



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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D1.2 EULASUR Workshop

“From Materials to Products”

Bristol Merit Hotel, Belo Horizonte, Brazil, 7-9 April 2011

Organizing partners:

Universidade Federal de Minas Gerais - UFMG (Prof. Wagner Rodrigues)

Imperial College London - IMPERIAL (Prof. John Kilner)

Director of the Workshop: Prof. Wagner Rodrigues

Date of Preparation: June 2011

Project Coordinator: Prof. Carlos Miravittles Torras

Legal entity name: Agencia Estatal Consejo Superior de Investigaciones Científicas

Project website address: www.icmab.es/eulasur

Workshop website address: www.icmab.es/ews2011

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Summary of the Workshop

The EULASUR 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 – UFMG – and Imperial College London, jointly organized the event.

As the title of the Workshop indicates, the intention 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.

The main objective of the Workshop was to create an opportunity for the consortium members 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 broad advertisement of the event was done in the web page of EULASUR and also through e-mail marketing to universities, government agencies and industry representative bodies. The registrations rose enormously, and reached 400 applications. The selection of the attendees external to EULASUR prioritized graduation students, but also representatives of industries and government bodies were selected. There was no fee for participation.

The talks and discussions have been registered. The slides of the talks are available in the web page of EULASUR.

The total cost of the event was € 35.496,18, in its totality paid with EULASUR resources.


Corporate image

A specific corporate image of the Workshop was designed and different promotional tools developed:


Website: www.icmab.es/ews2011
(available also through project website www.icmab.es/eulasur)

From Materials to
Products
Eulasur Workshop 2011

Home Program Organizers Venue Contact



Belo Horizonte, Brazil, April 7th to 9th, 2011




Poster Leaflet

This workshop focuses on the path to be followed in order to obtain innovative products from innovative materials, taking into account their behavior, properties, availability, cost of synthesis and manufacturing methods but also issues such as environmental impact, safety and disposal. The workshop will also give special importance to the concept of innovation: Material-Design-Application. Other topics of interest would be: Metrology, Durability and Resistance.

The purpose of the workshop will be to consolidate the interactions between the researchers and other important players in the development of products from research and the development of processes on one hand and public policy issues related to research and also start-up companies on the other. It will also consolidate the existing relationships between researchers and companies in Europe and BRAU and/or giving rise and setting up new ones. Furthermore, the activities carried out during these days will be performed in order to build contacts and confidence between the researchers and economic and social actors. Representatives from interested industrial companies and from government agencies will be invited to actively participate in these workshops.

ATTENDEES

PRESENTATIONS


SUMMARY OF LECTURES AND ROUND TABLES

FINAL REPORT (available soon!)



