



**13<sup>th</sup> seminar & meeting on:  
REGENERATIVE NANO MEDICINE, TISSUE  
AND GENETIC ENGINEERING: THE ROLE OF  
CERAMICS**

**May 17-20, 2011**

<http://www.istec.cnr.it/eventi.htm>

● **Presidents:**

*Feng Huei Lin* (Taiwan)  
*Richard W. Siegel* (USA)  
*Arturo Natali* (Italy)

● **Chairmen:**

*A. Ravaglioli* (Italy)

● **International Scientific Committee:**

*N. Akkas* (Turkey)  
*A. Bellosi* (Italy)  
*S. Barinov* (Russia)  
*A. Boccacini* (U.K.)  
*F. Branda* (Italy)  
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*R. LeGeros* (U.S.A.)  
*F.-H. Lin* (Taiwan)  
*C. Mangano* (Italy)  
*A. Maresta* (Italy)  
*F. Namavar* (U.S.A.)  
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*K. Nishihara* (Japan)  
*S. Niwa* (Japan)  
*H. Oguchi* (Japan)  
*S. Oscarsson* (Sweden)  
*C. Piconi* (Italy)  
*J.A. Planell* (Spain)  
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*A. Ravaglioli* (Italy)  
*C. Rey* (France)  
*W. Rieger* (Switzerland)  
*P.G. Rouxhet* (Belgium)  
*C.P. Sharma* (India)  
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*E. Verné* (Italy)  
*M. Wang* (Hong Kong)  
*A. Wilke* (Germany)  
*D. Zaffe* (Italy)  
*X.D. Zhang* (China)

Organized by



AGENZIA POLO CERAMICO

Endorsed by



ISTEC Italian National Research Council  
Faenza

Faenza, December, 2010.

Dear President,

we are organising the 13<sup>th</sup> edition of the periodical series of International Congresses "Ceramics, Cells and Tissues" (CCT) to be held in Faenza (Italy) on May 17—20, 2011. You can see the Preliminary Announcement and call for papers at the web site:

<http://cct.agenziapoloceramico.it>

It is already tradition for this series of international congresses to promote a special event like that of the "CCT prize award" given to a young researcher for the best oral paper presented, according to scientific content and quality of presentation, as well as for the originality, the logical pathway and technological impact potentiality. Pleasant social events are also promoted for the participants and the accompanying people.

This series of congresses has always produced the Book of the Proceedings, printed in English, available on request.

**We will appreciate very much if you inform your members about this event, giving your endorsement too, sending possibly your logos as electronic image.**

During 13<sup>th</sup> CCT, we would like to promote a "BIOMATERIALS SOCIETIES FORUM" devoted to all those Biomaterials Societies (the worldwide most representative) that have endorsed our congress. We would like to know your interest about this initiative and if a staff member (possibly the President) can participate, considering a lot of facilitations forecasted by the congress (ATTACHMENT A).

It is intended that you will promote our meeting towards the country of your Society and will be at disposal to referee or to make refereed abstracts proposed for this meeting.


We consider that your prestigious Society will endorse our manifestation, already at its 13<sup>th</sup> edition. It is also requested some information relative to your society (ATTACHMENT B).

Please send me as soon as possible your reply so that I could insert your logos in the final program available for next April 2011.

Sincerely Yours.

Antonio Ravaglioli----The Chairman of 13<sup>th</sup> CCT  
Giulietta Rau – Forum Biomaterials Societies Promoter

P. S. Attached : ( a ) the request of endorsement with indications and benefits for your Society. ( b ) Biomaterials Societies presentation (possible subjects to be treated during the " Round Table").

