EULASUR

Network in Advanced Materials and Nanomaterials of industrial interest between Europe and Latin American Countries of MERCOSUR (Argentina-Brazil-Uruguay)

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Legal entity name: Agencia Estatal Consejo Superior de Investigaciones Científicas

Project website address: www.icmab.es/eulasur

SEVENTH FRAMEWORK PROGRAMME

Executive Summary

In August 2009 a new network of scientists, technologists, industrial experts and policy makers was created. Its name is EULASUR and for 3 years it has been promoting international research collaboration in the field of material science.

Novel materials are in continuous demand because many of the well-established materials, such as metals or plastics cannot fulfill all technological requirements for the constantly growing new applications and challenges. Clean energy, future electronics and new medical developments will run on materials that right now are being designed and analyzed in the lab.

Advanced functional ceramics, hybrid materials and nanomaterials represent some of the most promising and fascinating developments in material chemistry in recent years. And its industrial interest grows as research shows their tremendous possibilities of application.

EULASUR is a European FP7 funded project that focuses on these advanced materials and nanomaterials. Its objective is to foster international collaboration and gain firsthand knowledge of the state of the art of research in these fields.

The concept of the EULASUR Coordination Action is to focus on developing research links with leading universities, institutes and industrial companies in the BRAU countries, which are expected to deeply increase their research activities in materials over the next few years. And the establishment of the basis for joint participation of partners from EU and BRAU in the future Calls of the NMP Work Programme. In the global framework, the European member states wish to participate with BRAU in certain research areas having common objectives in science and technology as a privileged partner and cooperate with them for the increase of the critical mass of academic and industrial researchers as it is being done with other geo-strategic areas (China, India, Korea, etc).

The EULASUR project is composed of 13 partners. 8 European institutions and 5 from Latin-America. Together these 13 partners organized several activities to achieve EULASUR goals. Two summer schools held in Argentina helped developing strong bonds between researchers and promoting interactions among groups of excellence. Research ideas, results and perspectives were shared and areas for possible future collaborations were identified.

A first Workshop was organized in Brazil under the title “From Materials to Products”. It was focused on how to obtain innovative products from novel materials taking into account not only costs and manufacturing methods, but also environmental impact, safety and disposal.

The second Workshop took place in Copenhagen, this time the topic of interest was another key factor to competitiveness: the necessary collaboration between industry and public research.

Other brief workshops of two day duration have been organized in Argentina and Copenhagen to maximize and obtain concrete partner collaborations and 19 exchanges among students and researchers have been performed promoting international interactions between scientists to improve the state of the art of advance materials research.

EULASUR has been a productive first step in a long-term cooperation among material scientist and European and Latin-American research institutions.

Project contents and objectives

The EULASUR project is composed of 13 partners. 8 European institutions and 5 from Latin America.

- The Institute of Materials Science of Barcelona of the CSIC in Spain represented by Carles Miravitlles and Susana Garelik.
- The Institut de Chimie de la Matière Condensée de Bordeaux of the CNRS in France represented by Jean Etourneau and Etienne Duguet.
- The Deutsches Elektronensynchrotron in Germany represented by Helmut Dosch, Rainer Gherke and Sergio Funari.
- The Department of Materials of the Imperial College London in United Kingdom represented by John Kilner.
- The Copenhaguen Business School in Denmark represented by Leif-Bloch Rasmussen and Janni Nielsen.
- The Unit of Crystallography and Mineralogy of the Universitat Autonoma de Barcelona in Spain represented by José Luis Briansó.
- Veneto Nanotech in Italy represented by Nicola Trevisan.
- Université Pierre et Marie Curie Paris 6 in France represented by Clément Sanchez and Thibaud Coradin.
- The Universidad Nacional de Lujan, Buenos Aires in Argentina represented by Hernán Bacarini.
- The Universidad de la República in Uruguay represented by Álvaro Mombrú.
- The Institute of Chemical Physics for Materials, Environment and Energy and the
- The Centro de Investigaciones Ópticas of the CONICET in Argentina represented by Ernesto Calvo and Jorge Tocho
- The Universidade Federal de Minas Gerais in Brazil represented by Wagner Rodrigues.
- The Instituto de Nanociencia y Nanotecnología – Comisión Nacional de Energía Atómica, in Argentina represented by Carlos Balseiro.