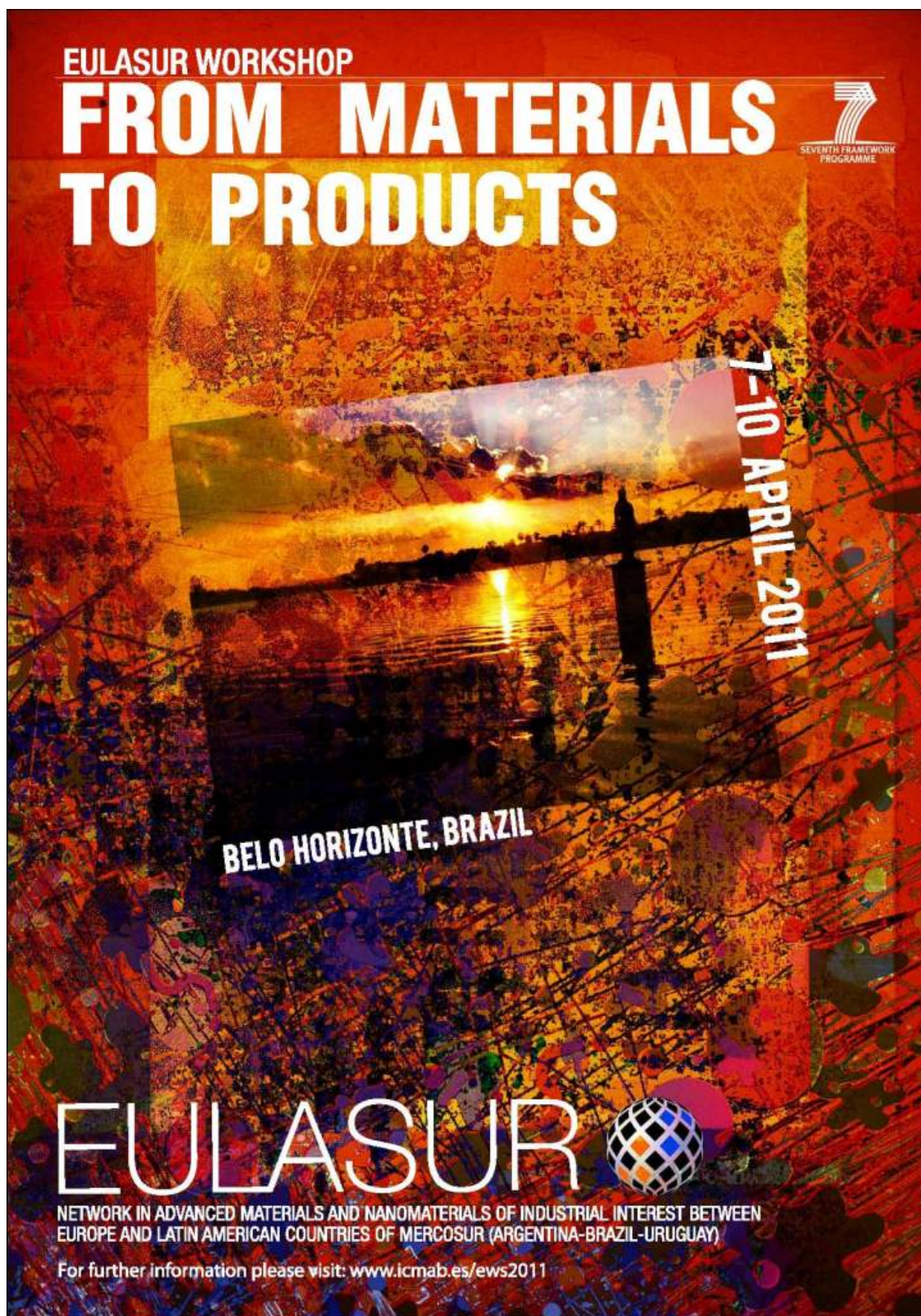
Imperial College London

Activity coordinated by




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Poster




Leaflet

EULASUR is a European funded project with an interdisciplinary globally dispersed group of researchers. EULASUR is organizing a summer school in Bariloche, Patagonia, Argentina from Sunday 3rd October to Friday 8th 2010.


The scope of the Eulasur School on "Properties and Application of Nanomaterials" is to provide a selected group of Ph-D students and Postdoctoral fellows from European and Mercosur countries, an up-to-date view of the Synthesis, Processes, Properties and Applications of Materials for Nanotechnology. The participation of young scientists creates a unique opportunity to establish strong and long standing bonds and new collaborations between the two communities.

Embedded in the summer school is a workshop for European and Latin American senior researchers. The aim of the workshop is:


- to explore possibilities for collaborative research in Nano Science and Technology, targeting EU funding
- to understand and embrace innovation
- to integrate societal issues as well as issues related to citizens



LOCATION
The event will be held at Hotel (www.) in the nice city of Belo Horizonte, Brazil





