

CIEC 15 Program

MONDAY 5 TH Sept.	
08h00	Participants Welcome
08h30	Conf Opening
09h00	Invited Fabrice ROSSIGNOL
09h30	M. SCHMIDT
09h45	J. SARTHOU
10h00	J.J. ROA
10h15	J.M. TULLIANI
10h30	Posters Coffee break
11h00	C. GAJDOWSKI
11h15	J. CROQUESEL
11h30	J.M. CHAIX
11h45	M. MARCINKOWSKA
12h00	R. MACAIGNE
12h15	G. KALFAYAN
12h30	P. NINZ
12h45	Lunch

MONDAY 5 TH Sept.	
14h00	Invited Robert DANZER
14h30	I. TOUAIHER
14h45	R. BERMEJO
15h00	G. BEN GHORBAL
15h15	U. SCHMITT-RADLOFF
15h30	Marc ANGLADA
16h00	Posters Coffee break
16h30	Highlight Martin BACHE
17h00	J.P. JONES
17h15	Z. QUINEY
17h30	C. MINGAZZINI
17h45	M. JIMENEZ
18h00	Posters session
19h00	Posters Get together (buffet dinner)
20h00	

TUESDAY 6 TH Sept.	
08h30	Highlight Maurice GONON
09h00	D. BOUVARD
09h15	T.P. VU
09h30	M. DUITTO
09h45	M. LASGORCEIX
10h00	E. JIMENEZ-PIQUE
10h15	E. ROITERO
10h30	Posters Coffee break
11h00	Invited Corrado PICONI
11h30	M. BOHNER
11h45	P. KRIEG
12h00	H. ELSAYED
12h15	S. RAMIREZ
12h30	R. GADOW
12h45	Lunch

TUESDAY 6 TH Sept.	
14h00	Highlight Frank KERN
14h30	G. DE PORTU
14h45	D. MARCHAT
15h00	Highlight Paola PALMERO
15h30	A. PINEL
15h45	D. ZIEGLER
16h00	Confluences Museum visit
17h00	Confluences Museum visit
19h45	Confluences Museum visit
20h00	Conference Dinner
23h00	Conference Dinner

WEDNESDAY 7 TH Sept.	
09h00	Invited Arturo DOMINGUEZ
09h30	M.S. RENOIRT
09h45	S. SEN
10h00	J. SEUBA
10h15	V. GUERINEAU
10h30	Posters Coffee break
11h00	Highlight Daniele MARI
11h30	V. GAUTHIER-BRUNET
11h45	M. TURON-VINAS
12h00	G. BAYRAK
12h15	N. PREUX
12h30	A. CELLARD
12h45	Lunch
14h00	Optional: visit of SETARAM

CIEC 15 PROGRAM

Monday 05/09/2016 morning

08h00 Participants Welcome

08h30 Conference Opening

09h **Keynote lecture: Combining top-down and bottom-up approaches through additive manufacturing for biosensors fabrication, by Fabrice Rossignol**

F. Rossignol¹, R. Trihan¹, C. Lefort², M. Lejeune²

¹SPCTS, UMR CNRS 7315, 12 rue Atlantis, 87068 Limoges, France

²XLIM, UMR CNRS 7252, 123 avenue Albert Thomas, 87060 Limoges, France

09h30 **Addition of boron at molecular scale in Silicon Carbide Precursors : Effect on the pyrolysis behavior of precursors and on the final properties of silicon carbide**

M. Schmidt¹, G. Chollon², and S. Bernard¹

¹Institut Européen des Membranes, UMR 5635-CNRS-ENSCM-UM, Université de Montpellier, Place E. Bataillon, F-34095, Montpellier, France - ²Laboratoire des Composites Thermostructuraux, CNRS-Herakles-CEA-Université de Bordeaux, 3 allée de La Boétie, F-33600, Pessac, France

09h45 **Synthesis and characterization of Yb:CaF₂ transparent ceramics using an innovative energy-saving wet-route fabrication process**

