALG composite as bone substitute with drug delivery function E. Landi, A. Tampieri, M. Sandri, G. Celotti ISTEC-CNR – Faenza (Italy)
16.15 -	Vibrational and thermal study on the in vivo degradation of a poly-(ϵ-caprolacton)/apatite-based biodegradable scaffold A. Tinti, P. Taddei, M. Reggiani, C. Fagnano Department of Biochemistry “G. Moruzzi”, University of Bologna (Italy)
16.30 -	Introduction of multifunctional materials (MFM): bioabsorbable osteoconductive drug-releasing hard tissue fixation screws N. Ashammakhi ^{1,3} , M. Veiranto ¹ , K. Knuutila ¹ , P. Viitanen ¹ , E. Suokas ² , J. Tiainen ³ , S. Leinonen ³ , S.-M. Niemelä ³ , H. Syrjälä ⁴ , T. Waris ³ , P. Törmälä ¹ ¹ Institute of Biomaterials, Tampere University of Technology - Tampere (Finland); ² Linvatec Biomaterials Ltd. – Tampere (Finland); ³ Department of Surgery, University of Oulu (Finland); ⁴ Department of Infection Control, University of Oulu (Finland)
16.45 -	DISCUSSION on the lectures of Session 9 and Poster P107.
17.00 -	COFFEE BREAK

SESSION 10 – SCAFFOLDS FOR HARD TISSUES (PART 2)**CHAIRMEN: C. Tanzi (I), G. Ciapetti (I)**

17.15 -	Interactions between bone cells and hydroxyapatite particles used as filler in polymeric scaffolds for bone engineering D. Granchi ¹ , G. Ciapetti ¹ , L. Ambrosio ² , I. Amato ¹ , S. Pagani ¹ , A. Lamolinara ¹ , A. Pellicani ¹ , P. Netti ² , N. Baldini ¹ ¹ Laboratory of Physiopathology of Orthopaedic Implants, IOR - Bologna (Italy); ² Institute for Composite and Biomedical Materials (IMCB) of C.N.R. and Interdisciplinary research Centre on Biomaterials, University “Federico II” of Naples (Italy)
17.30 -	Gellan-hydroxyapatite composites for the fabrication of scaffolds to be used in bone reconstruction N. Barbani ¹ , M.L. Coluccio ¹ , G.D. Guerra ² , A. Krajewski ³ , M. Mazzocchi ³ , A. Ravaglioli ³ ¹ Department of Chemical Engineering, Industrial Chemistry and Materials Science, University of Pisa (Italy); ² Institute for Composite and Biomedical Materials (IMCB) of C.N.R., Section of Pisa (Italy); ³ Institute of Science and Technology for ceramic Materials (ISTEC) of C.N.R., Faenza (Italy)
17.45 -	Hydroxyapatite added polycaprolactones as scaffolds for osteoblasts growth G. Ciapetti ¹ , L. Ambrosio ² , D. Granchi ¹ , S. Pagani ¹ , A. Lamolinara ¹ , A. Pellacani ¹ , F. Causa, D. Martini ³ , N. Baldini ¹ ¹ Laboratory of Physiopathology of Orthopaedic Implants, IOR - Bologna (Italy); ² Institute for Composite and Biomedical Materials (IMCB) of C.N.R. and Interdisciplinary Research Centre on Biomaterials, University “Federico II” of Naples (Italy); ³ Institute of Normal Human Anatomy, University of Bologna (Italy)
18.00 -	Characterisation and study of the degradation of scaffolds for tissue engineering M. Charles-Harris, A. Beaussaret, E. Hentges, J.A. Planell Centre of Reference for Bioengineering of Catalonia (CREBEC), Biomaterials and Biomechanics Division, Technical University of Catalonia – Barcelona (Spain);
18.15 -	Computational study of drug transport and mechanical behaviour of a porous hydroxyapatite-based material L. Bertolazzi ¹ , F. Galbusera ¹ , P. Vena ¹ , G. Dubini ¹ , R. Contro ¹ , N. Roveri ² , B. Palazzo ² , M.C. Sidoti ² ¹ Laboratory of Biological Structure Mechanichs, Politecnico di Milano (Italy); ² Dept. of Chemistry “G. Ciamician”, University of Bologna (Italy)
18.30 -	DISCUSSION on the lectures of Session 10 and Poster P89, P75.

SESSION 11 – CEMENTS AND BONE TISSUES

CHAIRMEN: S.M. Barinov (Rus), F.-H. Lin (Taiwan)

18.45 -	Reaction-setting cement in the calcium hydroxide-potassium hydrogen phosphate system I.V. Fadeeva ¹ , S.M. Barinov ¹ , J. Durišin ² , L. Medvecký ² , D.A. Fedotov ¹ , V.S. Komlev ¹ Institute for Physical-chemistry of Ceramics, Russian Academy of Sciences - Moscow (Russia); Institute of Materials Research, Slovak Academy of Sciences - Košice (Slovakia)
19.00 -	Interactions between a Ca-aluminate based cement and bone tissue N. Axén ¹ , L.M. Bjursten ² , H. Engqvist ¹ , L. Hermansson ^{1,3} ¹ Doxa AB - Uppsala (Sweden); ² Department of Experimental Research, Lund University, University of Malmö (Sweden); ³ Department of Materials Science, University of Uppsala (Sweden)
19.15 -	Cytotoxicity of partial-stabilized cement Wen-Hsi Wang ¹ , Feng-Huei Lin ¹ , Chun-Pin Lin ² , Yuan-Ling Lee ² ¹ Institute of Biomedical Engineering, National Taiwan University; ² Graduate Institute of Clinical dental Science, College of Medicine, National University of Taiwan
19.30 -	Biomechanics of acrylate cements B. Basgorenay, K. Serbetci, N. Hasirci ¹ Department of Polymer Science and Technology, Middle East Technical University – Ankara (Turkey); ² Department of Chemistry, Middle East Technical University – Ankara (Turkey)
19.45 -	DISCUSSION on the lectures of Session 11 and poster 119.