The main objective of this Coordination Action is to create a cooperation platform for forming strategic partnerships between scientists, scientific managers, policy makers, technology transfer and industrial experts in the European countries and three Latin-American (LA) countries belonging to MERCOSUR: Brazil, Uruguay and Argentina (BRAU).

The concept of the EULASUR Coordination Action is to focus on developing research links with leading universities, institutes and industrial companies in the BRAU countries, which are expected to deeply increase their research activities in materials over the next few years. And the establishment of the basis for joint participation of partners from EU and BRAU in the future Calls of the NMP Work Programme. In the global framework, the European member states wish to participate with BRAU in certain research areas having common objectives in science and technology as a privileged partner and cooperate with them for the increase of the critical mass of academic and industrial researchers as it is being done with other geo-strategic areas (China, India, Korea, etc).

EULASUR General Objectives:

• Gain first-hand knowledge of the state-of-the-art in specific areas of materials research that are of interest to both the EU and BRAU and establish a research agenda based on the pre-selected scientific topics of interest and any others to be selected during the project.

• Create a cooperation platform for strategic partnerships among scientists, scientific managers, policy makers, technology transfer and industrial experts from the EU and BRAU – to promote integration, increase research excellence and achieve critical mass.

• Establish a solid basis for research centers and industries from the EU and BRAU countries to submit high quality proposals for joint research under future Calls in Theme 4, NMP Work Programme and the INCO Programme.

Summer Schools, Exchanges and Partnership Actions are some of the tools used to achieve these objectives

Work performed and main S & T results / foregrounds

First EULASUR Summer School **"Properties and Applications of Nanomaterials"** was successfully held at Hotel Amancay, Bariloche (Argentina), on 3-8 October 2010, under the direction of Prof. Carlos Balseiro from CNEA (Argentina) and the co-direction of DESY (Germany) and UPMC (France). Altogether, 95 people attended the School, among them students (65), Lecturers, Professors, EULASUR Advisory Board members and other senior staff from project partners, of all them, 26 came from Europe and 76 from Latin America.

During the School 24 conferences were delivered followed by corresponding debates between Professors and students, and 2 poster sessions were held. At the same time a Workshop organized by Leif-Bloch Rasmussen, Janni Nielsen and Maja Horst from the Copenhagen Business School (CBS) and Susana Garelik from the CSIC-ICMAB, was held simultaneously to the Summer School. Divided in 3 different sections "Grounding EULASUR", "Research Perspectives in Projects" and "Scientific Social Responsibility" this Workshop gathered Professors and other senior staff from partners facilitating them to know each other and to participate together in different exercises to develop common potential projects.

These events favored the debate about the development of new projects, and scientific discussions at very different levels, there was an intense interaction among participants, mainly among the youngest ones, which favored the planning of student exchanges from BRAU to Europe and viceversa, having 10 of them planned to be performed during first half of 2011.

The Second EULASUR Summer School on "**Simulation, Characterization and Optical Methods for Materials and Nanomaterials (multifunctional ceramics and hybrid materials)"** was held at La Plata, Argentina, on the 4th - 9th of September 2011. It was organized by the Centro de Investigaciones Ópticas of the CONICET, Argentina.

The four topics of the School (Simulation, Characterization, Optical Methods and Innovation) were developed by senior national and international researchers from different internationally recognized research centers. In total, 104 participants were registered, from which 78 were students coming from Latin American and European countries.

A first Workshop **"From Materials to Products"** took place from 07 to 09 April 2011, in the Bristol Merit Hotel in Belo Horizonte, Minas Gerais, Brazil.