13<sup>th</sup> Social event  International Artistic Competition "Generation and Regeneration: between in Science and Faith"

# SOCIETY FOR BIOMATERIALS

## Request for Endorsement or Sponsorship

### E&PD Committee Form

This request is for (name of society):	Agenzia Polo Ceramico--Faenza
Date of Request:	04 – 12 - 2010
<i>Name of meeting:</i>	CERAMICS CELLS AND TISSUES
Date(s) of Meeting:	May 17—20, 2011
Location of Meeting:	Faenza (RA)-ITALY

Contact Person:	Antonio Ravaglioli
Affiliation:	Ceramic, Science and Technology
Address:	V. Granarolo, 64
City/State/Zip:	48018 Faenza - Italy
Telephone	+39-347-0766986
Facsimile:	+39-0546-670399
e-mail:	<a href="mailto:cctfaenza@alice.it">cctfaenza@alice.it</a>
Web page for meeting review:	<a href="http://cct.agenziapoloceramico.it">cct.agenziapoloceramico.it</a>

Summary:

*Purpose of meeting, potential number of attendees, number of sessions, abstracts, etc.*

Regenerative nanomedicine, tissue and genetic engineering and the role of ceramics, 200 people, 15 sessions, 130 abstracts.

*Any type of preliminary program or other information from past meetings.*

See the web. For the previous twelve meetings all the proceedings are at disposal, on request

*How will this be of interest and benefit SFB members – special member rates, etc. ?*

The benefits for the endorsement societies members, if they are speakers, are relative to a reduction of the registration fee. Furthermore a symposium is forecasted among the endorsement societies reporting their aims, collaborations and activity. The President and/or the representative speaker will be informed about the details of the symposium. A summary of possible subjects to be treated , could be the one reported in the attached sheet” Biomaterials Societies Presentation”.

*How will SFB be acknowledged for their endorsement?*

All the endorsement societies were reported in the preliminary program with logos. The SFB society with its logos will be reported in the final program.

Spaces will be devoted to the endorsement societies during the manifestation, with their documentations free of charge, involving the media.

Thanking in advance for your attention, we hope to obtain the SFB endorsement and your logos

Antonio Ravaglioli  
**13<sup>th</sup> Ceramics, Cells and  
Tissues**

**Chairman**



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Faenza

## BIOMATERIALS SOCIETIES PRESENTATION at 13 Ceramics, Cells and Tissues ( 13 CCT )


The principal aim of the session is to promote new interests in the field of Biomaterials involving the CCT endorsement Societies.

It is very interesting to know about " their life in our evolving society"; the president of the different societies ( eight were involved in the previous editions) or a representative member, could report about:

- Society ( foundation, the fundamental objectives, etc.)
- Research and teaching programs
- The "scientific culture" of the members
- Activities and publications of the Society
- Communication with the world Community
- Awards and other

In particular putting in evidence:

- how operate the Society in its country and with the other countries;
- how many members work for the single professional disciplines in Biomaterials (inert bioceramics, bioactive ceramics, bioactive glass-ceramics, biometal, biopolymers, composites, etc.);
- how the Society interacts with the highest schools and with the Universities;
- which kind of relationships between the Society and the public and private research Institutions;
- how many (indicatively) public and private funds ( financings)?
- The government understands the indications that the Society gives for the development of the fundamental research matters, or all is based on research of private industry?
- what about initiatives, congresses, meetings, grants, etc.?:
- how much is important the Society in the decision about the programmatic choices of the young researchers and....
- how much is important your Society to evaluate the activity of the different members and of the proposed works and/or contributions?

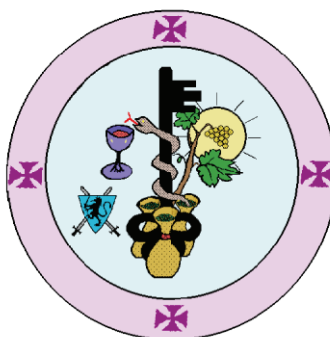
13<sup>th</sup> Social event  International Artistic Competition "Generation and Regeneration: between in Science and Faith"

# 13 CCT PRELIMINARY PROGRAM

<http://cct.agenziapoloceramico.it>



Ceramics, Cells and Tissues



13th seminar and meeting on:

## **REGENERATIVE NANOMEDICINE, TISSUE AND GENETIC ENGINEERING, AND THE ROLE OF CERAMICS**

Congress Hall of Banca di Romagna  
via P. Costa, 3 - Faenza, Italy

**May 17-20, 2011**

**ABSTRACTS DEADLINE: MARCH 31, 2011**



## CO-PRESIDENTS OF THE 13TH MEETING-SEMINAR



**Feng - Huei Lin**  
Professor, Inst. of Bio-  
med. Eng., National  
Taiwan Univ. Taipei,  
Taiwan



**Richard W. Siegel**  
Professor, Materials  
Science and Engineering  
Director, Rensselaer  
Nanotechnology Center,  
Rensselaer Polytechnic  
Inst. (Troy, NY, USA)



**Arturo Natali**  
Professor, Center of  
Mechanics of Biological  
Materials, University of  
Padova, Italy

### CHAIRMAN



**Antonio Ravaglioli**  
Ceramics, Science and Technology  
Faenza, Italy  
ravaglioli.antonio@alice.it

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A. Bellosi, A. Billi, G. de Portu, S. Di Fede, M. Isola, R. Giovannini, A. Krajewski, G. Malpezzi,  
C. Mangano, G. Medri, G. Mingazzini, A. Morini, A. Ravaglioli, A. Tampieri,  
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### ORGANIZED BY

AGENZIA POLO CERAMICO

<http://cct.agenziapoloceramico.it> - via Granarolo 62, Faenza (RA), 48018 - Italy

### SECRETARIAT

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**SCIENTIFIC SECRETARIAT:** Rossella Ravaglioli. +39-347-0766986; e-mail: [cctfaenza@alice.it](mailto:cctfaenza@alice.it)

## MAIN TOPICS, ROUND TABLES, SYMPOSIA AND SOCIAL EVENTS

The 13th Ceramics, Cells and Tissues (13th CCT) will discuss about Science and Technology of Biomaterials, with particular reference to Bioceramics for implants as inert, bioactive, in bulk, as coatings and as injectable cements. Through multidisciplinary disciplines, involving materials and medical science, a particular attention will be devoted to surface engineering, nanotechnology and biomolecular tools. The aim is to treat about the innovative solutions for the health medicines, making reference to science from the evolutionary anthropologists, evolutionary geneticists point of view. A particular attention will be devoted to nanotechnology able to support a new generation of “smart materials” to solve many biomedical problems.

### WHO SHOULD ATTEND

Research bioengineers, scientists and students that have a special interest in surface engineering that concerns all that can affect the surfaces and linked to the actions on cells, physiological liquids, severe environments, leachability (corrosion, ionic exchange, etc.), tribology (wear formation), mechanical and electrical interactions. All technologists who are facing challenges in the area of materials selection, standardisation and specification or plant design for application in medicine; managers who have responsibility for plant and design, maintenance or replacement and manufacturing activities in the field of biomaterials, guaranteeing biotolerability, bioadaptability, biofunctionality.

The involved disciplines will be: physical sciences (materials science, physics, chemistry); biological sciences (biologists, bioengineers, biochemists); utilisers-surgeons (dentistry, internal medicine, orthopaedic, maxillofacial surgery, cranioplasty, spine surgery, ENT, neurophysiology); medical field cooperators (veterinary, pathology, microbiology, cytology); producers (projection, design, production line technology).

### MAIN TOPICS

- Recent development in tissue engineering
- Recent development in dental and orthopedic applications of ceramic-based materials
- Biomimetic materials and bio-hybrid composites
- Stem cells for bone regeneration
- The role of electromagnetic field in the biological processes.
- Biochemical signalling in the regenerative processes
- Recent development in the field of bone cements
- The role of surface in cell-biomaterial interface
- Scaffold functionalization with biologically active molecules
- Relationship between cell phenotype and scaffold features
- Dynamic and static scaffold activation
- Nanodevices and nano-delivery systems for the regenerative medicine
- Postural problems in relationship with aging
- Ethical issues in animal testing
- Microrobot for the regenerative medicine
- Nanoscience and Nanotechnology for biomedical field
- How cells communicate each other to evaluate biomateriale
- Towards new glass-ceramics coatings
- From bionic man... to tissue and genetic engineering