EULASUR WORKSHOP: FROM MATERIALS TO PRODUCTS



7th European Framework Programme


ORGANIZERS

COORDINATORS

Further information: www.icmab.es/ews2011

Belo Horizonte, Brazil
April, 7th to 10th 2011



Workshop Programme

EULASUR Workshop From Materials to Products 7th to 9th April, 2011

Bristol Merit Hotel - Rua dos Tamoios, 341 - Belo Horizonte - Brazil

	Thursday 07.04.11	Friday 08.04.11	Saturday 09.04.11
09:00	Opening Ceremony	Topic I Plenary	Topic II Plenary
09:30	Opening Lecture	R. Sinisterra (UFMG)	E. Saiz (Imperial College)
10:00	J. Kilner (Imperial College)	T.I L. A. Pinto (BIOAPTUS)	T.II L. O. Ladeira (UFMG)
10:30	Coffee Break	Coffee Break	Coffee Break
11:00	Topic III Plenary	T.V H. Baccarini (UNLu)	Topic II Plenary
11:30	X. Obradors (ICMAB)	T.V A. Jório (UFMG)	M. Pimenta (UFMG)
12:00	T.III J. Lourenço (Nanum)	T.V S. Garelik (ICMAB)	Topic IV Plenary
12:30	T.III N. Mohallem (UFMG)	T.V N. Trevisan (VenetoNT)	L. Lechuga (CIN2)
13:00			
13:30	Lunch	Lunch	Lunch
14:00			
14:30	Topic V Plenary	T.V F. Plentz (UFMG)	T.IV N. Casañ (ICMAB)
15:00	J. L. Briansó (UAB)	Topic V Round Table	T.IV G. Kitten (UFMG)
15:30	Topic V Plenary	E. Vilela (mod.) SECTES-MG	T.IV C.K. Saul (UFPR)
16:00	M. Theodet (CNRS-ICMCB)	O. Galante (MINCYT)	Topic V Plenary
16:30	Coffee Break	M. Neto (FAPEMIG)	B. Thomsen (EC Parliament)
17:00	Topic VI	A. Landabaso (EC Deleg Brazil)	Topic VI Round Table
17:30	CBS Team	A. S. Mendes (MCT)	Williams, Rodrigues,
18:00	N. Casañ (ICMAB)	R. A. Marques (ABDI)	L-B Rasmussen
18:30	S. Funari (DESY)	A.R. Sanchez (CDTI)	Closing Ceremony
19:00	Zamit & Pappalardo (INTA)		
19:30			
20:00			
20:30			
21:00			