J. Sarthou¹, P. Aballéa¹, G. Patriarche², H. Serier-Brault³, A. Suganuma¹, P. Gredin^{1,4}, M. Mortier¹

¹PSL Research University, Chimie ParisTech, CNRS, Institut de Recherche de Chimie Paris, 75005 Paris, France - ²Laboratoire de Photonique et de Nanostructure (LPN), CNRS, Université Paris-Saclay, Route de Nozay, F-91460 Marcoussis, France - ³Institut des Matériaux Jean Rouxel, Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322 Nantes cedex, France - ⁴Université Pierre et Marie Curie, 4 Place Jussieu, 75005 Paris, France

10h00 **Structural and Mechanical Characterization of 3Y-ZrO₂ produced by Rapid Prototyping**

J.J. Roa^{1,2}, G. Fargas^{1,2} and M. Anglada^{1,2}

¹CIEFMA, Department of Materials Science and Metallurgical Engineering, ETSEIB, Universitat Politècnica de Catalunya-Barcelona Tech, Avda. Diagonal 647, 08028, Barcelona, Spain - ²CRnE, Campus Diagonal Sud, Edificio C', Universitat Politècnica de Catalunya-Barcelona Tech, C/ Pascual i Vila 15, 08028, Barcelona, Spain

10h15 **Elaboration and characterization of humidity sensors based on micro-carbonized bamboo particles**

A.S. Afify¹, S. Ahmad², R.A. Khushnood³, P. Jagdale¹ and J.-M. Tulliani¹

¹Department of Applied Science and Technology, Politecnico di Torino, INSTM Research Unit Polito, LINCE Laboratory, Corso Duca degli Abruzzi 24, 10129 Torino, Italy - ²Mirpur University of Science and Technology (MUST), 10250 Mirpur, Azad Kashmir, Pakistan - ³Institute of Civil Engineering (NICE), National University of Sciences and Technology (NUST), 44000 Islamabad, Pakistan

10h30 Coffee break

11h00 Transparent polycrystalline ceramics for ballistic application

C. Gajdowski^{1,2}, J. Böhmler¹, E. Barraud¹, S. Lemonnier¹, Y. Lorgouilloux², S. d'Astorg², A. Leriche²

¹Institut franco-allemand de recherches de Saint-Louis, 5 rue du Général Cassagnou, 68301 Saint-Louis, France - ²Laboratoire des Matériaux Céramiques et des Procédés Associés, Boulevard du Général de Gaulle, 59600 Maubeuge, France

11h15 Microwave sintering of nuclear ceramics

J. Croquesel¹, S. Pillon¹, F. Valdivieso² and S. Saunier²

¹CEA Marcoule, DEN/DTEC/SECA/LFC, BP 17171, 30207 Bagnols sur Cèze cedex, France - ²Ecole des Mines de Saint-Etienne, Laboratoire Georges Friedel CNRS UMR 5307, 158 cours Fauriel, 42023 Saint Etienne, France

11h30 Flash sintering of zirconia and zirconia-alumina composites

E. Bichaud^{1,2}, M.C. Steil¹, J.-M. Chaix² and C.P. Carry²

¹LEPMI, Univ. Grenoble Alpes, CNRS, F-38000 Grenoble, France - ²SIMAP, Univ. Grenoble Alpes, CNRS, F-38000 Grenoble, France

11h45 Field assisted sintering processing of bioinspired ceramic/metal composites

M. Marcinkowska^{1,2}, E. Maire¹, S. Meille¹, J. Chevalier¹ and S. Deville²

¹Université de Lyon, INSA-Lyon, MATEIS CNRS UMR5510, Villeurbanne 84306, France - ²Laboratoire de Synthèse et Fonctionnalisation des Céramiques, UMR3080 CNRS/Saint-Gobain, Cavaillon F-69621, France

12h00 Study of the Influence of Different Dopants on the Densification of Spinel by Microwave Heating

R. Macaigne^{1,2}, S. Marinel¹, E. Savary³, G. Riquet¹, C. Meunier², S. Saunier², D. Goeuriot²

¹CRISMAT Laboratory, UMR 6508 CNRS-ENSICAEN-UCN, 6 Boulevard Maréchal Juin, 14050 Caen cedex, France - ²Ecole Nationale Supérieure des Mines de Saint-Etienne, 158 Cours Fauriel, 42023 Saint-Etienne, France - ³CNRS-Délégation Normandie, 6 Boulevard Maréchal Juin, 14050 Caen cedex, France