The Universidade Federal de Minas Gerais (Wagner Rodrigues – Workshop Director) and the Imperial College London, jointly organized the event.

The goal of this workshop was to promote discussions on "innovative products from innovative materials". That theme was organized in different topics covering different and complementary areas, such as new chemicals and pharmaceutical products, structural materials, new ceramics and their applications, biomaterials and devices. The strategies to foster innovation and the industrialization of new technologies were also presented in a series of talks and round tables. The invited speakers and debaters were chosen not only among specialists belonging to the EULASUR partners, but also from other European and Latin American institutions.

Another objective of the Workshop was to create an opportunity for the members of the Consortium to exchange views and experiences, aiming at the crystallization of joint research proposals to the support agencies from Europe and Latin America. In view of this the attendees of the Workshop were mainly members of the EULASUR, but the event was opened also to external public until completing the number of 120 participants.

The Second EULASUR work-shop was held at Copenhagen Business School, Denmark on March 14.-16, 2012. It was organized by Leif-Bloch Rasmussen and Janni Nielsen of the Copenhagen Business School. The work-shop attracted 62 participants, including invited speakers.

This work-shop approached two themes: **"Materials of social, economical and political interest"** and **"Starting-up and managing companies in the field of Materials and Nanomaterials"**

These two main themes spanned one day each. They were supplemented with a third theme on the last day as the EULASUR project during its two summer schools in Argentina and the first work-shop in Brazil had shown the needs and wishes for presenting potentials for future co-operative work among partners - and for presenting new joint project proposals.

During these 3 years 19 exchanges have been performed among students and researchers from Latin America and Europe, enabling them to work and participate in other institutions where sometimes the same research interests were approach in different ways showing and increasing new research possibilities of groups involved.

Further to these exchanges a complete file on alternative mobility schemes has been developed among partners to motivate knowledge exchange beyond EULASUR.