What	Who	Title	From
Opening Lecture	John Kilner	<i>From Basics to Market: Ceres Power a Case History</i>	Imperial College - London/UK
Topic I: From molecules to chemical and pharmaceutical products			
Plenary 1	Rubén Sinisterra	<i>From the Idea to Products in Using the Nanobiotechnology Strategy</i>	UFMG - B. Horizonte/Brazil
Talk 1	Luiz Augusto Pinto	<i>Aptamers as bio-input to therapeutics and diagnostics</i>	Bioeptus - B. Horizonte/Brazil
Topic II: Structural materials to high-tech applications			
Plenary 2	Eduardo Saiz	<i>Structural Ceramics: What can we learn from Nature</i>	Imperial College - London/UK
Plenary 3	Marcos Pimenta	<i>Research and Development on Carbon Nanomaterials in Brazil</i>	UFMG - B. Horizonte/Brazil
Talk 2	Luiz Orlando Ladeira	<i>Carbon nanotubes structured cement</i>	UFMG - B. Horizonte/Brazil
Topic III: From ceramic materials to devices			
Plenary 4	Xavier Obradors	<i>High current superconductors: from materials challenges to large scale power applications</i>	ICMAB - Barcelona/Spain
Talk 3	João Lourenço	<i>From basic research to market: Nanomaterials</i>	NANUM - B. Horizonte/Brazil
Talk 4	Nelcy Mohallem	<i>Applications of TiO₂ and Ag/TiO₂ Thin Films in the Oil Industry</i>	UFMG - B. Horizonte/Brazil
Topic IV: From biomaterials to high-tech medical and electronic applications			
Plenary 5	Laura Lechuga	<i>Photonic nanobiosensors for high-tech diagnostics devices</i>	CIN2 - Barcelona/Spain
Talk 5	Nieves Casañ	<i>Nano-structured Electroactive Materials for Electrodes in CNS stimulation and repair. Energy and Bio.</i>	ICMAB - Barcelona/Spain
Talk 6	Gregory Kitten	<i>Mixtures of nanomaterials and extracellular matrix proteins as scaffolds for tissue engineering</i>	UFMG - B. Horizonte/Brazil
Talk 7	Cyro Ketzer Saul	<i>Polystyrene Microbeads Produced by Electrospray for Diagnostic Applications</i>	UFPR - Curitiba/Brazil
Topic V: Strategies for Innovation			
Plenary 6	José Luis Briansó	<i>Internationalization of R&D – Facing the Challenge of Globalization: Approaches to a Proactive International Policy in S&T. Country Report Brazil: An Analysis of EU-Brazilian Cooperation in S&T</i>	UAB - Barcelona/Spain
Plenary 7	Manuel Theodet	<i>Presentation of EIMM Example (European Multifunctional Materials Institute)</i>	CNRS-ICMCB - Bordeaux/France
Plenary 8	Britta Thomsen	<i>Research and innovation in the European Union seen in the light of the EU 2020 strategy</i>	EC Parliament - Copenhagen/Denmark
Talk 8	Flávio Pientz	<i>CIMINAS - Center for Micro and Nanofabrication in Brazil</i>	UFMG - B. Horizonte/Brazil
Talk 9	Antonio Arciénaga and Hernan Baccarini	<i>Case Study in Materials Innovation: Hyperion and the Nanotubes</i>	UNLu - B.Aires/Argentina
Talk 10	Ado Jório	<i>Innovation in Brazilian Universities: the UFMG case study</i>	UFMG - B. Horizonte/Brazil
Talk 11	Suzana Garelik	<i>The Research Centers in Open Innovation: Practical cases</i>	ICMAB - Barcelona/Spain
Talk 12	Nicola Trevisan	<i>How: nanotechnology can create new innovative venture?</i>	Veneto Nanotech - Padova/Italy
Round Table	Evaldo Vilela (moderator) Oscar Galante Daniel Lupi Mário Neto Borges Angel Landabaso Alfredo de Souza Mendes Rosane Argou Marques Andrés Ruiz Sanchez	<i>From Materials to Products: How to Bridge the Gap</i>	SECTES - B. Horizonte/Brazil MINCYT - B.Aires/Argentina FAN - B.Aires/Argentina FAPEMIG - B. Horizonte/Brazil EC Delegation - Brasília/Brazil MCT - Brasília/Brazil ABDI - Brasília/Brazil CDTI - Rio de Janeiro/Brazil
Topic VI: Innovation and new projects proposals			
Coordination	Leif-Bloch Rasmussen and Janni Nielsen		CBS - Copenhagen/Denmark
Proj Nanohouse	Nieves Casañ	<i>NANOHOUSE</i>	ICMAB - Barcelona/Spain
Proj In-situ SAXS	Sergio Funari	<i>In situ SAXS studies on porous materials Silica, Organosilica and metal organic Frameworks (MOFs)</i>	HASYLAB/DESY - Hamburg/Germany
Proj cattle diseases	Ana. Lluara Zamit and Juan Sebastian Pappalardo	<i>Nanotechnology based portable devices for monitoring cattle diseases</i>	INTA - B.Aires/Argentina
Proj Surface Sensors	Stephan Roth	<i>Polymer metallic nanocomposite for surface sensors</i>	DESY - Hamburg/Germany
Round Table	Federico Williams Wagner Rodrigues Leif-Bloch Rasmussen	<i>The scientific and technical collaboration between EU and BRAZ</i>	UBA - B Aires/Argentina UFMG - Belo Horizonte/Brazil CBS - Copenhagen/Denmark

Summary of lectures, Round Tables and other activities

Thursday the 7th

9:20 - Opening ceremony

Different hot topics were discussed, where the international collaboration were remarked. In this context nowadays (at the time of this conference) is a good moment for Brazilian science.

As a principal aim of EULASUR is important the collaboration between European Union (EU) and Latin American (LA) MERCOSUR countries for a real application of science: From periodic table to nanoscience and nanotechnology.