12h15 Microwave joining process of an alumino-silicate ceramic material for radioactive waste containers

G. Kalfayan^{1,2}, D. Goeuriot¹, S. Saunier¹, C. Meunier¹ and N. Texier-Mandoki²

¹Centre Sciences des Matériaux et des Structures, CNRS-UMR 5307, ENS des Mines de St-Etienne, 158 cours Fauriel, 42023 St-Etienne, France - ²Andra, 1-7 rue Jean Monnet, 92298 Chatenay-Malabry Cedex

12h30 Ceramic substrates for laser induced selective metallization

P. Ninz¹, F. Kern¹, E. Ermantraut², H. Müller³, W. Eberhardt³, A. Zimmermann^{2,3} and R. Gadow¹

¹Institut für Fertigungstechnologie keramischer Bauteile (IFKB), University of Stuttgart, Allmandring 7b, D-70569, Stuttgart, Germany - ²Institute for Microintegration, University of Stuttgart, Allmandring 9b, D-70569, Stuttgart, Germany - ³Hahn-Schickard-Institute for Microassembly Technology, Allmandring 9b, D-70569, Stuttgart, Germany

12h45 Lunch

Monday 05/09/2016 afternoon

14h00 Keynote lecture: Fracture toughness testing of ceramics: state of the art and new methods, by Robert Danzer

R. Danzer and T. Lube

Institut für Struktur- und Funktionskeramik, Montanuniversität Leoben, Franz Josef Strasse 18, A-8700, Leoben, Austria

14h30 Mechanical behavior of a highly transformable zirconia-based composite

I. Touaiher¹, M. Saädaoui¹, J. Chevalier², H. Reveron²

¹*Université Mohamed V, EMI, LERSIM, Avenue Ibn Sina, 10000 Rabat, Morocco* - ²*Université de Lyon, INSA de Lyon, MATEIS CNRS UMR 5510, 20 Avenue Albert Einstein, F-69621 Villeurbanne Cedex, France*

14h45 Towards mussels under stress: “novel concepts to design tough and reliable advanced ceramics”

R. Bermejo¹, Y. Chang², R. Danzer¹ and G.L. Messing²

¹*Institut für Struktur- und Funktionskeramik, Montanuniversität Leoben, Franz Josef Strasse 18, A-8700, Leoben, Austria* - ²*Department of Materials Science and Engineering, The Pennsylvania State University, 121 Steidle Bldg, University Park, PA 16802, USA*

15h00 Assessment of hardness and elasticity by micro depth sensing indentation with knoop indenter

G. Ben Ghorbal¹, A. Tricoteaux¹, A. Thuault¹, D. Chicot², G. Louis³

¹*LMCPA, Université de Valenciennes, Boulevard Général de Gaulle, 59600 Maubeuge* - ²*Univ. Lille, FRE 3723 - LML - Laboratoire de Mécanique de Lille, F-59000 Lille, France* - ³*LGCgE, Ecole des Mines de Douai, 59500 Douai, France*

15h15 ZTA-NbC Dispersion Ceramics – Influence of NbC Content on the Mechanical Properties and the ED-Machinability

U. Schmitt-Radloff, F. Kern and R. Gadow

IFKB, University of Stuttgart, Allmandring 7b, 70567, Stuttgart, Germany

15h30 Highlight lecture: Surface Processing of Zirconia, by Marc Anglada

Department of Material Science and Metallurgical Engineering. Universitat Politècnica de Catalunya. C/Sant Ramon de Penyafort (EEBE), 08019 Barcelona, Spain

16h00 Coffee break

16h30 Highlight lecture: Ceramics and CMC Research at Swansea University: The Legacy of Brian (George) Wilshire, by Martin Bache

Institute of Structural Materials, College of Engineering, Bay Campus, Swansea University, Swansea, SA1 8EN, United Kingdom

17h00 Thermo-Mechanical Fatigue Behaviour of a SiC_f/SiC Ceramic Matrix Composite