FREE EVENING

FRIDAY OCTOBER 1, 2004

MORNING SESSIONS

- **Room A: 8.30-13.30**

SESSION 12 – BIOACTIVITY AND BIOCOMPATIBILITY

CHAIRMEN: F. Branda (I), S.-Y. Kim (Korea), H. Oguchi (Japan)

8.30 -	INVITED LECTURE Evaluation of the risk assessment from nanoparticles on human health A.M. Gatti Laboratory of Biomaterials, Dept. of Neurosciences, University of Modena and Reggio Emilia - Modena, (Italy)
8.45 -	Bioactivity of amorphous and devitrified RKKP F. Branda ¹ , B. Silvestri ¹ , G. Luciani ¹ , A. Costantini ¹ , A. Ravaglioli ² , A. Krajewski ² , A. Piancastelli ² ¹ Dept. of Materials Engineering and Production, University “Federico II” – Napoli (Italy); ² ISTEC - CNR – Faenza (Italy)
9.00 -	Interfacial properties of silica-based materials in relation to their bioactivity studied through the adsorption of small (bio)molecules: adsorption of CH₃OH V. Aina ¹ , V. Bolis ¹ , G. Magnacca ² , C. Morterra ² ¹ DiSCAFF, University of Western Piedmont “A. Avogadro” – Novara (Italy); ² Department of Chemistry IFM, University of Torino (Italy)
9.15 -	DISCUSSION on the lectures of Session 12 and posters P20 and P43.

SESSION 13 – CALCIUM PHOSPHATES AND SUBSTITUTED HYDROXYAPATITE

CHAIRMEN: R.Z. LeGeros (USA), C. Rey (F)

9.30 -	INVITED LECTURE Biomimetism related to chemical defects / doping apatites A. Tampieri, E. Landi, G. Celotti, S. Sprio ISTEC-CNR – Faenza (Italy)
9.50 -	Development of nanosized silver-substituted hydroxyapatite for tissue engineering applications N. Ramesh Babu ¹ , T.G. Prabhakar ² , K. Prasad Rao ¹ , T.S. Sampath Kumar ¹ ¹ Department of Metallurgical and Materials Engineering, Indian Institute of Technology of Madras – Chennai (India); ² Department of Veterinary Microbiology, Tamil Nadu Veterinary & Animal Science University - Chennai (India)
10.05 -	Carbonate loss from different carbonated apatites in the wide temperature range J.V. Rau ^{1,2} , S. Nunziante Cesaro ¹ , D. Ferro ¹ , S.M. Barinov ³ , I.V. Fadeeva ³ ¹ Institute for the Study of Nanostructured Materials of C.N.R. – Rome (Italy); ² Department of Chemistry, “M.V. Lomonosov” Moscow State University, Moscow (Russia); ³ Institute for Physical-Chemistry of ceramics, Russian Academy of Sciences – Moscow (Russia)
10.20 -	Synthesis and characterisation of porous β-tricalcium phosphate blocks M. Bohner ¹ , G.H. van Lenthe ² , S. Grünenfelder ¹ , W. Hirsiger ¹ , R. Evison ² , R. Müller ² ¹ Dr. h.c. Robert Mathys Foundation, Bettlach (Switzerland); ² Institute for Biomedical Engineering, Swiss Federal Institute of Technology (ETH) and University of Zürich (Switzerland)
10.35 -	F-substituted apatites: preparation and properties and <i>in vitro</i> cell response R.Z. LeGeros ¹ , C. Frondoza ² , S. Lin ¹ , M. Grzanna ² , R. Rohanizadeh ¹ , J.P. LeGeros ¹ New York University College of Dentistry – New York (USA); ² Johns Hopkins University Medical School - Maryland (USA)
10.50 -	DISCUSSION on the lectures of Session 13 and posters P108 and P111.
11.05 -	COFFEE BREAK

SESSION 14 – COMPOSITES FOR TISSUE ENGINEERING (PART 2)

CHAIRMEN: L. Ambrosio (I), M.F. Harmand (France)

11.20 -	GENERAL LECTURE Composite technology to design tissues engineering scaffolds L. Ambrosio, S. Battista, A. Borzacchiello, C. Borselli, F. Causa, P. Netti, S. Zappetelli Institute for Composite and Biomedical Materials (IMCB) of C.N.R. and Interdisciplinary Research Centre on Biomaterials, University “ <i>Federico II</i> ” of Naples (Italy);
11.40 -	A new biocompatible biomaterial: PEEK/β-TCP/TiO₂ composite M.-F. Harmand ^{1,2} , J.P. Cougoulic ¹ ¹ LEMI – Technopole Montesquieu – Martillac (France); ² DETERCA, University of Bordeaux 2 – Bordeaux (France)
11.55 -	Ca/P-coated SMP as filler of bone defects in mini-invasive surgical procedures L. De Nardo, S. Faré, S. Resta, M.C. Tanzi BioMatLab, Bioengineering Department, University Polytechnic of Milan (Italy)
12.10 -	DISCUSSION on the lectures of Session 14 and posters P39, P41 and P68.

SESSION 15 – NANOSTRUCTURED MATERIALS

CHAIRMEN: L.D. Pramatarova (Bulgaria), A. Wilson (UK), V. Bavastrello (I)

12.20 -	INVITED LECTURE Production and use of hydroxyapatite nanostructures L.D. Pramatarova Institute of Solid State Physics, Bulgarian academy of Sciences – Sofia (Bulgaria)
12.40 -	Bio-nanostructured conducting polymers S. Panero, B. Scrosati, J. Serra Moreno Department of Chemistry, University “ <i>La Sapienza</i> ”, Rome (Italy)
12.55 -	Scanning probe microscopy for the study of nanostructured coatings P.K. Datta ¹ , A. Wilson ¹ , A. Volkov ¹ , H.L. Du ¹ , A. Busiakiewicz ^{1,2} ¹ Advanced Materials Research Institute, SOET, Northumbria University – Newcastle-upon-Tyne (UK); ² Department of Solid State Physics, University of Lodz (Poland)
13.10 -	DISCUSSION on the lectures of Session 15 and poster P44.
13.20 -	LUNCH

AFTERNOON SESSIONS- **Room A: 15.00-20.00****SESSION 16 – BIOCHEMISTRY, BIOMECHANICS AND POSTURE****CHAIRMEN: J. Schrooten (Belgium), A. Natali (I), A. Vaccari (I)**