9:42 - J. Kilner

Fuel cells (FC). A good review of History, Efficiency (comparison with heat power) and Different fuel cells was given. He talked about Solid Oxide Fuel Cells (SOFC) with YSZ as electrolyte.

As an example of FC he talked about doping zirconia with Yttrium creating vacancies at the lattice that allow the ion movement.

Final product: Ceres Power Metal Supported SOFC.

Comparison with anod supported cells: better mechanical properties manipulation (less rigidity) but lower Working Temperature.

One CHP application: A conventional heater (CHP instead gas). Cleaner results (less CO₂ emission - 1.5 ton) with 10 - 15 years of life.

10:29 - Coffee brake

11:05 - X. Obradors

High Current superconductors: from materials challenge to large scale applications.

Superconductivity is in continuous evolution.

For applications (basically high magnetic fields) YBCO is one of the best options due to its high J_c value (J_c is the value of maximum current transport without dissipation).

Real applications of YBCO: 2nd generation of superconductors wires, the coated conductors.

The principal problem is not their complex architecture. You have very good results but you have to put down costs. For that, it is really necessary an extensive analysis of the materials (structure, architecture, etc.), pushing physics to look for better applications properties.

But why should we use superconductors? The magnetic application range is higher for generation (than any) as well as much sensitive for detection (than any).

For the future, superconductivity will be present in any step of electricity cycle (generation, transport and applications).

Superconductor cables advantage: They present higher capacity, they generate less environmental impact, they transport the same power at less voltage whit 10 times less losses than Cu cables.

There are several applications projects in mind (energy transport, generators, transport vehicles, magnets for fusion, improve air transport vehicles, among others).

Application economy: Better behaviors in longer (> 1Km) and cheaper cables.

Application limits: It is not a problem the working temperature but the application properties at the present working conditions.

12:09 - J. Lourenço

From basic research to market.

Product on demand:

- Magnetic ink: Develop of magnetic particles and (as a 2nd product) production of magnetic ink. It derived into anticorrosion paint, thermo-chromic paint, self-cleaning and biocide varnishes/coating & semi-conductive and conductive transparent ink.
- Cement: Improve the application properties of clinker adding nanoparticles. Nanotechnology is used to reduce costs.
- Nanovaristors: Improving applications properties developing new systems.
- Nanopolish: For optical restoration.

As an opinion of the speaker: It is important to go out of the laboratory and watch what the market nedeeds are.

About local government financial support: Brazilian government is focus on national products in a technology and innovation way supported.

12:47 - N. Mohallem

Application of TiO₂ and Ag/TiO₂ thin films in the oil industry

Nanoparticles recovering clement (thin films) for self-cleaning, bactericide and protect pipes.

Steps followed: Characterization, bactericide test (with particular bacteria), hydrophobicity test (contact angle analysis for H₂O at different growth conditions)

13:03 - *Lunch*

14:35 - *J. L. Briansó*

A governmental analysis of LA - EU transfer technology.

- Participation of LA in EU projects: Brazil has a really good participation in EU projects, finding that Uruguay presents an excellent rate of participation in function of its population. On the contrary Mexico, with a huge population, has a lower participation; even lower than Argentina.

- Mexico agreements on science and technology: There are a lot of opportunities in Mexico due to their good quality research centers as well as the Mexico-EU relationships, but a big threat is the lack of interest from Mexico (low time and found inversions, low private participation, no long term science policies, etc.).

- EU analysis (by CREST) of a pilot LA case - Brazil - : Different analysis (Brazilian social, economical and environmental needed; EU-Brazil relationships & common hot topics) say that Brazil is a strategically good partner leader in the region (including industry). Science, Technology and Environmental areas are common important items, declared of great importance for Brazilian government.

15:42 - *M. Theodet*

EMMI is an institute than promote science in a delocalized way, with around 250 researchers in all EU (~10 universities and ~18 research institutes) and a strong connection to private sector (long term ties).

FAME master is a program focused on intercommunication and exchanging of first year PhD students (master thesis).