J.P. Jones¹, M.T. Whittaker¹, M.R. Bache¹, P.J. Doorbar², P. Jones¹

¹*Institute of Structural Materials, Swansea University, Fabian Way, Swansea, SA1 8EN, United Kingdom* - ²*Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, United Kingdom*

17h15 Progressive Evaluation of Damage in SiC_f/SiC Ceramic Matrix Composite Specimens via X-Ray Computed Microtomography

Z. Quiney¹, J.P. Jones¹, P. Doorbar² and M.R. Bache¹

¹*Institute of Structural Materials, Swansea University Bay Campus, Fabian Way, Swansea, SA1 8EN, United Kingdom* - ²*Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, United Kingdom*

17h30 Low-cost thermostructural fiber-reinforced composites for mass production

C. Mingazzini¹, P. Fabbri¹, M. Scafè¹, D. Caretti², D. Nanni², L. Laghi³, M. Morganti³

¹*ENEA Faenza Research Laboratories, via Ravennana 186, Faenza (Ra), Italy* - ²*Bologna University, Dep. of Industrial Chemistry, Viale Risorgimento 4, Bologna, Italy* - ³*CertiMaC, Via Granarolo 62, Faenza (Ra), Italy*

17h45 Fiber-Matrix Interface in Carbon Fiber Reinforced Ceramics and Light Metals via LPI Coatings

R. Gadow, M. Jiménez, P. Weichand

Institut for Manufacturing Technology of Ceramic Components and Composites, University of Stuttgart, Allmandring 7b, D-70569 Stuttgart Germany

18h00 Poster Session

19h00 Poster/Get together (buffet dinner)

Tuesday 06/09/2016 morning

08h30 Highlight lecture: Processing of Electroactive Components by means of Selective Laser Sintering / Melting (SLS/SLM), by Maurice Gonon

M. Gonon, N. Basile

Materials Institute, UMONS, Rue de l'Epargne 56, 7000, Mons, Belgium

09h00 Evidence of microwave effects on the sintering of alpha and gamma alumina powder

J. Croquesel¹, D. Bouvard¹, J.M. Chaix¹, C.P. Carry¹ and S. Saunier²

¹*Univ. Grenoble Alpes, CNRS, SIMAP, 38000 Grenoble, France* - ²*Ecole des Mines de Saint-Etienne, SMS team, 158 cours Fauriel, 42023 Saint Etienne, France*

09h15 Investigating influences of suspension plasma spray parameters on photocatalytic activity of TiO₂ films

T.P. Vu¹, N. Otto², A. Vogel¹, F. Kern¹, A. Killinger¹, R. Gadow¹

¹*IFKB, University of Stuttgart, Allmandring 7b, 70569, Stuttgart, Germany* - ²*ISWA, University of Stuttgart, Bandtäle 2, 70569, Stuttgart, Germany*

09h30 Reaction bonded boron carbide composite fabricated by microwave heating

M. Dutto^{1,3}, D. Goeuriot¹, S. Saunier¹, S. Marinel², N. Frage³ and S. Hayun³

¹*Département Mécanique et Procédés d'Elaboration directe, Centre des Science des Matériaux et des Structures, Laboratoire Georges Friedel UMR 5307, Mines Saint-Etienne, 42023 Saint-Etienne Cedex 2, France* - ²*CRISMAT Laboratory UMR 6508 CNRS-ENSICAen-UCBN, 6 Boulevard du Maréchal Juin, 14050 Caen Cedex, France* - ³*Department of Materials Engineering, Ben-Gurion University of Negev, P.O. Box 653, Beer-Sheva 84105, Israel*

09h45 Micropatterning of calcium phosphate bioceramics by femtosecond laser

M. Lasgorceix¹, C. Ott¹, L. Boilet¹, S. Hocquet¹, S. Chamary², A. Leriche², V. Lardot¹, F. Cambier¹

¹*CRIBC, 4 Avenue Gouverneur Cornez, 7000 Mons, Belgium* - ²*LMCPA, Boulevard Charles de Gaulle, 59600 Maubeuge, France*

10h00 Microstructural damage in zirconia ceramics by laser patterning

E. Jiménez-Piqué, E. Roitero, A. Bouzo, M. Ochoa, M. Turón, J.J. Roa and M. Anglada

Department of Material Science and Metallurgical Engineering. Universitat Politècnica de Catalunya. C/Sant Ramon de Penyafort (EEBE), 08019 Barcelona, Spain