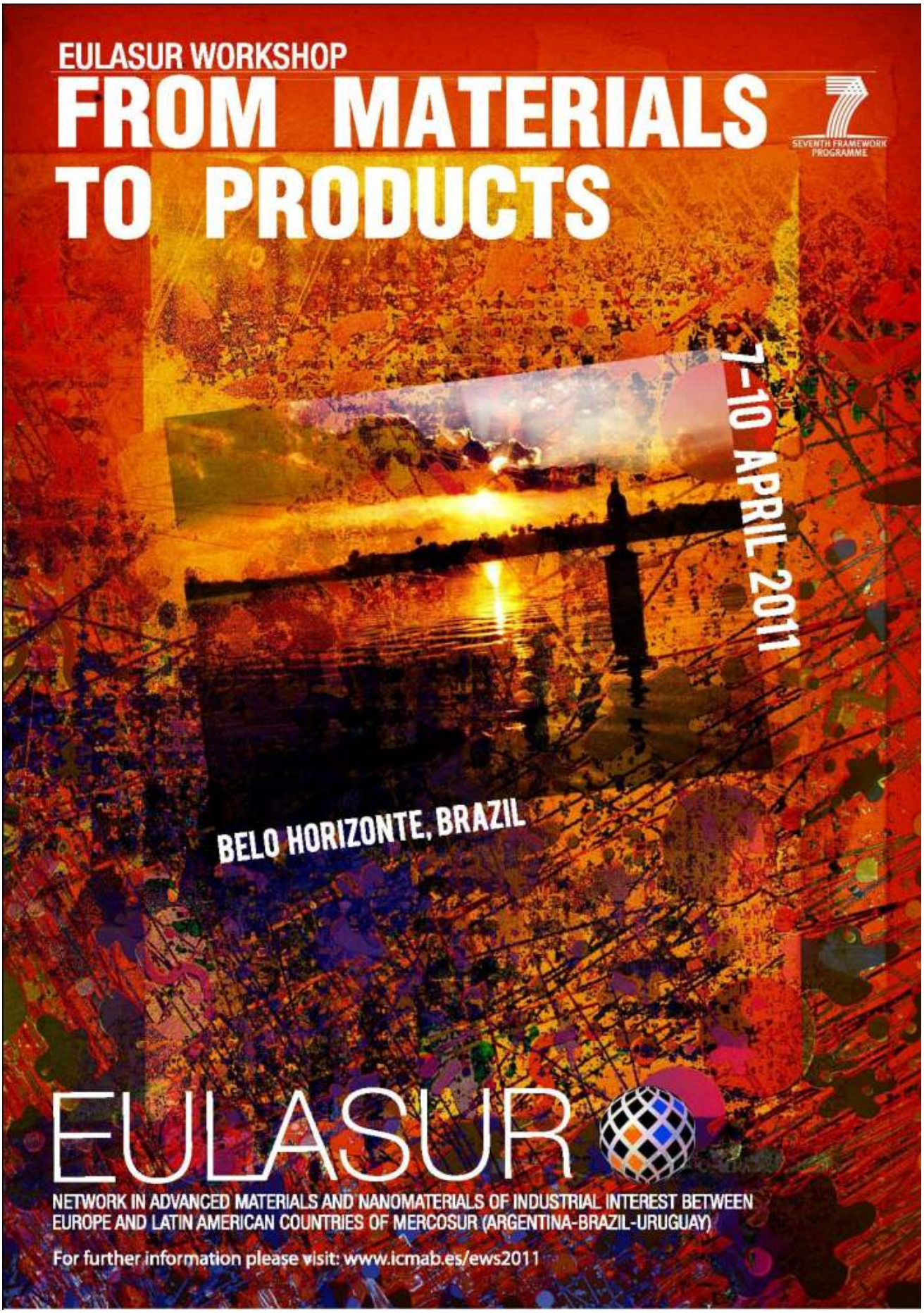
An approach to large facilities has been done, creating a list of the most important ones in BRAU and EU in order to settle a model of utilization of these facilities and facilitate the access of all partners (i.e. other potential users in BRAU and EU) to this kind of research infrastructures.