16:12 - *Coffee brake*

16:50 - *J. Nielsen*

Science and innovation: 3 previous steps for society analysis are needed (Information, knowledge and networked). That is important because science have to be at society service, answering questions for a society that nowadays is in continuous change.

The future is a frame of interdisciplinary networks. Future is science and technology.

In the next sessions will be presented some projects for illustrate this idea.

17:10 - *L. B. Rasmussen*

Bridging the welfare equation.

It is presented a model of networking innovation.

17:33 - *N. Casañ*

Nano-Home. We (human being) have spent in a few hundred of years natural resources than earth takes millions of years in produce.

- Hose concept: It is a symbol of life (personal, social, economical, etc.). It is a brick in the city wall, and is itself a network of fundamental bricks (values, economy, interests, knowledge, etc.).
- Nano concept: It is a symbol of innovation in science and technology.
- Nano-Home concept: It is a symbol of future, a symbol of solutions for a future taking in account the present.

17:48 - *V. Rebbin*

Analysis of porous in silica. From one simple synthesis molecule they can obtain results for more complex mechanisms (as for example a gas adsorption sensors).

18:11 - *A. L. Zanit and J. S. Pappalardo*

The project implies the develop of a dispositive for monitoring and control the disease of cattle using molecules. It will be necessary different professional lines: science (nanotechnology), law (legal and social aspects), funds (private and governmental), etc.

18:27 - *L. B. Rasmussen*

Close of the project round. There were exposed 3 different projects but each one implies a closing collaboration in a multidisciplinary network.

Friday the 8th

9:10 - *R. Sinisterra*

Nanobiotechnology applied for health.

- For university area drug development is one of the main focuses, with a broad range of applications from human to animal.
- Some application examples: Arterial pressure control (better results for put down heart pressure, control of high cardiovascular pressure), adhesive deontological systems (bacterial reduction for a live analysis at 45 days results).

9:58 - L. A. Pinto

Aptamers. Diagnosis and therapeutics.

Applications (directly related to blood analysis). Improve results of fluorescence detection of DNA.

10:17 - Coffee break

11:04 - A. Arciénaga

From material characterization to innovation. Carbon nanotubes.

A historic line of a specific industry evolution (where even the 1st EEUU carbon nanotube patent appears).

11:42 - A. Jorio

- Analysis of science, technology and innovation in Brazil, in function of technology innovation nucleus and companies.

As technological innovation group Minas Gerais is one of the most important due to their university quality.

- Examples of real technology transference: New running shoes compose, animal vaccines, mosquito control. New project that include a multidisciplinary group with benefits for science and industry.

Technology transfer is the clue.

- A Brazilian analysis of laws about technology transfer.

12:07 - N. Trevisan

Technology transfer. Nanotechnology.

They promote new projects with open calls to innovative start-up companies / industries / enterprises. They take as an important basement their own experience (time tables, financial supports, multidisciplinary analysis).

12:44 - Lunch

14:38 - F. Plentz

CMINAS concept: Research, development and technological industrialization. Science at the service of industry (provide ways for large scale science application).

One of their actual focuses is energy with an important market analysis that shows an important needed of technology applied to electricity market.

15:18 - Round table. Strategies for innovation.

Individual contributions of all the 7 invited speakers.

15:22 - A. Landabaso

Obvious facts: World is changing. Nano- is a revolution. Brazil is growing in a science and technology point of view.

Possibilities: Intercommunication programs are the key for answer the Brazilian needed. In this context cooperation with Brazil is now.

EULASUR is an excellent project, an excellent cooperation idea. But it opens doors for a real analysis of LA opportunities. Brazil is in, but it is time for ask ourselves what is the better options about LA countries choose, what should mean "LA" (MERCOSUR, Brazil, Latinamerica, just particular regions of Brazil).

15:35 - O. Galante

15:45 - D. Lupi

Argentinean Nanotechnology Foundation (FAN).

Argentina is waking up to nanotechnology with knowledge and infrastructure enough for an active participation.

Innovation (society needs) + flexibility (applications) = market (solutions)

16:01 - M. N. Borges

Strategies for innovation.