15.00 -	INVITED LECTURE Biomechanical investigation of functional response of biological tissues A. Natali Centre of Mechanics of Biological Materials, University of Padova (Italy)
15.20 -	Disclosure of mechanisms of evolution by means of a hybrid-type tissue engineering system K. Nishihara Nishihara Institute – Minato-Ku, Tokyo (Japan)
15.35 -	Microarray transcriptional profiling of osteoblast adhesion induced by biochemical factors A. Lucchini, A. Callegaro, S. Bicciato, C. Di Bello Department of Chemical Processes Engineering, University of Padova, Padova (Italy)
15.50 -	Guided bone engineering, healing of large bone defects J. Schrooten ¹ , P. Dubrue ² , J. Luyten ³ , F.P. Luyten ⁴ , J. Vander Sloten ⁵ , E. Schacht ² , J. Van Humbeeck ¹ ¹ Dept. of Metallurgy and Materials Engineering, Katholieke Universiteit Leuven (Belgium); ² Polymer Materials Research Group, Dept. of Organic Chemistry, University of Ghent, Ghent (Belgium); ³ Flemish Institute for Technological Research (VITO), Materials Technology, Mol (Belgium); ⁴ Laboratory of Skeletal Development and Joint Disorders, Dept. of Rheumatology, Katholieke Universiteit Leuven, Leuven (Belgium); ⁵ Division of Biomechanics and Engineering Design, Dept. of Mechanical Engineering, Katholieke Universiteit Leuven, Leuven (Belgium)
16.05 -	Muscle tone influence on human posture S. Zanfrini Lizard – Perugia (Italy)
16.20 -	DISCUSSION on the lectures of Session 16 and posters P74 and P104.
16.35 -	COFFEE BREAK

SESSION 17 – ELECTROMAGNETIC FIELDS FOR TISSUE ENGINEERING

CHAIRMEN: R. Cadossi (I), G. Celotti (I)

17.00 -	INVITED LECTURE The role of biophysical stimulation on cell and tissue interaction with biomaterials for skeletal tissue repair R. Cadossi ICEmB, Research & Development – Carpi (Modena) (Italy)
17.20 -	Effect of pulsed electromagnetic fields on the osteointegration of hydroxyapatite in cortical bone of rabbits M. Fini ¹ , G. Giavaresi ¹ , N. Nicoli-Aldini ¹ , L. Rimondini ¹ , S. Setti ² , F. Cavani ³ , V. Cané ³ , R. Giardino ¹ ¹ Experimental Surgery Department, Research Institute “Codivilla-Putti”, “Rizzoli” Orthopaedic Institutes - Bologna (Italy); ² IGEA Srl. – Modena (Italy); ³ Department of Anatomy and Histology, University of Modena and Reggio Emilia – Modena (Italy)
17.35 -	Analysis of the surface activation in biomimetic apatites through electrical polarisation G. Celotti, A. Tampieri, E. Landi, S. Sprio ISTEC-CNR – Faenza (Italy)
17.50 -	Protein adsorption and leukocyte adhesion on self-assembled monolayers of alkanethiols – the role of functional group and electrical charge M.C.L. Martins ¹ , J.N. Barbosa ^{1,2} , M.A. Barbosa ^{1,2} ¹ INEB – Institute of Biomedical Engineering, Biomaterials Laboratory – Porto (Portugal); ² Department of Metallurgical and Materials Engineering, Faculty of Engineering, University of Porto (Portugal)
18.05 -	DISCUSSION on the lectures of Session 17 and poster P21.

SESSION 18 – GENE EXPRESSION AND CELLS TRANSFECTION

CHAIRMEN: A. Facchini (I), P. Frayssinet (France)

18.15 - INVITED LECTURE	From traditional to nanostructured hydroxyapatite: new trends in bone substitution and gene therapy G. Logroscino ¹ , A. Tampieri ² , E Pola ¹ , L. Proietti ¹ , L. Petrella ¹ , G. Lorini ¹ ¹ Orthopaedic Department, Catholic University of Rome (Italy); ² ISTEC-CNR - Faenza (Italy)
18.35 -	A new utilisation of HA-ceramics: cell transfection P. Frayssinet Urodelia – St. Lys (France)
18.50 -	In vitro characterization of hydroxyapatite microparticles as gene carrier S.C. Ma ¹ , A. Costa ² , A. Ravaglioli ² ¹ Biomedical Engineering Department, Yale University - New Haven (CT-USA); ² ISTEC-CNR – Faenza (Italy)
19.05 -	Ceramics and gene therapy B. Grigolo ¹ , G. Lisignoli ¹ , S. Cristino ¹ , L. De Franceschi ¹ , L. Roseti ¹ , A. Frizziero ² , A. Facchini ^{1,3} ¹ Laboratory of Immunology and Genetics, Research Institute “Codivilla-Putti”, “Rizzoli” Orthopaedic Institutes - Bologna (Italy); ² VI Division, “Rizzoli” Orthopaedic Institutes - Bologna (Italy); ³ Department of Internal Medicine and Gastroenterology, University of Bologna (Italy)
19.35 -	DISCUSSION on the lectures of Session 18
19.45 -	CLOSING REMARKS
20.00 -	Visit to the “Rocca di Oriolo dei Fichi” with exhibition
21.00 -	OFFICIAL DINNER

**During the Official Dinner:
The Fourth CCT Prize Award**

financed by



Also this year, the Scientific and Organising Committees will award a young researcher a prize (€500) for the best oral paper presented, according to the scientific content and quality of presentation, as well as for the originality, the logical pathway and the technological and individual potential.

The Prize will be personally presented by the Presidents of the Conference and the President of Banca di Romagna.



CERAMICS, CELLS AND TISSUES
MATERIALS FOR TISSUES ENGINEERING
CHEMISTRY AND MICROSTRUCTURE: THE ROLE FOR CERAMICS
September 28 – October 1, 2004

GENERAL INFORMATION

REGISTRATION

The registration fee for each participant includes:

- Participation to the meeting-seminar; meeting bag and documentation
- Official Dinner, welcome party, coffee breaks

€ 350,00 to: “BANCA DI ROMAGNA” (address: Agency n. 1, C.so Garibaldi, 1, 48018 Faenza, Italy) account n. 000000008005, Bank Codes: ABI = 06205, CAB = 23704; cod. SWIFT: BARM IT 2F, cod. IBAN: IT30X0620523704000000008005, indicating clearly the matter: “9th CCT 2004 Registration Fee – ISTECCNR” and the participant’s name. All payments must be net of charge for the beneficiary. Proof of payment (photocopy of the Bank transfer) must be sent by fax to (+39.0546.46381) to Dr. Antonio Ravaglioli. Expiry date for this transfer is September 10, 2004.

€ 400,00 to the Secretariat at the meeting desk on September 28, 2004.

The accompanying persons could access to the sessions of the meeting-seminar free of charge.

Lunches are at own charge for each participant.