**ROUND TABLES** are forecasted about the upper reported topics

- The innovative coronary stents and ceramics coatings (A. Maresta, L. Marras)
- New frontiers of longevity (to be promoted). *Creating an universal biomaterial: reality (state of the art technology) or search for the phylosopher's stone of alchemists?* (A. Karlov, Tomsk - Russia)
- Injectable cements: recent development in biocement (P. Rabischong, G. Rau)

### SYMPOSIA

- Geology and thermalism for health: Thermal therapy and functional benefits (F. Tateo, A. Menconi Orsini, M. Conti, F. Russo, E. Gallori)
- Biomaterials for healthcare (Progetto Giacobbe: S. Zanfrini; D. Tonlorenzi; M. Brunelli; A. Nataloni)
- Towards genetic therapy: synthetic nanosphere as gene and drug delivery vehicles (Shu Chin Ma, L. Giacomelli)

**FORUM OF BIOMATERIALS SOCIETIES** (to be promoted: J. V. Rau, R. Ravaglioli)

**SOCIAL EVENTS**

It is a tradition of the International Congress “Ceramics, Cells and Tissues”, to promote some social events. Thanks to the financial support of “Banca di Romagna”, in this 13th CCT edition, it will be offered:

(a)

- The 8th CCT prize award for a young researcher for the best oral paper presented according to the scientific content and the quality of presentation, as well as for the originality, the logical pathway and the technological relevance for the impact potentiality of what studied.

- Three excellent research awards with certificate without prize will be available.

*Details: 13th Scientific Secretariat, cctfaenza@alice.it*

(b)

- A special prize for a peculiar international artistic competition that has to be assigned to ceramic artisans, artists, sculptors, throwers coming from all parts of the world, that will have been able to succeed in interpreting, as best as possible, the spirit of the subject treated in this 13th CCT Congress edition.

The title is **Generation and regeneration – Conscience and knowledge**.

(c)

- Congress Trip and Official Dinner

International Artistic Competition

**Generation and Regeneration:  
between Conscience, Knowledge, Rationality and Faith**

details: [info@agenziapoloceramico.it](mailto:info@agenziapoloceramico.it)  
<http://cct.agenziapoloceramico.it/>



Thursday 19, May 2011

**Congress Trip and Official Dinner**

A traditional CCT afternoon of relax to appreciate fascinating and historical places with the best food, wine and music

**Beauty is truth, truth is beauty - that is all  
Ye know on earth, and all ye need to know**

**John Keats**

## 13th CERAMICS, CELLS AND TISSUES: TITLES ALREADY PROPOSED

**A. Ravaglioli, A. Bianco, I. Cacciotti, J. V. Rau, F. Tateo, A. Giarretta, L. Peruzzo, E. Vernè, F. Branda, M. Dettin, A. Menconi Orsini, A. Krajewski, L. Giacomelli, L. Marras, A. Maresta, A. Camaioni, C. Mangano.**

*Biomaterials for healthcare as in bulk, as coating and as injectable cements*

**R. W. Siegel,** Rensselaer Polytechnic Institute Troy - New York, USA

*Generation of nanobiomaterials for regeneration*

**Feng - Huei Lin,** National Taiwan University, Taipei - TAIWAN

*Study of Diamine-functionalized SWCNTs as Vector for Gene Delivery*

**A. N. Natali,** Centre of Mechanics of Biological Materials, Università di Padova, ITALY

*Foot biomechanics: a numerical approach*

**A. V. Karlov et alii,** Biotechnika Group - Tomsk, RUSSIA

*Opportunities of multilevel bioengineering of bone tissue (nano, micro, mesolevel) depending on chemical composition of composite materials in experiment and clinical practice*

**P. V. Hatton et alii,** University of Sheffield, UK

*Porous ceramic & composite scaffolds for skeletal tissue engineering*

**I. Mert, S. Mandel and A. Cuneyt Tas,** Yeditepe University, Istanbul - TURKEY

*Do cell culture solutions transform brushite into octacalcium phosphate?*

**A. George,** University of Illinois, Chicago - USA

*Development of a collagen-chitosan scaffold for hydroxyapatite nucleation*

**J. V. Rau, et alii,** Institute of Structure of Matter of CNR, Rome - ITALY

*Bioactive glass - ceramic coatings deposited by pulsed laser deposition from sol-gel targets*