Brazil has a good scientific production but a low innovation rate (low application of scientific results).

Application should be mandatory but with clear rules. Part of innovation is improve low and bureaucratic system.

16:20 - R. A. Marques

Innovation and competitiveness: the challenge of cooperation.

Brazil is a young country with a positive perspective on investment, but is necessary to generate policies according to market needs.

16:42 - A. S. Mendez

Historical remark on science, technology and innovation. Brazil has a short history but with some examples of really good results.

Due to strong restrictions (social and governmental) it is necessary a strategic plan:

- Improvement of the system.
- Promotion.
- Strategy.
- Social application.

Nowadays Brazil is trying to join private sector with science, technology and innovation policies.

17:03 - A. R. Sanchez

17:14 - Coffee brake

17:40 - Round table

- Solutions are needed and in that way before a perfect plan ideas are necessary.
- Today results of research exist. Research really works well. The inconvenient is at the time of real application. There is no a consistent system for support application lines. There is no support (economical, ideological, legal, governmental, social, etc.).
- There is a misunderstood between industry and scientist for the "project" concept. For industry a project has an economical benefit balance. For scientist a "project" is that industry calls "financial support".

Saturday the 9th

9:10 - E. Saiz

Ceramic applications: Orthopedic (human body).

Bones, as well as (for example) nacre, are ceramics. But they are all the time in a continuous self-regeneration.

In 2-D an artificial ceramic growth is possible, but the important applications are for 3-D ceramics. In that case two aspects are really important: the growth method and the growth organic framework.

So the artificial nacre is possible. A polymer growth is possible in an ice framework that they can control perfectly.

After these results with ice, a new configuration is obtained in a Coke-like framework. The lamellar-like growth is changed for a cellular-like growth.

At the end it is possible to improve the strength properties changing the growth framework, with even better results than for nacre.

10:03 - *L. O. Ladeira*

Nanotechnology is now at the science twister eye. Cement is a real industry. This both components together could help world providing better solutions for industry in a green way.

The idea is to growth carbon nanotubes in situ the portland fabrication process.

Good results for carbon fibers in clinker (rate diameter/length).

10:36 - *Coffee brake*

11:07 - *M. A. Pimenta*

Carbon nanotubes have a broad market. Their development in the last 5 years has been really important (in 2nd place after Ag).

In this context the INCT comes into play with some goals: Its work with nano-tubes, fullerenes and graphene. It participates on financial contributions, company interactions, patents, conferences, etc. It provides possibilities of direct application of products to industry.

But for a clear range of application it is really important an extensive study of properties.

Due to the broad range of applications it drives necessary a new project, that is the Center od Technology in Nanotubes. It is a multidisciplinary center focused on products, processes and services.

Under these conditions it is possible to compete in the world market.

12:01 - *L. M. Lechuga*

- Talk focus on devices.

- Objective: Solve problems in diagnosis area (small sensors with a very fast response).

Lab-on-a-chip sometimes does not include the processor and the detector in the same unit. In that way there is a good and broad market.

The idea is work with biosensors, using optical transducers. But the most critical part of the fabrication process of this device is the "how to introduce the biological receptor?".

Final product (an analysis unit) is a good detector for different illness. But a better sensitivity is required, and these dispositives are able to create with good perspectives of applications (emergency, medical and home frameworks).

It is possible to go from "chip-to-a-lab" to "lab-on-a-chip".

- Starting a Spin-off: You need not just the great idea and the infrastructure but a strong financial support and the assistance of a business group.

14:40 - *N. Casañ*

Nervous systems and electroactive materials. Cell restoration is possible but correct substrate materials are needed. Electroactive materials are the solution, but two options are possible: oxides and polymers. A good and extensive analysis will give us the answer.

15:13 - *G. T. Kitten*

The growth of cellular elements is possible, but a good analysis of substrate is necessary. 2-D and 3-D substrate give us different possibilities. To use chicken embryo hearts help us to found key answers. Real alive observation in an artificial neighborhood allows the study of interdiffusion of cells to the gel medium.