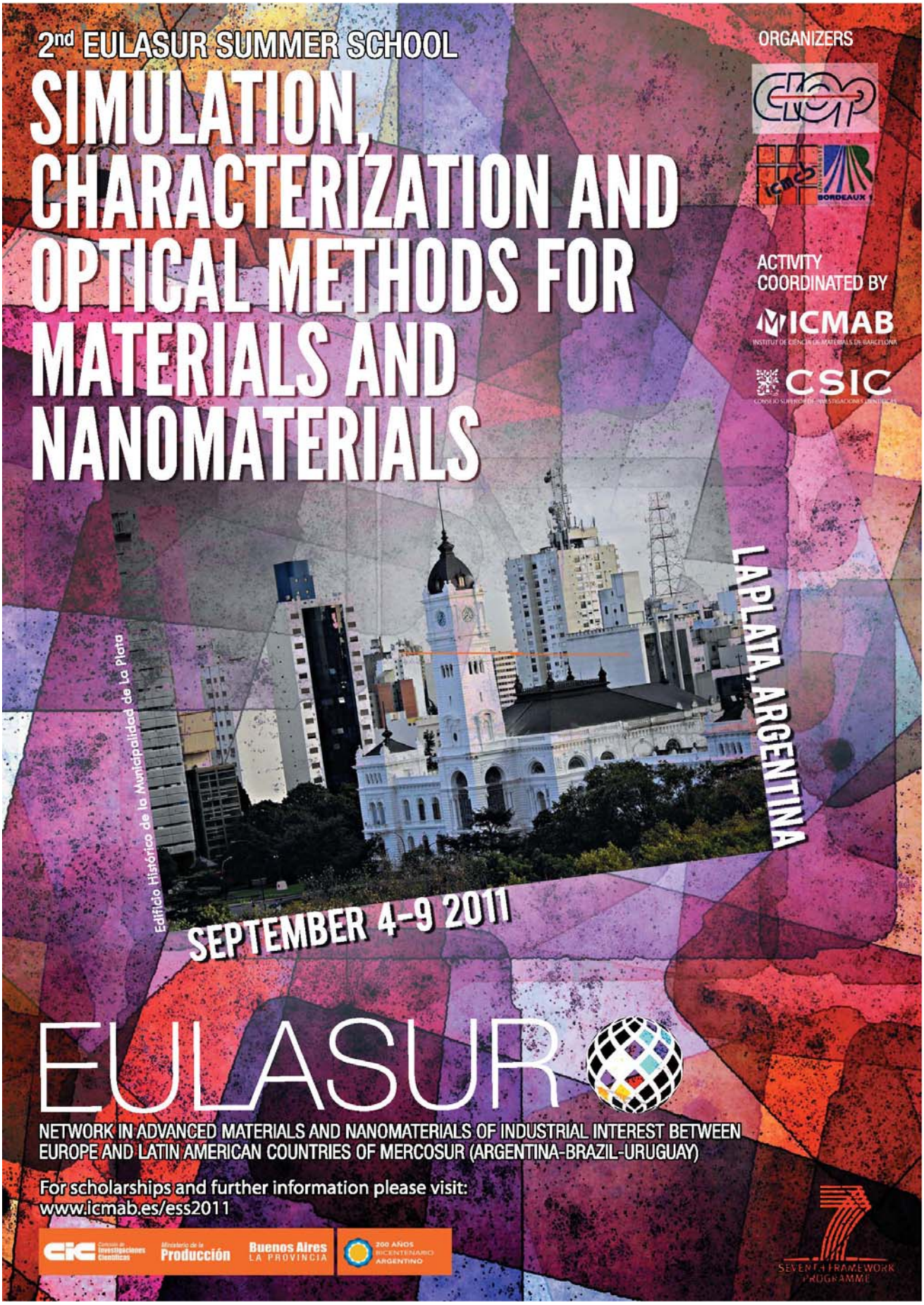
As a result of these interactions and having conducted a survey to identify the research topics of common interest between LA and EU on this field, some joint project proposals have been submitted focusing these specific topics to several FP7 Calls (NMP and PEOPLE IRSES Program) by different EULASUR project partners.

Finally, all communication tools have been designed and implemented, project website (www.icmab.es/eulasur) is the point of interaction with external users and the scientific community and it includes some functionality applications to participate in project events… Also, each EULASUR event has its own website (linked to the general one) with specific information concerning the event (programme, venue, registrations…).

Dissemination has been importantly considered in this collaborative action from the beginning, thus, corporate image of the project and its events has been carefully designed and all details have been taken into account. At the same time, contacts with scientific community and policymakers have been performed in order to disseminate project activities and get their involvement, as well as a fluent communication among partners has been achieved.


EULASUR SUMMER SCHOOL AND WORKSHOP
PROPERTIES AND APPLICATIONS OF NANOMATERIALS
OCTOBER 3-8 2010
BARILOCHE, ARGENTINA
EULASUR
NETWORK IN ADVANCED MATERIALS AND NANOMATERIALS OF INDUSTRIAL INTEREST BETWEEN EUROPE AND LATIN AMERICAN COUNTRIES OF MERCOSUR (ARGENTINA-BRAZIL-URUGUAY)
For scholarships and further information please visit:
www.icmab.es/eulasur; or contact: eulasur.bariloche@cab.cnea.gov.ar
SEVENTH FRAMEWORK PROGRAMME


EULASUR WORKSHOP
FROM MATERIALS TO PRODUCTS
SEVENTH FRAMEWORK PROGRAMME
7-10 APRIL 2011
BELO HORIZONTE, BRAZIL
EULASUR
NETWORK IN ADVANCED MATERIALS AND NANOMATERIALS OF INDUSTRIAL INTEREST BETWEEN EUROPE AND LATIN AMERICAN COUNTRIES OF MERCOSUR (ARGENTINA-BRAZIL-URUGUAY)
For further information please visit: www.icmab.es/ews2011