HOTEL ACCOMMODATION

<p>★★★★HOTEL RAMADA ENCORE FORLI' Viale Vittorio Veneto, 3E - Forlì Tel. +39 0543 22038 Fax +39 0543 458670 www.ramadaencoreforli.com e-mail: info@ramadaencoreforli.com B&B: €87,00</p>	<p>★★★HOTEL TERME Viale delle Terme, 37- Brisighella tel./Fax 0546.81144 www.hoteltermebrisighella.it e-mail: hotelterme@hoteltermebrisighella.it B&B: €65,00 s/r; €90,00 d</p>	<p>★★★HOTEL LA MERIDIANA Viale delle Terme, 19 - Brisighella tel./Fax 0546.81590 www.lameridianahotel.it e-mail: info@lameridianahotel.it</p>
<p>★★★★ALBERGO HOTEL GIGIOLE' P.zza Carducci, 5 - Brisighella (in the historical centre of the town). tel. 0546.81209 Fax 0546.81275 www.gigiole.it e-mail: gigiole.gigiole@tin.it B&B: €90,00</p>	<p>★★★HOTEL VALVERDE Via Lamone, 14 - Brisighella tel. 0546.81388 Fax 0546.80445 www.hotelvalverde.com e-mail: info@hotelvalverde.com B&B: €39,00 s/r; €57,00 d</p>	<p>★★ALBERGO LA ROCCA Via delle Volte, 10 - Brisighella (in the historical centre of the town). tel. 0546.81180 Fax 0546.80289 www.albergo-larocca.com e-mail: albristocca@libero.it</p>



Reservations of hotels are possible only out of Faenza. The above suggested hotels, in the near towns of Brisighella and Forlì, have been already contacted to guarantee a convenient and comfortable accommodation to the scientists participant in 9th CCT..

Brisighella (a picturesque historical town with thermal baths on the near hills, 10 km from Faenza) is well linked with a domestic railway to Faenza (less than 10 minutes).

Forlì (regional chief town of Roman origins, 13 km from Faenza) is located on the main railway route linking along Milano, Bologna and Faenza.

Two bus shuttle services are available and organized to transfer all participants from their hotels, both in Brisighella and in Forlì, to the Banca di Romagna Congress Hall in Faenza in time for the morning sessions and back in the afternoon to the respective hotels.

Shuttles will be at disposal also for transporting participants in occasion of the official events (welcome, cocktail party and official dinner).

Italian railway timetable is available at:

www.trenitalia.com also in English language.

9th CCT Secretariat: Dr.s A. Ravaglioli, A. Krajewski and M. Mazzocchi

✉ ISTECCNR: Via Granarolo n. 64 – 48018 Faenza - ITALY

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✉ e-mail: cct@istec.cnr.it; ravaglioli@istec.cnr.it; krajewski@istec.cnr.it

How to reach the Congress Hall of BANCA DI ROMAGNA
Via P. Costa, 3 - ☎ +39-0546-676230 – Faenza Italy

A14 Motorway Bologna-Ancona

International Museum of Ceramics
Viale Baccarini, 15



Suggested itinerary:
 15 min. from the Railway Station
 by walk, 10 min. from A14
 Motorway Faenza exit by car.



➔ The nearest and most important Airport to Faenza is **Bologna –“G. Marconi”**, linked to the central train station by a shuttle bus service. Minor regional airports near Faenza are at Forlì and Rimini. From Bologna to Faenza a main railway route offers very frequent trains all over the day. Italian railway timetable is available (also in English) at: www.trenitalia.com

Last Minute poster presentation

Until September 21, 2004, it is still possible to submit poster presentations concerning topics discussed in one of the meeting sessions.

Note for the proceedings

All the authors, interested to have printed the full text of the presented work on the 9th CCT proceedings, are kindly invited to send their final written text within November 30, 2004. It is planned to publish the proceedings of the 9th CCT on “Materials for Tissues Engineering - Chemistry and Microstructure: The Role for Ceramics” within the end of the 2004 year. The authors should send their contribution electronically written on floppy disks or on a CD-ROM (not rewritable, modality: open multisession), together with a copy printed on paper, to the secretary of the 9th CCT.

The text submitted must be written in English in unique column on an electronic standard page (21x29.7 cm) through Microsoft Word 2000 in format .rtf. The margins (left and right justified) must be settled as follows: top and bottom 2.5 cm., left and right 2.0 cm. The text must be typed using Times New Roman 12 pt character set, single spaced. Figures, tables and graphs must be included inside the text with their caption written with Arial 10 character set. The caption of figures or graphs must be written into a text label, joined to the corresponding image. To prevent possible loss of images during the treatment of the electronic sheets, the authors are kindly requested to produce also separate electronic copy of the figures, tables and graphs in a good .jpeg reproduction.

First page must contain the title of the presentation (character set: Times New Roman Bold 16 pt, centred), authors' names (character set: Times New Roman bold 12 pt, centred), Institutions with address and State between brackets (character set: Times New Roman 12, left justified), translated in English (and not in national language) quoted with proper increasing numerical symbols from the authors' names list. The minimum number of pages is 4 and the maximum one must not exceed 8.

Before any publication on the proceedings each contribution will be examined by 2 referees extracted from the International Scientific Committee.

POSTER SESSION

All posters presenters will have the opportunity to give an outlook of their work during the appropriate Session

P8 -	<p>Morphology of porous hydroxyapatite scaffold on the nutrition supply for hard tissue formation M. Yoshikawa^{1,2}, H. Ohgushi², N. Tsuji¹, T. Toda¹ ¹Department of Endodontics, Osaka Dental University 5-17, Otemae 1-chome, Chuo-ku,– Osaka 540-0008 (Japan); ²Tissue Engineering Research Group, Research Institute for Cell Engineering (RICE), National Institute of Advanced Industrial Science and Technology, (AIST), Amagasaki site, 3-11-46 Nakouji, Amagasaki City, Hyogo 661-0974 (Japan)</p>
P13-	<p>Nanotechnologies and bioceramic coatings G.A. Battiston¹, A. Rodriguez², R. Gerbasi¹, A. Krajewski³, A. Ravaglioli³ ¹Institute of Inorganic Chemistry and Surfaces of C.N.R. – Padova (Italy); ²Inorganic Chemistry Department, “La Laguna” University – Canary Islands (Spain); ³ISTEC-CNR – Faenza (Italy)</p>
P15 -	<p>Case reports of artificial root therapeutics M. Ogawa^{1,3}, A. Okamoto², T. Kaku³, K. Nishihara⁴ ¹Asty Dental Clinic – Sapporo (Japan); ²Okamoto Dental Clinic – Hakodate (Japan); ³Health Sciences University of Hokkaido (Japan); Nishihara Institute – Tokyo (Japan)</p>
P19-	<p>Bioactivity of Ca-aluminate based materials H. Engqvist¹, N.O. Ahnfelt¹ and L. Hermansson^{1,2} ¹Doxa AB, Axel Johanssons gata 4-6, SE-751 26 Uppsala, Sweden ²Uppsala University, Dept. of Materials Science, Box 534, SE-751 21, Uppsala, Sweden</p>
P20 -	<p>Biological evaluation of biodegradable polymers: bioceramic composites associated or not with tetracyclin A.L. Pataro¹, K.I.R. Teixeira¹, M.E. Cortés¹, L.L. Wykrota², R.M. De Marco Turchetti Maia³, M.T.P. Lopes³, M.F. Oliveira⁴, R.D. Sinisterra⁴ ¹Faculty of Dentistry, Federal University of Minas Gerais – Belo Horizonte - MG (Brazil); ²Brasilian Institute of Biomaterials (Brazil); ³Department of Pharmacology ICB-UFMG (Brazil); ⁴Department of Chemistry ICEX-UFMG (Brazil);</p>
P21 -	<p>Polyethylene treatments with ion and electron beams to improve its mechanical properties N. Campo¹, F. Caridi², L. Torrisi², A.M. Visco¹ ¹Industrial Chemistry and Materials Engineering Department; ²Physics Department; University of Messina (Italy)</p>
P26 -	<p>Investigation of the fibroblast behaviour on different material surfaces E. Pecheva¹, L. Pramatarova¹, G. Altankov² ¹Institute of Solid State Physics, Bulgarian Academy of Sciences – Sofia (Bulgaria); ²Institute of Biophysics, Bulgarian Academy of Sciences – Sofia (Bulgaria)</p>
P 39 -	<p>Composite plates of bioactive glass and bioabsorbable polymer for bone tissue applications H. Niiranen, M. Kellomäki, P. Törmälä Institute of Biomaterials, Tampere University of Technology – Tampere (Finland)</p>