15:46 - *C. K. Saul*

Sprayed gels as detectors.

An analysis of sprayed conditions is important for a good analysis of detector films formation as detectors.

Basically it is possible, in a very control way, to applied biological systems in an in-situ way using a spray methodology (easy to transport and cheap to produce) with some application constrains basically marked by external factors (pressure, humidity, etc.).

16:12 - *B. Thomsen*

Some topics are important for EU and it is important for them to work with partners that promote these topics in the same conditions.

- Recycle. As a mandatory objective it is necessary to recycle 100% of products.
- Unemployment and efficiency.
- Gender equality. Even at work conditions where nowadays just 20% of employments are occupied for women.

17:20 - *Coffee brake*

17:39 - *Round table (L. B. Rasmussen and W. N. Rodrigues)*

- When we have to take part of some things (maybe like EULASUR workshop) it is important to know that there are problems complicated enough for stay out of our solution possibilities.
- During this workshop there were no agenda, no action plan, no declaration of policies, no coordination action and neither any explicit action for a coordination in the way of put science

in an active materials to product way, but this does not mean necessary that the workshop was not working in that way, continuing with previous meetings (one in Bariloche on October of 2010) and expanding the EULASUR project to future.

- EU support LA projects that will include primary need solutions, but Brazil is the 8th economy in the world. LA is ready for real competition at global market and seems like EU is not ready for open their eyes to that.

18:24 - *The end*

Conclusions

The objectives of the workshop were partially fulfilled, with increasing in the contacts among the EULASUR partners, and with the discussions at the level of the participant authorities of the research financing agencies about the policies and strategies fostering innovation.

Proposals of joint projects need yet to be matured, in a process that will continue in the next EULASUR Summer School to happen next September 2011 in La Plata, Argentina.

On the other hand during the Work-Shop was very clear that moving from new materials to innovative products is not easy. With the exception of some examples (John Kilner, Xavier Obradors, etc....) without the industrial support and without very large amounts of funding, it is not possible to move from the material to an innovative prototype and from it to the market.

Therefore, we conclude that from both the EC, and the emerging countries like Brazil, Argentina, etc., it is necessary to draw precise road-maps, which define the social and political priorities (energy, medicine and Health, etc...) and therefore, give priority to the study, development and engineering of some of the possible materials and nano-materials that can provide substantial improvements in conventional markets.

Despite this scenario, further efforts are needed to generate very broad substrate knowledge in the field of science and engineering of materials that can be easily used by small and medium-sized enterprises which are the ones who finally force large multinationals to incorporate new materials.

The presence throughout the whole Workshop of scientific and technical representative of the EC in Brazil, Mr. Landabaso, was extremely positive, underlining to both the Brazilian federal authorities and especially the state of Minas-Gerais, that EC generally and in all their projects, tries to act in full coordination in areas such as technology transfer, big research infrastructures, etc... While it was also clear that the different European states also act as the Brazilian federal states with their own science policy.

In the field of characterization and preparation of new materials and advanced hybrid nano materials, it is necessary to count with expensive and complex infrastructures. Advances in this field cannot be split from the easy and simple setup of large facilities such as clean and semi-clean rooms, high pressures and high temperatures, with equipment of in-situ characterization, able to characterize real-time structural changes materials and hence their properties.

Strong sources of synchrotron light, neutrons, etc.. are needed for the characterization of new and advanced materials. The idea of schedule, coordinate and build together, between EC countries and BRAU countries this type of equipment was widely discussed.

Finally, it was thought that as a first step, it would be good to organize common Summer Schools for the training of BRAU and Europe young researchers. Thus, the need of looking for funding to organize a Summer School was clear. This Summer School on X-FEL (Free Electron Laser Europe) currently under construction in Hamburg, would be held in principle in Barcelona in the surroundings of the ALBA Synchrotron, and would be organized by DESY and other European partners (CSIC, UAB, CNRS, etc...).

Annexes

List of participants and attendees available at: www.icmab.es/ews2011

Presentations delivered available at: www.icmab.es/ews2011

Pictures