**Shu Chin Ma,** University of Auckland, Auckland - NEW ZEALAND

*The role of pharmacometrics and clinical trial simulation in drug research and development*

**Min Wang,** University of Hong Kong - HONG KONG

*Developing high-performance coatings for NiTi Shape memory alloy using the PIIID Technique*

**O. Kamynina,** Institute of Structural Macrokinetics, Chernogolovka - RUSSIA

*Porous composite materials based on Ti for osteointegration*

**V. Cannillo, et alii,** University of Modena and Reggio Emilia - ITALY

*Innovative bioactive glass coatings by High-velocity suspension flame spraying (HVSFS)*

**D. Bellucci, et alii,** University of Modena and Reggio Emilia - ITALY

*Innovative bioactive glass shell scaffolds for bone tissue engineering*

**D. Bellucci, V. Cannillo, A. Sola,** University of Modena and Reggio Emilia - ITALY

*A new bioactive glass formulation to deposit coatings by enamelling and plasma spraying*

**R. Gadow, et alii,** Inst. for Man. Tech. of Ceramic Components and Composites, Stuttgart - DE

*High velocity suspensions flame spraying (HVSFS) of nanosized hydroxyapatite for biomedical coatings*

**C. Rey,** CIRIMAT ENSIACET, Toulouse - FRANCE

*a. Accurate characterization methods for nanocrystalline apatite*

*b. Osteoinduction determined by apatite nanocrystals*

**E. Vernè,** Polytechnique Torino - ITALY

*Surface functionalization of bioactive glasses with active ions and biomolecules*

**C. Vitale Brovarone,** Polytechnique Torino - ITALY

*Vitroceramics scaffolds for bone tissue engineering and drug delivery*

**M. Fiorini et alii,** Fin-Ceramica Faenza SPA, Faenza - ITALY

*a. DBSINT® a novel bio-mimetic and osteopromotional allo-synthetic bone substitute: 12 months clinical follow-up*

*b. Chemical-physical and pre-clinical investigation of a novel collagen/chitosan/MgHA-based bi-layered osteochondral scaffold cross-linked with 1,4-butanediol diglycidyl ether (BDDGE)*

- c. *Technological development and manufacturing process optimization of a novel chemically crosslinked collagen/chitosan/MgHA-based bi-layered osteochondral scaffold*
- d. *Chemical-physical characterization of a novel polymer-based injectable calcium phosphates bone cement for orthopedic surgeries*
- e. *Novel nano-composite biomaterial for osteochondral regeneration: clinical study results*

**D. Uskokovic**, Institute of Tech. Sciences of SASA, Belgrade - SERBIA

Molecular designing of functional nanoparticles for biomedical applications

**S. M. Barinov, et alii**, Institute for Metallurgy and Materials Science RAS, Moscow - RUSSIA

*Advanced biomaterials for bone tissue engineering: octacalcium phosphate*

**N. Sergeeva**, RAS, Moscow - RUSSIA

*A role of multipotential mesenchymal stromal cells in tissue-engineering constructions based on synthetic (Ca-P bioceramics) and natural (skeleton of corals) biomaterials*

**M. Conti, F. Russo**, Terme di Castrocaro, Faculty of Medicine, Univ. of Pisa - ITALY

*Therapeutic muds for the protection of enzymatic proteins due to the degradation*

**V. Medri, M. Mazzocchi**, ISTECCNR Faenza - ITALY

*Cements for non-resorbable fillings composed by radioopaque reactive Ca-aluminate phases*