P 40 -	A rat model for testing bone defects filler materials A. Kuusilehto ¹ , M. Märtson ² , S. Mansikka-Savolainen ² , K. Henriksson ² , J. Holmbom ³ , P. Saukko ⁴ , A. Södergård ² , J. Salonen ² , R. Penttinen ³ ¹ Institute of Dentistry; ² The Turku Biomaterial Centre; ³ Department of Medical Biochemistry; ⁴ Department of Forensic Medicine; University of Turku (Finland)
P 41 -	Synthesis of hydroxyapatite crystal based composite for caries prevention M. Utech, D. Vuono, F. Campolongo, P. De Luca, A. Nastro Department of “Pianificazione Territoriale”, University of Calabria – Arcavata di Rende (Cosenza) (Italy)
P 42 -	Bone tissue engineering on the surface of implants for osteosyntheses A.V. Karlov, I.A. Khlusov, S.M. Kiryutenco, A.A. Veshnyakov, D.A. Garays The Centre of Orthopaedics and Medical Materials Sciences of the TSC of the SB of RAMS – Tomsk (Russia)
P 43 -	The thin magnetron films for bioactive modification of various substrates surface and their biological properties A.V. Karlov ¹ , I.A. Khlusov ¹ , V.F. Pichugin ² , S.I. Tverdokhlebov ² ¹ The Centre of Orthopaedics and Medical Materials Sciences of the TSC of the SB of RAMS – Tomsk (Russia); ² Tomsk Polytechnic University – Tomsk (Russia)
P 44 -	<i>In vitro</i> regulation of cell behaviour by the synthetic hydroxyapatite nanoparticles A.V. Karlov ¹ , I.A. Khlusov ¹ , N.S. Pozhenco ¹ , M.V. Chaikina ² ¹ The Centre of Orthopaedics and Medical Materials Sciences of the TSC of the SB of RAMS – Tomsk (Russia); ² Institute for Solid Chemistry and Mechanochemistry of the SB of the RAS – Novosibirsk (Russia)
P 68 -	Hydroxylapatite-gelatine composite implants P. Sharrock, M. Fiallo Medical Bioinorganic Chemistry Laboratory, “Paul Sabatier” University - Castres (France)
P 74 -	Mineral evolution of bone of partially-domesticated animals A. Krajewski ¹ , A. Ravaglioli ¹ , G. Celotti ¹ , A. Piancastelli ¹ , B. Bacchini ² , L. Montanari ² , G. Zama ² , L. Piombi ² , M. Fini ³ , R. Giardino ³ ¹ ISTEC-CNR – Faenza (Italy); ² Interdisciplinary Clinical and Pharmacological Group – Faenza (Italy); ³ Experimental Surgery Department, Research Institute “Codivilla-Putti”, “Rizzoli” Orthopaedic Institutes - Bologna (Italy)
P 75 -	Tissue engineering biologically inspired: suitabilized ceramic scaffolds A. Ravaglioli ¹ , A. Krajewski ¹ , A. Piancastelli ¹ , S. Datta ² , H. Du ² ¹ ISTEC-CNR – Faenza (Italy); ² Advanced Materials Research Institute, School of Engineering and Technology, Northumbria University - Newcastle upon Tyne (UK)
P 76 -	Deposition of biological glass RKKP by plasma spray on ceramic and metal supports: physical-chemical study G. Rizzi ¹ , F. Scocca ² , A. Krajewski ³ , A. Ravaglioli ³ , A. Scrivani ⁴ ¹ Biocoatings Srl – Rubbiano di Solignano (Parma) (Italy); ² Chimicolor Sas – Besozzo (Varese) (Italy); ³ ISTEC-CNR – Faenza (Italy); ⁴ Department of Industrial Engineering, University of Parma (Italy)
P 86 -	<i>In vitro</i> analysis of calcium phosphates bioactivity A. Veresov, A. Kuznetsov, V. Putlayev, Yu. Tretyakov Materials Science Department, Moscow State University – Moscow (Russia)