10h15 Low temperature degradation of laser patterned zirconia (3Y-TZP)

E. Roitero^{1,2,3}, M. Ochoa Sánchez¹, F. Soldera³, F. Mücklich³, M. Anglada^{1,2}, E. Jimenez-Pique^{1,2}

¹*Department of Materials Science and Metallurgical Engineering, Universitat Politècnica de Catalunya, Av. Diagonal 647, Barcelona 08028, Spain* - ²*Center for Research in Nanoengineering, CRnE, Universitat Politècnica de Catalunya, C. Pascual i Vila 15, Barcelona 08028, Spain* - ³*Department of Material Science and Engineering, Saarland University, Saarbrücken 66123, Germany*

10h30 Coffee break

11h00 Keynote lecture: Zirconia in Dentistry, by Corrado Piconi

Institute of Clinical Orthopedics and Traumatology, Catholic University Sacro Cuore, 240 via Pasquale II, 00168, Rome, Italy

11h30 Evaporation of phosphate groups during calcium phosphate sintering

N. Döbelin, M. Bohner

RMS Foundation, Bischmattstrasse 12, 2544, Bettlach, Switzerland

11h45 Suspension flame spraying of bioceramic coatings with antibacterial properties

P. Krieg¹, R. Gadow¹, A. Killinger¹ and A. Bernstein²

¹*Institute for Manufacturing Technologies of Ceramic Components and Composites (IMTCCC), University of Stuttgart, Allmandring 7b, 70569 Stuttgart, Germany* - ²*Musculoskeletal research lab, Department of Surgery, Clinics of Orthopedics and Trauma Surgery, University of Freiburg - Medical Centre, Hugstetter Straße 55, 79106 Freiburg, Germany*

12h00 3D Printed Hardystonite-Chitosan Scaffolds for Bone Regeneration

H. Elsayed¹, P. Colombo^{1,2}, S. Ramirez^{3,4}, S. Tadier³, L. Gremillard³, A. Montembault⁴, L. David⁴, T. Delair⁴

¹*Department of Industrial Engineering, University of Padova, via Marzolo 9, 35131 Padova, Italy* - ²*Department of Materials Science and Engineering, The Pennsylvania State University, University Park, PA 16801, USA* - ³*Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, MATEIS CNRS UMR 5510, 69621 Villeurbanne Cedex, France* - ⁴*Université de Lyon, Ingénierie des Matériaux Polymères, IMP@Lyon1, CNRS UMR 5223, Université Claude Bernard Lyon 1, 69622 Villeurbanne Cedex, France*

12h15 Mineralization process of chitosan hydrogels by calcium phosphate apatite

S. Ramirez^{1,2}, L. David¹, T. Delair¹, E. Maire², A. Montembault¹, S. Tadier², L. Gremillard²

¹*Université de Lyon, Ingénierie des Matériaux Polymères, IMP@Lyon1, CNRS UMR 5223, Université Claude Bernard Lyon 1, 69622 Villeurbanne Cedex, France* - ²*Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, MATEIS CNRS UMR 5510, 69621 Villeurbanne Cedex, France*

12h30 Novel bioceramic structures for intelligent neuroimplantation

R. Gadow, F. Kern, A. Killinger

Institute for Manufacturing Technologies of Ceramic Components and Composites, University of Stuttgart, Allmandring 7b, D-70569 Stuttgart, Germany

12h45 Lunch

Tuesday 06/09/2016 afternoon

14h00 Highlight lecture: Advanced multiphase zirconia ceramics, by Frank Kern

IFKB, Universität Stuttgart, Allmandring 7b, D-70569 Stuttgart, Germany

14h30 Can (Mg,Y)-PSZ be a valuable alternative to 3Y-TZP for dental application?