2nd EULASUR SUMMER SCHOOL
SIMULATION, CHARACTERIZATION AND OPTICAL METHODS FOR MATERIALS AND NANOMATERIALS
ORGANIZERS
ACTIVITY COORDINATED BY
ICMAB
CSIC
Edificio Histórico de la Municipalidad de La Plata
LA PLATA, ARGENTINA
SEPTEMBER 4-9 2011
EULASUR
NETWORK IN ADVANCED MATERIALS AND NANOMATERIALS OF INDUSTRIAL INTEREST BETWEEN EUROPE AND LATIN AMERICAN COUNTRIES OF MERCOSUR (ARGENTINA-BRAZIL-URUGUAY)
For scholarships and further information please visit:
www.icmab.es/ess2011
Producción
Buenos Aires
LA PROVINCIA
200 AÑOS
BICENTENARIO
ARGENTINO
SEVENTH FRAMEWORK
PROGRAMME

COPENHAGEN BUSINESS SCHOOL

EULASUR WORKSHOP COPENHAGEN

SEVENTH FRAMEWORK PROGRAMME

14–16 MARCH 2012

COPENHAGEN, DENMARK

EULASUR

NETWORK IN ADVANCED MATERIALS AND NANOMATERIALS OF INDUSTRIAL INTEREST BETWEEN EUROPE AND LATIN AMERICAN COUNTRIES OF MERCOSUR (ARGENTINA-BRAZIL-URUGUAY)

For further information please visit: www.icmab.es/ews2012

EULASUR Kick-off Meeting, Barcelona (Spain), 19-20 October 2009

EULASUR Summer School, Bariloche (Argentina), 3-8 October 2010

EULASUR Summer School, La Plata (Argentina), 4-9 September 2011

EULASUR Workshop, Minas Gerais (Brazil), 7-10 Abril 2011

EULASUR Closing Meeting, Barcelona (Spain) and Buenos Aires (Argentina), 10-11 July 2012

S & T Results: Articles published

Fruit of EULASUR Exchanges following scientific articles have been or are being prepared:

Helena Pardo and Ricardo Faccio (UdelaR) together with Nieves Casañ (ICMAB)

- **Electrodeposition of biocompatible, conducting polymer-graphene composite films.**

On preparation.

- **Theoretical and experimental study on the structure and magnetic properties of PrBaMnFeO5.5+δ.**

On preparation.

David Grosso (UPMC) together with Galo Soler Illia (CNEA)

- **Critical aspects in the production of periodically ordered mesoporous titania thin films.**

Galo J. A. A. Soler-Illia, Paula C. Angelom, M. Cecilia Fuertes, David Grosso, and Cedric Boissiere. *Nanoscale 2012, 4, 2549.*

Potential impact and main dissemination activities

Potential Impact

The result and the expected impact of this project are in the same direction as its objectives. The main expected result is to establish strategic partnerships between scientists, scientific managers, policy makers, technology transfer and industrial experts in the European Community and three Latin-American (LA) countries belonging to MERCOSUR: Brazil, Uruguay and Argentina (BRAU), which involves a meaningful and fruitful scientific cooperation.

Materials technologies and increasingly nano – materials are a key strategic area impacting a wide range of industrial sectors from transport to buildings; domestic appliances to computers and hand-held electronics; energy systems and supply to healthcare. Product manufacturing today operates on a global scale with major industrial players having operations in different world areas making often identical products for shipment to customers around the world.