P 89 -	Novel scaffolds and bioreactors design: tissue engineering research at University of Bath M.B. Pabbruwe, K. Stewart, A.J. McClumpha, M.J. Ellis, J.B. Chaudhuri Tissue Engineering Group, Department of Chemical Engineering & Centre for Regenerative Medicine, University of Bath (UK)
P 104 -	Microstructural and Mechanical Properties of Human Bones C. Bindal ¹ , I. Ucok ² , M. Usta ³ , A.H. Ucisik ⁴ ¹ Sakarya University - Serdivan-Sakarya (Turkey); ² Concurrent Technology Corporation – Johnstown (PA- USA); ³ Department of Materials Science and Engineering, Gebze Institute of Technology – Gebze/Kocaeli (Turkey); ⁴ Bogazici University – Bebek-Istanbul (Turkey)
P 107 -	Biomimetic “doped-HA/collagen” composites M. Sandri, A. Tampieri, E. Landi, G. Celotti ISTEC-CNR – Faenza (Italy)
P 108 -	Synthetic strontium-doped apatite for biomedical applications E. Landi, R. Ravaglioli, G. Celotti, A. Tampieri ISTEC-CNR – Faenza (Italy)
P 109 -	Porous scaffolds of carbonated hydroxyapatite for bone substitution E. Landi, S. Martorana, G. Celotti, A. Tampieri ISTEC-CNR – Faenza (Italy)
P 111 -	Porous graduated and carbonated hydroxyapatite as bone substitutes in orthopaedic surgery G. Logroscino ¹ , G. Maccauro ¹ , A. Tampieri ² , F. Larosa ¹ , G. Lorini ¹ ¹ Orthopaedic Dept., Catholic University of Roma (Italy); ISTEC-CNR – Faenza (Italy)
P 115 -	Tissue engineering and bone repair M. Kirsch ¹ , A. Krajewski ² , A. Ravaglioli ² ¹ Professionalist, Berlin (Germany); ² ISTEC-CNR – Faenza (Italy)
P 117 -	Biomimetic 3D scaffold for hard tissue regeneration R. Martinetti ¹ , L. Dolcini ¹ , G. Celotti ² , G. Martignani ³ , L. Pilotti ³ ¹ Fin-Ceramica Faenza s.r.l., Via Ravennana 186, Faenza (Italy); ² ISTEC – CNR, Faenza (Italy); ³ ENEA, Divisione Nuovi Materiali, Via Anguillarese 301, Roma (Italy)
P 119 -	Clotting behaviour of orthopaedic cements in human whole blood contact N. Axén ¹ , N.-O. Ahnfelt ¹ , T. Persson ¹ , L. Hermansson ^{1,3} , J. Sanchez ² , R. Larsson ² ¹ Doxa AB, Axel Johanssons gata 4-6, SE-751 26 Uppsala, Sweden ² Uppsala University, Department of Oncology, Radiology and Clinical Immunology The Rudbeck Laboratory, SE-751 85 Uppsala, Sweden ³ Uppsala University, Department of Materials Science The Angstrom Laboratory, SE-75451 Uppsala

9th CCT PROGRAM OVERVIEW

TUESDAY SEPTEMBER 28, 2004 - AFTERNOON

15.00-18.30	Opening of registration of participants in the Congress Hall (Banca di Romagna, Via P. Costa 3) and facultative visit to the MIC (International Museum of Ceramics)
19.00-22.00	Visit to the Museum "Zauli" (Via della Croce, 6) and Welcome Cocktail Party

THE SCIENTIFIC PROGRAM: Room A

Day	Time	Session	Topic	Chairmen	n. Papers	n. Posters
Wednesday September 29	9.30		Welcome address by the Authorities			
	9.50-13.15	Opening	Introduction and General Lectures	K. Nishihara (J), C. Rey (F), A. Ravaglioli (I)	8	-
	15.00-16.00	1	Materials-Tissue Interaction	S. Oscarsson (S), H. Uludag (Can)	4	1
	16.30-17.35	2	Scaffolds for Hard Tissues (Part 1)	A. Krajewski (I), L. Di Silvio (UK)	4	4
	17.50-19.25	3	Materials in Simulated Body Fluids	A.C. Tas (USA), C. Di Bello (I)	6	1
	20.00-22.00		WELCOME PARTY AND BUFFET BY THE MAJOR OF FAENZA			
Thursday September 30	8.30 -9.30	4	Surface Modifications and Cells	A. Cigada (I), J. Planell (E), K. Nishihara (J)	4	1
	9.45-11.05	5	Bone Regeneration and Tissue Repair	F. Rustichelli (I), Y. Ikada (J), A.M. Gatti (I)	5	2
	11.35-12.20	6	Bioceramics Coatings	G. Rizzi (I), R. Groppetti (I), E. Verné (I)	3	2
	12.35-13.30	7	Certifications and Standards	S. Mangini (I), L. Carnevali (I)	3	-
	15.00-15.45	8	Clinical Experiences	C.C. Sorrell (Aus), R. Giardino (I)	3	1
	16.00-17.00	9	Composites for Tissue Engineering (Part 1)	S. Kumar (India), A. Tampieri (I), N. Theilgaard (D)	3	1
	17.15-18.30	10	Scaffolds for Hard Tissues (Part 2)	C. Tanzi (I), G. Ciapetti (I)	5	2
	18.45-19.45	11	Cements and Bone Tissues	S.M. Barinov (Rus), F.-H. Lin (Taiwan)	4	1
Friday October 1	8.30-9.15	12	Bioactivity and Biocompatibility	F. Branda (I), S.Y. Kim (Korea), H. Oguchi (J)	4	2
	9.30-11.05	13	Calcium Phosphates and Substitute Hydroxyapatite	R.Z. LeGeros (USA), C. Rey (F)	5	2
	11.20-12.20	14	Composites for Tissue Engineering (Part 2)	L. Ambrosio (I), M.F. Harmand (F)	3	3
	12.20-13.20	15	Nanostructured Materials	L. Pramatarova (BG), A. Wilson (UK), V. Bavastrello (I)	3	1
	15.00-16.35	16	Biochemistry, Biomechanics and Posture	J. Schrooten (B), A. Natali (I), A. Vaccari (I)	5	2
	17.00-18.05	17	Electromagnetic Field for Tissue Engineering	R. Cadossi (I), G. Celotti (I)	4	1
	18.15-19.35	18	Gene Expression and Cells Transfection	A. Facchini (I), P. Frayssinet (F)	4	-
		19.45-20.00		CLOSING REMARKS		
		20.00-21.00		Visit to the "Rocca di Oriolo dei Fichi" historical site with exhibition		
		21.00-24.00		OFFICIAL DINNER <i>San Biagio Vecchio, Via Salita di Oriolo, 16 – 48018 Faenza (RA) – tel./fax 0546.642057</i>		

THE ROUND TABLES: Room B

Day	Time	RT n.	Topic	Chairmen	n. Papers
Thursday September 30	15.00-17.00	1	Cutting and Remodelling of Living Tissues: the Effects on Cells and Tissues	G. Noera (I), C. Zingaretti (I)	6
	17.15-18.00			G. Noera (I), A. Caso (I)	3
Friday October 1	15.00-16.35	2	Protective coatings suitable for tissues	A. Maresta (I), S. Datta (UK), A. Ravaglioli (I)	to be defined

SATELLITE SYMPOSIA AND SCIENTIFIC WORKSHOP (ITALIAN LANGUAGE)

Day	Time	n.	Topic	Chairmen	n. Papers
Room B - Wednesday September 29	16.30-19.00	SS1	Esperienze cliniche nel settore maxillofaciale e della cranioplastica	A. Nataloni (I) (Fin-Ceramica Faenza s.r.l.)	3
Room A - Saturday October 2	9.00-18.00	SW	POSTURE AND "GIACOBBE PROJECT" Anatomia funzionale e neurofisiologia della postura	F. Zarotti, M. Brunelli (Presidents)	16