G. de Portu¹, J. Chevalier², T. Douillard², L. Gremillard²

¹*Institute of Science and Technology for Ceramics (ISTEC-CNR), Faenza, Italy* - ²*UMR CNRS 5510 (MATEIS), INSA-Lyon, Villeurbanne, France*

14h45 Bioceramic manufacturing process based on the impregnation of three-dimensional printed wax molds

B. Charbonnier, C. Laurent, D. Marchat

Ecole Nationale Supérieure des Mines, CIS-EMSE, INSERM U1059, F-42023 158 cours Fauriel Saint-Etienne cedex 2, France

15h00 Highlight lecture: Alumino-silicate wastes from ornamental stones: a new resource for construction materials, by Paola Palmero

P. Palmero¹, A. Formia¹, P. Antonaci² and J.-M. Tulliani¹

¹*DISAT, Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129, Torino, Italy* - ²*DISEG, Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129, Torino, Italy*

15h30 Solidification of a liquid earth binder via polymer gelation: towards poured earth concretes

A. Pinel^{1,2}, Y. Jorand¹, E. Fleury², C. Olagnon¹ and A. Charlot²

¹*Univ Lyon, INSA-Lyon, MATEIS CNRS UMR 5510, Université Claude Bernard Lyon 1, F-69621 Villeurbanne Cedex, France* - ²*Univ Lyon, INSA-Lyon, Ingénierie des Matériaux Polymères CNRS UMR 5223, Université Claude Bernard Lyon 1, F-69621 Villeurbanne Cedex, France*

15h45 Innovative cementitious and geopolymer materials as a sustainable alternative to traditional binders

D. Ziegler, J.-M. Tulliani, Paola Palmero

Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129, Italy

17h00 Confluence Museum visit

20h00 Conference dinner

Wednesday 07/09/2016 morning

09h00 Keynote lecture: Can mechanical properties of ceramics be improved by nanotubes reinforcement?, by Arturo Dominguez-Rodriguez

A. Domínguez-Rodríguez¹, B.M. Moshtaghioun¹ and D. Gómez García^{1,2}

¹Department of Condensed Matter Physics, University of Seville, P. O. 1065, 41080 Sevilla, Spain -

²Institute of Materials Science, University of Seville-CSIC, Spain

09h30 Study of crystallization, structure and piezoelectric properties of Sr-fresnoite and Sr-Ba fresnoite glass-ceramics

M.-S. Renoirt, M. Gonon

Materials Institute, Faculty of Engineering- University of Mons, Rue de l'Épargne 56, 7000, Mons, Belgium

09h45 The effects of SiO₂ content on the dielectric properties of BaTiO₃ ceramics and statistical approaches on the dielectric properties

U. Şen¹, K. E. Öksüz², M. Torman¹ and Ş. Şen¹

¹Sakarya University, Engineering Faculty, Department of Metallurgical & Materials Engineering, 54187, Sakarya, Turkey. - ²Cumhuriyet University, Engineering Faculty, Department of Metallurgical &

Materials Engineering, 58140, Sivas, Turkey

10h00 Processing and properties of ceramics with structured porosity for Oxygen Transport Membranes.

J. Seuba¹, C. Guizard², A. J. Stevenson³

¹Université de Lyon, INSA-Lyon, MATEIS CNRS UMR5510, F-69621 Villeurbanne, France - ²Institut Européen des Membranes, Université de Montpellier 2, Place Eugene Bataillon, 34095 Montpellier Cedex 5, France - ³Laboratoire de Synthèse et Fonctionnalisation des Céramiques, UMR3080

CNRS/Saint-Gobain, F-84306 Cavaillon, France

10h15 Oxidation of ZrB₂ and HfB₂ based ceramics at very high temperature under steam condition

V. Guérineau, A. Jankowiak

ONERA - The French Aerospace Lab, F-92322 Châtillon, France

10h30 Coffee break

11h00 Highlight lecture: Measurement of residual stresses in cemented carbides for cutting tools and finite element simulations of stress partition. by Daniele Mari

LCMP, IPHYS, EPFL, Station 3, 1015, Lausanne, Switzerland

11h30 Synthesis and characterization of a new Ti₃(Al,Cu)C₂ MAX phase solid solution

M. Nechiche^{1,2}, V. Gauthier-Brunet², T. Cabioc'h², A. Joulain², V. Mauchamp², X. Milhet², S. Azem¹, S. Dubois²

¹Laboratoire Elaboration, Caractérisation des Matériaux et Modélisation (LEC2M), Université Mouloud MAMMERI de Tizi-Ouzou. BP17, 15000. Algérie - ²Institut PPRIME, CNRS/Université de Poitiers/ENSMA, UPR 3346, BP 30179, 86962 Chasseneuil du Poitou-Futuroscope Cedex, France.