**S. Oscarsson**, Uppsala Univ. - SWEDEN

*Neuroprobes for brain implants in rats, rabbits and monkeys*

**R. Martinetti**, Finceramica - ITALY

*Regulatory guideline for border line products*

**A. Karlov**, Tomsk - RUSSIA

*Tissue engineering (regenerative medicine): strengths and weaknesses*

**F. Branda**, Univ. of Naples Federico II - ITALY

*Functionalized silica nanoparticles for biomedical applications*

**E. Gallori**, Univ. of Florence - ITALY

*Clays and the origin of life on earth*

## **CALL FOR PAPERS**

submission deadline: March, 31 2011

### **MODALITY OF ABSTRACT(S) PRESENTATION:**

Abstract(s) must be typed in English language. Every abstract must include: title of the presentation (oral or poster, with character set: Times New Roman Bold 16 pt, centred), authors' names (character set: Times New Roman Bold 12 pt, centred), institutions with address, state, phone, fax and/or e-mail address (character set: Times. New Roman Bold 12 pt, left justified), quoted with proper increasing numerical symbol from the author's names list. The content of the text must produce sufficient information about the target of the study, methods utilised, results obtained and conclusions. Preference for either oral or poster presentation should be indicated. The authors whose abstract will be accepted will receive informative instructions for publication in the book of the proceedings after the presentation at the Congress.

### **ABSTRACTS MUST BE SENT IN THE FOLLOWING WAYS:**

- (1) to the organizing secretariat by electronic delivery by e-mail to the address [cctfaenza@alice.it](mailto:cctfaenza@alice.it)
- (2) forwarding by mail or courier services a floppy disk or a CD-ROM, with the text recorded on, contained in a proper parcel (together with a copy print on A4 paper) to the following address:

**Dr. Antonio Ravaglioli – Via Granarolo 62, 48018 Faenza (Ravenna) - Italy**

The abstracts will be examined by a board of referees. The authors, whose abstract(s) will have been accepted, will receive informative instructions on time and modality of presentation.

## REGISTRATION

### REGISTRATION FORM

Please fill in the the registration form available on <http://cct.agenziapoloceramico.it>

### REGISTRATION FEE

The registration fee for each participant includes: Participation to the meeting-seminar; Welcome Party; Coffee breaks; Meeting trip, Official dinner, Documentation of the meeting, 13th CCT book of the proceedings when available.

- Registration fee before March 15, 2011 - € 480
- Registration fee after March 15, 2011\* - € 550
- Students\*\* registration fee before March 15, 2011 - € 240,
- Students\*\* registration fee after March 15, 2011\* - € 280
- Registration for 1 day - € 140
- Accompanying person\*\*\* registration fee- €100

\* *on site, too.*

\*\* *for undergraduate students and PhD students. Please, present a letter by own tutor. There are some grants available for students willing to join the 13CCT free of charge. Please, contact the 13CCT Secretariat for further information.*

\*\*\* *the accompanying person fee includes: welcome party, meeting trip and official dinner*

### KINDS OF PAYMENT

- by Bank Transfer to Agenzia Polo Ceramico. *See details on <http://cct.agenziapoloceramico.it>*
- by credit card. *See details on <http://cct.agenziapoloceramico.it>*
- on site by cash, by credit card or by cheque

## GENERAL INFORMATION

### ACCOMODATION

Please reserve your accommodation in Faenza consulting [www.prolocofaenza.it](http://www.prolocofaenza.it) (*ospitalità*) as soon as possible, as during the Congress period there are many events in Faenza and in the nearest towns, too.

### ENQUIRES

For further information regarding: attendance at the conference, delivery of a paper, participation to the eight CCT prize (for young researcher presentation), to social international events or purchasing a copy of the book of proceedings of the previous CCT International Congresses, etc., by taking contact with:

Mrs. Rossella Ravaglioli, Tel: +39-347 0766 986; E-Mail: [cctfaenza@alice.it](mailto:cctfaenza@alice.it)

### VENUE

Faenza is placed in the southern part of the Emilia-Romagna region. It is 30 km far from Adriatic sea, 50 Km S-E from Bologna, 100 Km N-E from Florence, 200 Km S from Venice. Reaching Faenza is easy: if you use aircraft flight, you can arrive to the Airports of Bologna, Forlì or Rimini. From Bologna Airport you have a direct connection with railways station with a public bus.. Faenza has an interesting Internatioinal Museum of Ceramics and other artistic architectures and manufactures. You can visit other famous tourist towns (Ravenna, Florence, Bologna, Venice) not far from Faenza.

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