The concept of the EULASUR Co-ordination Action is to focus on developing research links with leading universities, institutes and industrial companies in the three southern LA countries, namely Brazil, Argentina and Uruguay (BRAU), which are expected to deeply increase their research activities in materials over the next few years. Until now there has been no specific action in material science and technology between the EU and the BRAU countries and hence EULASUR will be the first action of this kind and will establish the basis for joint participation of partners from EU and BRAU in the future Calls of the NMP Work Programme. In the global framework, the European member states wish to participate with BRAU in certain research areas having common objectives in science and technology as a privileged partner and cooperate with them for the augmentation of the critical mass of academic and industrial researchers as it is being done with other geo-strategic areas (China, India, Korea, etc).

It is of utmost importance for a successful implementation of the 7th FP to encourage EU consortia to integrate promising institutions in these countries and to encourage their research institutions to approach EU institutions with co-operation offerings and project proposals addressing the themes of the 7th FP.

EULASUR Coordination Action has got good results in involving scientists from LA and EU to gain firsthand knowledge of the state-of-the-art in specific areas of materials research that are of interest to both the EU and BRAU and establish a research agenda based on the selected scientific topics of interest; promoting integration among scientists, scientific managers, policy makers, technology transfer and industrial experts from the EU and BRAU, increasing the research excellence in both regions; establishing a solid basis for research centres and industries from the EU and BRAU countries to submit high quality proposals for joint research under Calls with Theme 4 {Materials} of the NMP Work Programme and the INCO Programme.

EULASUR impacts are especially strong among young scientists who have benefit from its project activities. Summer Schools, Workshops and Exchanges offered an excellent opportunity for coexistence to share experiences and knowledge and establish interactions between them, at the same time these events were organized by prestigious institutions and counted with the participation of high level scientists from both regions.

Researchers on the other hand, have been able to establish a permanent dialogue across different levels of responsibility, to support the definition of the research priorities and the development of innovation policies of the EU and BRAU, in the field of the selected topics in Materials and Nanomaterials.

Other impacts of this project are the settlement of new models and structures for collaboration between the diverse actors of science, technology and innovation in BRAU and

the EU, and encourage the common use of existing research resources and access to the Large Infrastructures for research exchanges and training.

Finally an "International Research Road Map for LA/EU research collaboration in materials" and a "Report on models and mechanisms for effective EU/LA research collaboration" settle the path for the collaborative research models between both regions, willing to have an impact on key stakeholders and decision makers influencing future S&T collaborative policies, work programmes and funding mechanisms in the EU and BRAU.

Main dissemination activities

All EULASUR events have included an important compound of dissemination activities. In fact, events itself were developed aiming to target a large number of audience within the scientific community, policy makers and industry, and in some specific case civil society as well.

Therefore we should mention both Summer Schools and both Workshops as dissemination activities, and we should highlight all specific actions which have been carried out for each of these events:

- Specific websites for each Summer School and Workshop: where final report and all related documents to these vents are still available.
    - www.icmab.es/ess2010
    - www.icmab.es/ews2011
    - www.icmab.es/ess2011
    - www.icmab.es/ews2012
- Specific posters for each event
- Specific leaflets for each event

Moreover, the EULASUR website (www.icmab.es/eulasur) has been key to the dissemination of these events and of the other project activities among the scientific community.

Other specific actions have been performed such as:

- Presentation "Philosophy and Methodology in EULASUR Work-Shops" at Participatory Innovation Conference 2011, Sønderborg, Denmark
- EULASUR leaflet developed in order to describe shortly and comprehensively the project in an appealing way to institutions of the labor market in Northern Europe specially the ESS (Europeans Spallation Source) Lund, Sweden.
- EULASUR Poster presented at GENNESY International Congress on Nanotechnology and Research Infrastructures (Barcelona, 26-28 May 2010).
- EULASUR press article issued at THE RESEARCH REVIEW - 21st November -- Focus on Nanotechnologies.
- EULASUR Video released on September 2012 to the scientific community and policy makers to promote and explain EUALSUR project and its results.

Contact details

For more information about the EULASUR project please visit the project's website **www.icmab.es/eulasur** or contact with:

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