ROUND TABLES

THURSDAY SEPTEMBER 30, 2004

AFTERNOON SESSION

- **Room B: 15.00-18.00**

ROUND TABLE 1: CUTTING AND REMODELLING OF LIVING TISSUES: THE EFFECTS ON CELLS AND TISSUES

CHAIRMEN: G. Noera (I), C. Zingaretti (I)

15.00	- Introduction to the round table
15.15	- Cutting and remodelling human tissue G. Noera ¹ , C. Zingaretti ² ¹ Department of Cardiothoracic Surgery, “Villa Maria Cecilia” Hospital, School of Cardiac Surgery, University of Modena and Reggio Emilia – Cotignola (Ravenna) (Italy); ² Department of Surgery, “San Salvatore” Hospital - Pesaro (Italy)
15.30	- New acquisition using blades in coronary artery surgery G. Noera ¹ , L. Carnevali ² ¹ Department of Cardiothoracic Surgery, “Villa Maria Cecilia” Hospital, School of Cardiac Surgery, University of Modena and Reggio Emilia – Cotignola (Ravenna) (Italy); ² DVM-HRS – Bologna (Italy)
15.45	- Ultrasonic scalpel blade C. Zingaretti Department of Surgery, “San Salvatore” Hospital - Pesaro (Italy)
16.00	- Cutting balloon for the treatment of renal in-stent restenosis A. Cremonesi, F. Castriota, R. Manetti, E. Ricci, A. Liso, K. Oshoala Interventional Cardio-Angiology Unit, “Villa Maria Cecilia” Hospital, Cotignola (Ravenna) (Italy)
16.15	- Physical and biologic effects of alternate current (RF) on living tissues. Clinical applications on cardiology: RF ablation P. Turco, B. El Jamal, R.F. Guaragna. G. Noera Hearth Department, “Villa Maria Cecilia” Hospital, Cotignola (Ravenna) (Italy)
16.30	- On the development and evaluation of Y-TZP surgical blades TiN and DLC coated by closed field unbalanced magnetron sputter ion plating R. Groppetti ¹ , A. Krajewski ² , M. Mazzocchi ² , A. Ravaglioli ² , A. Scrivani ¹ , N. Senin ¹ , F. Spocci ¹ ¹ Department of Industrial Engineering, University of Parma (Italy); ² ISTEC-CNR – Faenza (Italy)
16.45	- DISCUSSION
17.00	- COFFEE BREAK

CHAIRMEN: G. Noera (I), A. Caso (I),

17.15 -	Laser incision: new technologies for new indications L. Carnevali ¹ , G. Giovanardi, F. Gibertoni, G. Noera ² ¹ DVM-HRS – Bologna (Italy); ² Department of Cardiothoracic Surgery, “ <i>Villa Maria Cecilia</i> ” Hospital, School of Cardiac Surgery, University of Modena and Reggio Emilia – Cotignola (Ravenna) (Italy);
17.30 -	Surgical blades in ceramics: preliminary experiences in cardiovascular and general surgery L. Carnevali ¹ , G. Noera ² ¹ DVM-HRS – Bologna (Italy); ² Department of Cardiothoracic Surgery, “ <i>Villa Maria Cecilia</i> ” Hospital, School of Cardiac Surgery, University of Modena and Reggio Emilia – Cotignola (Ravenna) (Italy);
17.45 -	Intervention of Bettini S.p.A., Montemarenzo (BG)
18.00 -	DISCUSSION

FRIDAY OCTOBER 1, 2004

AFTERNOON SESSION

- Room B: 15.00-16.35

ROUND TABLE 2: PROTECTIVE COATINGS SUITABLE FOR TISSUES

CHAIRMEN: A. Maresta (I), S. Datta (UK), A. Ravaglioli (I)

15.00 - 16.35	(to be defined)
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SIMPOSIO SATELLITE SATELLITE SYMPOSIUM

In Italiano - Italian language

MERCOLEDÌ 29 SETTEMBRE

Sala B: 16.30-19.00

Organizzato in collaborazione con



Fin-Ceramica Faenza S.r.l.

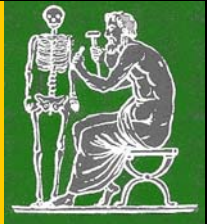
ESPERIENZE CLINICHE NEL SETTORE MAXILLOFACCIALE E DELLA CRANIOPLASTICA

MODERATORE: A. Nataloni (I)

16.30 -	Clinical experience on custom-made porous hydroxyapatite reconstruction of the skull: seven years multicentric study G. Staffa ¹ , A. Barbanera ² , P. Limoni ³ , R. Stefini ⁴ , M. Frigia ⁵ , V. Dallolio ⁶ , R. Mottaran ⁷ , A. Nataloni ⁸ ¹ Public Hospital Enterprise “ <i>Bufalini</i> ”, Division of Neurotraumatology – Cesena (Italy); ² Public Hospital Enterprise “ <i>Bellaria</i> ”, Division of Neurosurgery – Bologna (Italy); ³ Public Hospital Enterprise “ <i>Maggiore</i> ”, Division of Neurosurgery – Bologna (Italy); ⁴ Public Hospital Enterprise “ <i>Spedali Riuniti</i> ”, Division of Neurosurgery – Brescia (Italy); ⁵ Public Hospital Enterprise “ <i>S. Elia</i> ”, Division of Neurosurgery – Caltanissetta (Italy); ⁶ Public Hospital Enterprise “ <i>A. Manzoni</i> ”, Division of Neurosurgery – Lecco (Italy); ⁷ Public Hospital Enterprise “ <i>Civile</i> ”, Division of Neurotraumatology – Padova (Italy); ⁸ FinCeramica Faenza, Biomedical Division – Faenza (Italy)
17.00 -	Recovery of a skull bone lacuna through assisted and immediate engineered device with porous hydroxyapatite B. Brevi ¹ , F. Laganà ¹ , E. Sesenna ¹ , E. Giombelli ² , A. Saccani ³ , A. Nataloni ⁴ ¹ Public Hospital Enterprise “ <i>Maggiore</i> ”, Maxillo-facial Division– Parma (Italy); ² Public Hospital Enterprise “ <i>Maggiore</i> ”, Division of Neurosurgery – Parma (Italy); ³ Public Hospital Enterprise “ <i>Maggiore</i> ”, Division of Anaesthesia and Intensive Care Unit – Parma (Italy); ⁴ FinCeramica Faenza, Biomedical Division – Faenza (Italy)
17.30 -	Use of porous ceramic for reconstruction of atrophic alveolar crests S. Petti ¹ , C.A. Nunziata ² ¹ Private Professional Practice – Napoli (Italy); ² University of Strasbourg (France)
18.00 -	Discussion