11h45 Effect of small additions of calcia on the grain size and mechanical properties of ceria-stabilized tetragonal zirconia

M. Turon-Vinas^{1,2}, M. Anglada^{1,2}

¹CIEFMA-Department of Materials Science and Metallurgical Engineering, ETSEIB, Universitat Politècnica de Catalunya, 08028 Barcelona, Spain - ²CRnE, Campus Diagonal Sud, Edifici C', Universitat Politècnica de Catalunya, 08028 Barcelona, Spain

12h00 Machinability in Sepiolite Based Glass-Ceramics containing LiF₂ (AlF₃)

G. Bayrak¹, E. Ercenk² and S. Yilmaz²

¹Welding Technology Department: Vocational School of Arifiye, Sakarya University, Fatih Mh. Esit Sk. No:7/A, 54580, Arifiye, Sakarya, Turkey - ²Metallurgical and material science engineering: Faculty of Engineering, Sakarya University, M7 Building, 54187, Serdivan, Sakarya, Turkey

12h15 Development of a computer aided method for the characterization of refractory materials microstructure.

N. Preux¹, P. Pilate¹, V. Lardot¹, F. Cambier¹, E. Brochen², C. Dannert², F. Holleyn³, O. Krause³

¹BCRC (Belgian Ceramic Research Centre, member of EMRA), avenue Gouverneur Cornez, 4, 7000 Mons Belgium - ²Forschungsgemeinschaft Feuerfest e.V., Rheinsstrasse 58, 56203, Höhr-Grenzhausen, Germany - ³Hochschule Koblenz, WesterWald Campus, Rheinstrasse 56, 56203, Höhr-Grenzhausen, Germany

