

Preface

For now 20 years, the ELECTROCERAMICS series congress has provided a unique opportunity to examine every two years, through the European's and now World's Electronic Ceramics Community, how the Ceramic Art and Science are evolving. Many major phases of their development have been presented and anticipated during past events.

After Rome in August 2002, the present Congress ELECTROCERAMICS IX was held from 31st May to 3rd June 2004 in Cherbourg, that is to say in north of Normandy in a district which name is Nord Cotentin. These location and date were highly symbolic of gathering Humanity for Peace and Cooperation as it was just 60 years after D-day on beaches that are very close to Cherbourg and not far from Caen and its Memorial for Peace. The Conference took place at the "Site Universitaire de Cherbourg", that is a part of the University of Caen, both in the Institut Universitaire de Technologie of Cherbourg Manche and in the Engineer School of Cherbourg. It was organized together by the Laboratoire Universitaire des Sciences Appliquées de Cherbourg (LUSAC) and the Société de l'Electricité, de l'Electronique et des techniques de l'information (SEE) with the participation of the Groupe Français de la Céramique (GFC, French branch of the European Ceramic Society). ELECTROCERAMICS IX was under the auspices of the European Ceramic Society (EcerS), the American Ceramic Society, the Ceramic Society of Japan, the Korean Ceramic Society and POLECER.

Nowadays, one has to cope with new technological challenges and the complex world of Materials and Ceramic Technology, coupled with an extremely serious financial crisis. Components need to be more and more efficient, reliable, . . . cheap . . . and new functions or applications are developed every day. That gave many topics that were presented and discussed, including materials knowledge, powders processing, ceramic technology, components implementation and reliability problems related to materials together with ceramic technology.

The Conference has been organized on:

- Four parallel oral Symposia:
 - A: Processing and Technologies
 - B: Pyro, Piezo, Ferroelectrics
 - C: Energy and Environment
 - D: Others Devices and Applications;

- a Plenary Session;
- a continuous Poster Session;
- two special COST sessions (COST 525: Grain Boundary Engineering and COST 528: Chemical Solution Deposition of Thin Films).

There were three plenary, 40 invited, 191 oral and 261 poster contributions, a total of 395. Some important trends can be deduced from the analysis of the technical program:

- Importance of Technology: nine 2 h oral sessions including powder technology, nanotechnologies, multilayer structures, thick and thin films technologies and science of sintering;
- Piezo-Pyro-Ferroelectrics: four oral sessions for films, three for pyroelectric and piezoelectric components and three for ferroelectric one;
- Many oral sessions have been devoted to specific components: dielectric (2), microwave ceramics, magnetics and spintronics, non linear resistances, sensors, superconductors, optical ceramics and glasses;
- A large place was reserved to ceramics for energy production: SOFC (two oral sessions) and conducting ceramics (2) and, for the first time, electronuclear ceramics (2);
- Two oral sessions were devoted to space charges and ageing related phenomena;
- At last, the session entitled « environmentally friendly materials » dealt with the development of components made from materials not detrimental for the environment.

Over 470 participants, engineers and Scientifics attended the Conference, coming from 38 countries and the five continents. 18% belong to Industry, 55% are permanent searchers from the University and 27% were students. 74% attendees came from Europe, including 10% attendees from Northern Europe and 30% from East of Europe. 19% attendees came from Far East, and everybody noticed the very important delegation from Brazil!

If one word can resume the Conference, it is "conviviality". Attendees worked and lived together from early in the morning up to late in the night, every day. In addition to the working sessions, all meals were provided by the Restaurant of the University, as well as the Monday evening reception.

A pancakes party was organized together with the poster session, Tuesday evening. There has been also a Reception at the Town Hall of Cherbourg on Wednesday evening, before the Concert at the Eglise du Vœu including the Requiem from Gabriel Faure interpreted by the Chœurs of the University of Caen together with other University chorists from different countries (160 altogether). At last, a tourist tour « La Hague » and the « Nez de Jobourg » on Thursday afternoon, a cocktail in the Castle of Flamanville and the Gala Dinner closed the Conference. Prof. J.F. FERNANDEZ announced then that the next ELECTROCERAMICS X will be organised in Toledo, Spain, 18–22 June, 2006.

We would like to thank all plenary and invited speakers, oral and poster contributors and the session chairs who have devoted their time and efforts to make the Cherbourg Meeting a hugely successful one. A special mind will be devoted to the paper referees who made possible the elaboration of these proceedings. We are indebted to the International Advisory Board and the Scientific Committee for their advice and help in planning the Conferences.

Special thanks are also due to the sponsors of the Conference: the Conseil Régional de Basse Normandie, the Conseil Général de la Manche and the Communauté Urbaine de Cherbourg that, altogether, financed a large part of the Conference activities. The City of Cherbourg Octeville gave us many facilities, and the University of Caen Basse Normandie a substantial additional financial help together with the facilities of the Site Universitaire de Cherbourg. Thank you also to le Crédit Agricole, Air France, and to all the participants to the materials and books exhibition. We thank also Bernard Cazeneuve (Lord Mayor of Cherbourg and Vice President of the Conseil Régional de Basse Normandie), Jean Lemièrre (Representative at the French Parliament and Vice President of Conseil Général de la Manche) and Eugène Dubois (Vice President of the University of Caen Basse Normandie) for their warm support and their welcome talks.

A special thank also is due to the team of SEE who made a huge work and everything (nearly) easy, and to Cotentin Tourisme who helped everybody to find hotel accommodation and bus transportation.

Finally, we are the most grateful to all our colleagues and technical staff at the Site Universitaire de Cherbourg and students from the Ecole d'Ingénieurs de Cherbourg who were ever so helpful and ready a every moment to invest much of their time before, during and after the Conference: the success of the Conference was wholly due to them, and the final thank you is for them.

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