Dear partners,

Below you can find the first issue of the new Minatuse Newsletter.

With this Newsletter we want to inform our partners about Minatuse activities and announce relevant news about upcoming calls for proposals, events, partner searches etc.

In this first issue, we start with a short introduction to Minatuse and we welcome our new partners NanoHouse and Dex with a presentation of their activities. A very useful item for all of us is the overview of the active calls within the FP7-NMP programme of the EC (page 5-6). The Integrated Project "Nanoker" is presented as a case of a running EC-project. We plan to end each newsletter with a list of upcoming events.

The Newsletter is supposed to be an open communication medium within the Minatuse network and therefore we look forward to your input for the next issues (announcement of events, partner search, case studies, projects withs SMEs etc…). Feel free to forward this newsletter to your contacts interested in the field of micro- and nanotechnology.

Please don't hesitate to contact us for any further information and to send your contribution for the next issues of this Newsletter.

With kind regards,
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www.minatuse.org

MINATUSE Newsletter

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Summary

Introduction to MINATUSE

MINATUSE : Europe brings nanotechnology to SMEs

The European Community wishes to improve the transfer of micro-and nanotechnologies to European SMEs. To achieve this goal, a network of 10 European research institutes and technology transfer organizations has been assembled. This European networking initiative MINATUSE - "Micro-Nano Technology Use by SMEs"- has been granted the Eureka label. The MINATUSE partners are funded through national financing programs.

MINATUSE aims at the transfer of emerging micro-nanotechnologies knowledge to European SMEs. Its participating Research Centers and Technology Transfer Organizations will carry out assistance and guidance missions for European SMEs in order to achieve this objective.

The MINATUSE Consortium's main tasks are:

- Disseminating information about progress in European micro-and nanotechnology research towards SMEs
- Mapping of micro- and nanotechnology in Europe
- Activities to stimulate, increase and facilitate the participation of SMEs to European RTD projects
- Creation of a European network of assistance for SMEs with micro-nano technologies needs

Minatuse partners :
Grupo DEX (Spain) - IMEC (Belgium) - IMEL (Greece) - IMT (Romania) - InnovaTech (Belgium) – ISSP (Latvia) – Nanohouse (The Netherlands) - RR&CO (Slovenia) - SIRRIS (Belgium) - VITO (Belgium)

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New partners

In this section we want to place our new partners in the spotlights.
This time: NanoHouse and DEX.

NanoHouse strives to bridge the gap and realize technology transfer between knowledge institutions and businesses in the triangle Aken (Germany), Eindhoven (Netherlands) and Leuven (Belgium).

Our main aim is to inform businesses of the opportunities using nanotechnologies. We are creating links between business activities and experts in nanotechnology in business development. NanoHouse now runs a number of pilots are ongoing in different sectors to investigate the different ways to bring nanotechnology into practice. The intention is to develop applications by linking scientific researchers and applied researchers. Furthermore special events are organized to communicate the opportunities of nanotechnology.

NanoHouse concentrates on a number of well established sectors including food, smart materials, automotive, and life sciences but invites all business to connect to our network to explore the potential of nanotechnology for your business.

More information: www.nanohouse.eu

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DEX Ltd (Desarrollo de Estrategias Exteriores, S.A.) is a specialised International Consulting Agency which provides services to private companies and the public sector in the fields of European Union Affairs, Strategic Planning, Local Economic Development, Foreign Markets & International Relations.

DEX structure

DEX has got a flexible and highly competitive structure, formed by a multidisciplinary team of experts in law, trade and economy, with a long experience in international relations and a profound knowledge of the multilateral organisations and institutions procedures.

In the meantime, DEX continues to develop a large network of renowned external collaborators specialised in different fields, who co-operate depending on the different contracts that have to be executed.

Likewise, the Directors and consultants of DEX take part in different bilateral Committees of the Spanish Council of Chambers of Commerce and in the Cross Country Club, a group of European experts, gathering a wide diversity of nationalities, languages, themes, expertise and professional experiences.

DEX: a factory of ideas

One of the characteristic aspects of DEX is its philosophy and strategy of activity diversification. Beyond the simple entrepreneurial project, DEX aims to be a permanent generator of innovative ideas and initiatives. Among the projects being developed by DEX, we could mention the creation of e-government systems, the development of business centres, the introduction of quality plans, the development of multicultural projects, the innovation on training methodologies or the prevention and pacification projects in conflict areas.

European Union

It is a matter of fact that the actions of the EU Institutions affect the day to day work of administrations, companies and individuals. The European integration generates new challenges that can not be addressed from traditional perspectives.

DEX offers services to their different clients, comprising public institutions and companies, including:

- Personalised information and reports on the Acquis Communautaire and on the access to the E.U. funds;
- Generation and follow-up of requests for funding.
- Management and Evaluation of projects financed by European funds.

Since its creation, DEX has participated in the different phases of the generation, evaluation and management of European projects in the framework of the following programmes and initiatives financed by EU Funds: Territorial Cooperation and Interreg, Urban, Leader and other Rural Development, Equal, Culture 2000, and others.

Strategic Planning & Local Development

The elaboration of studies and strategic analysis, under different headings, is one of the main instruments for promoting socio-economic development and to help public authorities to adapt their policies and action, and to assess their spatial and environmental impacts. These planning tools have a wide range of application, from a geographical and sectorial point of view: economic development, spatial planning, employment, or tourism promotion.