12h30 The diamond and its industrial applications in dies and special tools

A. Cellard, N. Barthod

BALLOFFET Company, 53 Route du Charveyron, 01150, Lagnieu, France

12h45 Lunch and end of the conference

14h00 Optional: Visit of SETARAM facilities

LIST OF POSTERS

- 1 The temperature gradients inside an alumina elaborate by spark plasma sintering process**
Y. Achenani¹, M. Saädaoui², A. Cheddadi¹, G. Bonnefont³, G. Fantozzi³
¹Mohammadia School of Engineers, ERSTER Team, Mohammed V University In Rabat, Avenue Ibn Sina, P.O. Box 765-Agdal, Rabat, Morocco - ²Mohammadia School of Engineers, ERSIM Team, Mohammed V University In Rabat, Avenue Ibn Sina, P.O. Box 765-Agdal, Rabat, Morocco – ³INSA Lyon, MATEIS Laboratory, UMR 5510 CNRS, Lyon University, 20 Avenue Albert Einstein, F-69621 Villeurbanne Cedex, Lyon, France
- 2 Hybrid sol-gel coating containing ceramic particles for mild-steel protection**
P. Aubry¹, C. Delmotte¹, S. Wallon², E. Lachery³, A. Nicolay⁴, M. Poelman³, M.-G. Olivier⁴, M. Wenkin², V. Lardot¹ and F. Cambier¹
¹Belgian Ceramic Research Centre (membre of EMRA), 4 Avenue Gouverneur Cornez, 7000 Mons, Belgium - ²Coatings Research Institute - CoRI, 21 avenue Pierre Holoffe, 1342 Limelette, Belgium - ³Materia Nova (membre of EMRA), 56 rue de l'Epargne, 7000 Mons, Belgium - ⁴Service Science des matériaux, Université de Mons, 56 rue de l'Epargne, 7000 Mons, Belgium
- 3 Elaboration and characterization of mulitte obtained by reaction sintering of Algerian kaolin and aluminum hydroxide**
M.L. Bella^{1,2,3}, M. Hamidouche^{1,2}, L. Gremillard³
¹Emerging Materials Research Unit, University Ferhat ABBAS Setif 1, 19000, Setif, Algeria – ²Optical and precision mechanics institute, University Ferhat ABBAS Setif 1, 19000, Setif, Algeria. - ³MATEIS UMR CNRS 5510, INSA-Lyon, Bat Blaise pascal, 7 Av. Jean Capelle, Villeurbanne, 69621, Lyon, France.
- 4 Spark Plasma Sintering mechanisms of Spinel (MgAl₂O₄) nanopowders**
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- 5 A comparative study of different strategies to obtain quantitative chemical information from hyperspectral data based on the Fourier Transform Infrared Spectroscopy (FTIR)**
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- 6 Direct-ink writing of high-strength dense ceramics**
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- 7 Wear Behaviour of Cordierite doped with ZrO₂ Produced from Zeolite**
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- 8 Experimental study of electromagnetic field impact on surface diffusion in zinc oxide ceramic**
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- 9 Processing and characterization of zirconia (3Y-TZP) composites with graphene nanoplatelets**
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- 10 A Choline Chloride/DMSO solvent for the direct synthesis of diformylfuran from carbohydrates in the presence of heteropolyacids**
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- 11 Low temperature degradation and mechanical properties of (Y,Ce-) co-stabilized zirconia**
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- 12 In situ TEM Nano-Compression and Mechanical Analysis of MgO and Al₂O₃ nanoparticles**
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- 13 Nanostructured Zirconia Composites with High Ageing Resistance**
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- 14 Dielectric Properties of Zirconium Modified (Na_{0.5}Bi_{0.5})TiO₃ Ceramics by Mechanical Activation**
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- 15 Effect of Mechanical Activation on the Structural and Electrical Properties of Mn doped (Na_{0.5}Bi_{0.5})TiO₃ Ceramics**
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- 16 Surface modification of zirconia-toughened alumina bioceramics for orthopedic applications**
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- 17 Characterization of in-situ ZrB₂-Al₂O₃ composites Produced by Powder Metallurgy**
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- 18 Reinforcement of Hydroxyapatite Bioceramic by Addition of ZrO₂ and Al₂O₃**
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- 19 Role of inclusions on the diffusion after spark-plasma sintering of Ce:YAG for optical applications**
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- 20 Assembly of transparent polycrystalline Er :YAG ceramic for Laser application**
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- 21 Effect of microstructure on electron trapping and conduction in polycrystalline ceramics under defocused electron beam irradiation in SEM**
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- 22 Thermomechanical properties and fracture of resin-bounded-sand cores. Application in aluminum foundry**
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- 23 Corrosion and low temperature degradation of zirconia dental ceramics**
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- 24 Grain growth kinetics and regression analysis of the PbO-doped BaTiO₃ ceramics**
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- 25 Zirconia behavior after surface laser treatment**
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- 26 Mechanical behaviour of a randomly porous β -TCP sample: study of the fracture path by X-ray tomography**
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- 27 Effect of processing on microstructure and room temperature mechanical and electrical properties of 3YTZP/2.5 vol% MWNT ceramic nanocomposites**
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- 28 Producing conductive ceramics for electro discharge machining**
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- 29 Analysis and 3D microstructural characterization for the Ce, Y and Zr elements through the grain boundaries of 12Ce-ZrO₂/3Y-ZrO₂ composites as a function of the sintering temperature**
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- 30 Comparison of Properties CAS Based Ceramics and Glass-Ceramics Produce From Pure and Waste Raw Materials**
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- 31 Inkjet printing of relative humidity resistive sensors**
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- 32 Gamma Attenuation Properties of Bi₂O₃ doped-CMAS glass ceramics enameled steel**
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- 33 Gamma Attenuation Properties of PbO doped-CMAS glass ceramics enameled steel**
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- 34 The effect of additives on the thermal properties and sealing characteristic of basalt based glass-ceramics for solid oxide fuel cell application**
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- 35 Enhanced magnetoelectric properties of 3SCNO-4CFO-3SCNO laminated composite**
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36 Fabrication of MgAl₂O₄ spinel from synthesized nanopowders

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37 Apparent Fast Interdiffusion and Localized Doping Produced in Bulk Nanocrystalline Ceria and Zirconia by Spark Plasma Sintering

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