Foreword

The Brazilian Ceramic Conference in this 57th edition (CBC57) was held together with the 5th Ibero-American Ceramic Conference (IberAcerC5), at the Convention Center of the Praiamar Hotel, Natal/RN, Brazil from May 19th to 22nd, 2013, with the participation of researchers and scholars from Spanish and Portuguese speaking countries, such as Spain, Argentina, Mexico, Uruguay, Colombia, Chile, Portugal and Brazil.

The Brazilian Ceramic Society, the Spanish Society of Ceramics and Glass, and the Portuguese Ceramic Society supported both events. This conference celebrated the 60th anniversary of the Brazilian Ceramic Society (ABCeram), which was created in 1953.

CBC is an itinerant conference since 1954, which has been held in several locations in the country. It represents the most traditional meeting of the ceramic community in Brazil. CBC aims to promote the interaction of the various sectors involved in the ceramic field, including industries, technical schools, universities, research institutes, and raw materials and equipment suppliers. Therefore, it has a broad character, which comprises not only ceramic materials (red ceramic, coatings, refractories, whiteware, technical ceramics) but also correlated subjects such as energy, environment, mineral resources, technology, quality, and human resources.

Along this meeting the participants had a wide range of events in several sessions of technical papers (oral and poster presentations), plenary and keynote lectures, panels, short courses and workshops.

This edition celebrated a record number of submitted and presented contributions (800 and 691, respectively) as well as participants (561). This is also the first time that selected technical papers from CBC are published in an internationally indexed journal, which represents a milestone for the ceramic community in Brazil.

The opening plenary session was held by Prof. José Serafin Moya, from the Institute of Materials Science of Madrid (ICMM), Spanish National Research Council (CSIC). The conference featured presentations from distinguished scientists and technologists from Ibero-American countries including 4 plenary and 10 keynote lectures, and 3 discussion panels. Moreover, 4 short courses on processing and characterization techniques for ceramic materials were offered.

Celebrating the 57th edition of CBC, two distinguished members of the ceramic community in Brazil were awarded for their lifelong contribution for the development of this area in our country and particularly for the outstanding support in several editions of this event. The award recipients were José Carlos Bressiani (IPEN/CCTM) and Marco Antonio Pacheco Jordão (ABCeram).

From the papers presented at the Conference, 125 have been selected for publication in Materials Science Forum after a reviewing process. These papers cover a wide range of topics regarding to structure, processing, characterization and application of ceramic materials.

The Editors gratefully acknowledge the outstanding contributions of the authors, the supporting help of the members of the Scientific Advisory Committee and the expert referees, who have devoted their time and efforts to making it a successful meeting ensuring a high quality standard for the conference.

The Editors Brazil, 2014

Volume Editors

Sonia Mello Castanho – IPEN/CNEN Wilson Acchar – UFRN Dachamir Hotza – UFSC

Organizing Committee

Sonia Mello Castanho – IPEN/SP

Adilson Chinelatto - UEPG

Agenor De Noni Jr. - UNESC

Ana Cristina Figueiredo de Melo Costa - UFCG

Anselmo Ortega Boschi

Antonio Eduardo Martinelli - UFRN

Antonio Pedro Novaes de Oliveira - UFSC

Carlos Alberto Paskocimas - UFRN

Carlos Mauricio F. Vieira - UENF

Cristiane Aun Bertoldi - FAU-USP

Dolores Lazar - IPEN

Dulce Maria de Araujo Melo - UFRN

Eduardo Bellini Ferreira – EESC-USP

Eliana Cristina da Silva Rigo - USP

Eliana Muccillo - IPEN

Fabiana Villela da Motta - UFRN

Fabio Melchiades – UFSCar

Fernando dos Santos Ortega – FEI

Humberto N. Yoshimura – UFABC

Juliana Marchi – UFABC

Luiz Renato Araújo Pontes – UFPB

Marilena Valadares Folgueras – UDESC

Mauricio Roberto Bomio Delmonte - UFRN

Monica Chiusano Cocchi – SENAI Mário Amato

Rafael Salomão - EESC/ USP

Rosa Maria Rocha - IAE

Rubens Maribondo Nascimento - UFRN

Sebastião Ribeiro - EEL/USP

Uilame Umbelino Gomes - IDEM

Ulisses Soares do Prado - Lining Consultoria e Projetos

Valquíria de Fátima Justo – Poli-USP

Board of Directors of the Brazilian Ceramic Society

Samuel M. Toffoli (Universidade de São Paulo) – President

Antonio Carlos de Camargo (IPT – Instituto de Pesquisas Tecnológicas) – Vice-President José Carlos Bressiani (IPEN – Instituto de Pesquisas Energéticas e Nucleares) – Finances

Edgar Dutra Zanotto (Universidade Federal of São Carlos) – Publications

Waldir de Sousa Resende (IBAR) – Industrial Relations

Marcelo Rodrigues Sampaio (Mineração Baruel) - Communications

Carlos Augusto Xavier Santos (Centro Universitário UniItalo) – Meetings Luis Leonardo H. Curimbaba Ferreira (Elfusa Geral de Eletrofusão) – Special Matters Ulisses S. Prado (Lining Representação, Consultoria e Projetos) – Technical Commissions Marco Antonio Pacheco Jordão (ABCeram) – Special Assistant

International Advisory Committee

Ana M. Segadães - Universidade de Aveiro, Portugal

Ariel Moreno – Universidad de la Republica, Uruguai

Cristina Volzone - Universidad de La Plata, Argentina

Emilio Criado - Instituto de Cerámica y Vidrio, Spain

Jairo A. Escobar – Universidade de los Andes, Colombia

José M. Ferreira - Universidade de Aveiro/ Sociedade Portuguesa de Cerâmica e Vidro, Portugal

José S. Moya - Centro de Materiais Bioinspirados, Spain

Miguel Campos - Sociedad Española de Ceramica y Vidrio, Spain

Raul E. Bolmaro - Universidad Nacional de Rosario, Argentina

Rodrigo Moreno - Instituto de Cerámica y Vidrio, Spain

Secretariat

Metallum Technical and Scientific Conferences

Sponsors

Elfusa Mineração Jundu l

Exhibitors

Altmann	EDG	Micromeritics
Armil	Emic	Mineração prime
CGM	Instrutécnica	Panalytical
CTGAS-ER	Labcontrol	Shimadzu

Supporting Institutions

ABM IPT UFRN-PPGCEM

ANICER SINCER

ASPACER SINDLOUÇAS

Supporting Agencies

CAPES CNPq FAPESP