SATURDAY OCTOBER 2, 2004
SABATO 2 OTTOBRE 2004

Scientific Workshop
POSTURE AND
“GIACOBBE” PROJECT



Congress Hall of Banca di Romagna
Via P. Costa, 3 – 48018 Faenza (RA)

CHAIRMEN

Antonio Ravaglioli, Adriano Krajewski

PERMANENT SCIENTIFIC COMMITTEE

K. Nishihara, M. Brunelli, L. Fonzi, M. Bosco

(Italian language)

FUNCTIONAL ANATOMY AND NEUROPHYSIOLOGY OF THE POSTURE
ANATOMIA FUNZIONALE E NEUROFISIOLOGIA DELLA POSTURA

PRESIDENTS

F. Zarotti, M. Brunelli

9.00 - M. Bosco	<i>“Posture: an up-to-date review”.</i>
9.20 - K. Nishihara	<i>“Physiological deformity and biomechanics”.</i>
9.40 - D. Zaffe	<i>“Adaptation of bone to mechanical charge”.</i>
10.10 - G. Rocchi, L. Fonzi	<i>“Anatomy of posture”.</i>
10.30 - M. Brunelli	<i>“Trigeminal gate theory and cranio-mandibular relationship: generality and rational bases”.</i>
10.50 - COFFEE BREAK	
11.10 - D. Tonlorenzi	<i>“Trigeminal gate theory and cranio-mandibular relationship: clinical cases”</i>
11.30 - A. Ravaglioli, A. Krajewski	<i>“Importance about the relationship between bio-mechanic and bone integration with biomedical devices”.</i>
11.50 - A. Natali	<i>“Biodynamic and posture”.</i>
12.10 - S. Zanfrini	<i>“Postural bio-mechanic tests”.</i>
12.30 - A. Modugno	<i>“Posture and prostheses: what could be patentable?”.</i>
12.50 - DISCUSSION	
- LUNCH	
14.30 - D. Chiesa	<i>“Connection between stomatognathic and locomotor systems”.</i>
14.50 - E. Bartolucci	<i>“Role of the posturometric technicians”.</i>
15.20 - A. Gil	<i>“Chiropractic: the American experience”.</i>
15.40 - F. Zarotti	<i>“Posture and prosthetic devices: clinical experiences”.</i>
16.00 - A. Veronica	<i>“Posture global multi systemic equilibrium of poly-specialistic competence”</i>
16.20 - COFFEE BREAK	
16.30 - A. Moschini	<i>“Weight and posture – tests of learning by quiz: practical tests on platform”.</i>
17.00 -	DISCUSSION AND PERSONAL TRAINING.

DEADLINE WORKSHOP REGISTRATION: SEPTEMBER 25, 2004

Il pagamento della quota di registrazione comprende (per ogni partecipante): partecipazione al workshop; documentazione; coffee breaks:

€ 100,00 a: “BANCA DI ROMAGNA” Ag. n. 1, Corso Garbali, 1, 48018 Faenza (RA);

c/c n. 000000008005; ABI: 06205, CAB: 23704; SWIFT: BARM IT 2F; IBAN: IT30X0620523704000000008005,

indicando chiaramente la causale: “PARTECIPAZIONE WORKSHOP: POSTURE AND GIACOBBE PROJECT – 2 OTTOBRE 2004” e il nome del partecipante.

Il pagamento deve essere al netto del beneficiario.

List of the books collection of the proceedings of all CCT Meeting-Seminars

- 1st meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Bioceramics, Cells and Tissues*”** (Faenza, April 15-17, 1993), Edited by: A. Ravaglioli and A. Krajewski, 224 pages, Faenza Editrice SpA (1994), €24,00 [out-of-print].
- 2nd meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Ceramic in Oral Surgery*”** (Faenza, May 5-6, 1995), Edited by: A. Ravaglioli and A. Krajewski, 240 pages, Faenza Editrice SpA (1996), €27,00 [out-of-print].
- 3rd meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Bioceramic Coating for Guided Bone Growth*”** (Faenza, May 2-4, 1996), Edited by: A. Ravaglioli and A. Krajewski, 236 pages, Faenza Editrice SpA (1997), €28,00 [out-of-print].
- 4th meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Ceramic-Polymer Composites*”** (Faenza, May 22-24, 1997), Edited by: A. Ravaglioli and A. Krajewski, 291 pages, Editions of IRTEC-CNR (Italian National Research Council) (Faenza, 1998), €34,00.
- 5th meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Implants for Spine*”** (Faenza, October 1-3, 1998), Edited by: A. Ravaglioli and A. Krajewski, 291 pages, Editions of IRTEC-CNR (Italian National Research Council) (Faenza, 1999), €39,00.
- 6th meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Drugs delivery Systems*”** (Faenza, March 9-11, 2000), Edited by: A. Ravaglioli and A. Krajewski, 223 pages, Editions of IRTEC-CNR (Italian National Research Council) (Faenza, 2000), €39,00.
- 7th meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Biomimetic engineering: a new role for ceramics*”** (Faenza, June 13-15, 2001), Edited by: A. Ravaglioli and A. Krajewski, 305 pages, Editions of IRTEC-CNR (Italian National Research Council) (Faenza, 2002), €50,00.
- 8th meeting and seminar on: **CERAMICS, CELLS AND TISSUES, “*Bioceramic surfaces behaviour in vitro and in vivo*”** (Faenza, March 18-21, 2003), Edited by: A. Ravaglioli and A. Krajewski, 453 pages, Editions of ISTEC-CNR (Italian National Research Council) (Faenza, 2003), €70,00.

It is planned to publish the proceedings of the 9th CCT on “Materials for Tissue Engineering. Chemistry and Microstructure: The role for ceramics.” within the year 2004.

REGISTRATION FORM

APPLICATION FORM TO BE RETURNED TO:

☺ **Organising Secretariat: Dr. Mauro Mazzochi - 9th Ceramics, Cells and Tissues Secretary Conference**

✉ ISTEC-CNR, Via Granarolo n. 64 - 48018 Faenza (RA) - Italy;

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By cash or cheque directly to the secretariat at the meeting desk in EUROS (€400,00).

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Registration desk of the participants opens on Tuesday 28 september 2004 at 15.00 in the reception hall of Banca di Romagna, Via P. Costa 3 – 48018 Faenza – Italy (the same place of the Conference).

Please complete the registration form and return it to the Organising Secretary of the Meeting.