DEX can call on highly specialised teams to carry out research in the following areas:

- Elaboration of Strategic Plans.
- Elaboration of Local Economic Development Strategies.
- Analysis of Proposals for the development of new economic activities.
- Feasibility studies and identification of external funding sources.
- Structural and Socio-economic Impact Studies.

DEX Group, through Instituto CIES, its newly created economic and technology consultancy branch, has produced carried out documents for local and regional entities in different spheres, such as: regeneration of urban areas, development of rural areas, support to SMEs, tourist development strategies, museums and other cultural infrastructures, economic feasibility and funding of transport systems and infrastructures, impact in protected spaces.

Innovation and International Cooperation for SMEs

One of the latest developments was the creation in 2007 of a specialised department, named I+DEX. This department's main objective is to assist, counsel and coach small and medium size enterprises with an innovative attitude towards international collaborative endeavours –especially as related to FP7 and other international programs

Active calls in FP7-NMP

In this article we give a comprehensive summary of the calls related to Nanosciences, Nanotechnologies, Materials and new Production technologies (NMP) launched by the European Commission on the 30st of July 2009.

From those calls, 6 of them are directly in relation with the NMP work program, and 4 others are linked also to other programs. We give here below their identifier (from which you can find them directly on the European Commission web site www.cordis.lu) a short description and the deadline.

NMP calls:

FP7-NMP-2010-CSA-4
Coordination and support actions in the following topics:

- Nanoscience and converging sciences: NMP.2010.1.1-1: Support to dialogue and engagement for responsible social acceptance of nanotechnology – coordinating actions.
- Integration of technologies for industrial applications: NMP.2010.4.0-5: Support to coordination activities of NMP related European Technology Platforms –coordinating actions
- Integration of technologies for industrial applications: NMP.2010.4.0-6 Organisation of events related to the Presidencies of the European Union – supporting actions

Deadline: 02/02/2009, single stage procedure

FP7-NMP-2010-EU-Mexico
Small or mediumscale focused research projects, cooperation with Mexico in the following topics:

- Nanosciences and converging sciences: NMP.2010.1.2-4: Adding Value to mining at the Nanostructure level.

Deadline: 15th of December 2009, single stage procedure

FP7-NMP-2010-LARGE-4
Large Scale integrating collaborative projects in the following topics:

- Health, safety and environmental impact: NMP.2010.1.3-1 Reference methods for managing the risk of engineered nanoparticles
- Novel biomaterials and bioinspired materials: NMP.2010.2.3-1 Development of standard scaffolds for the rational design of bioactive materials for tissue regeneration.
- Advances in chemical technologies and materials processing: NMP.2010.2.4-1 New materials and/or membranes for catalytic reactors.
- Rapid transfer and integration of new technologies into the design and operation of manufacturing processes: NMP.2010.3.4-1 Manufacturing systems for 3D-shaped, multilayered products based on flexible materials
- Integration of technologies for industrial applications: NMP.2010.4.0-1 Development of nanotechnology-based systems for detection, diagnosis and therapy for cancer.
- Integration of technologies for industrial applications: NMP.2010.4.0-2 Capacity building for the development of nanotech-based multiparameter sensors.
- Integration of technologies for industrial applications: NMP.2010.4.0-3 High throughput technologies for the development of formulated products

Deadline 8 December 2009 for the first stage (two-stage procedure).

FP7-NMP-2010-SMALL-4
Small or mediumscale focused projects on the following topics:

- Nanosciences and converging technologies: NMP.2010.1.2-2 Substitution of materials or components utilising "green nanotechnology"

- Nanosciences and converging technologies: NMP.2010.1.2-3 Thermoelectric energy (TE) converters based on nanotechnology
- Knowledge-based smart materials with tailored properties: NMP.2010-2.2-1 Organic-inorganic hybrids for electronics and photonics
- Using engineering to develop high performance knowledge-based materials: NMP.2010.2.5-1 Modelling of degradation and reliability of crystalline materials
- Development and validation of new industrial models and strategies: NMP.2010.3.1-1 New industrial models for a sustainable and efficient production

Deadline: 8 December 2009, first stage (2-stage procedure)

FP7-NMP-2010-SME-4
SME-targeted collaborative projects in the following topics:
- Nanotechnologies and converging sciences: NMP.2010.1.2-1 Novel tools integrating individual techniques for real time nanomaterials characterisation – SME
- Integration of technologies for industrial applications: NMP.2010.4.0-4 A new generation of multi-functional fibre-based products produced by new and flexible manufacturing concepts – SME

Deadline: first stage 8 December 2009 (2-stages procedure)

FP7-NMP-2010-EU-USA
Small or mediumscale focused research projects, cooperation with USA in the following topics:
- Health, safety and environmental impact: NMP.2010.1.3-2 Modelling toxicity behaviour of engineered nanoparticles

Deadline: 30th of November 2009, single stage procedure

Other calls related to NMP:

FP7-ERANET-2010-RTD
ERA-Net for the integration of technologies into industrial applications, in the following topics:
- NMP.2010.4.0-7 ERANET on Nanotechnologies, including Nano-toxicology
- NMP.2010.4.0-8 ERANET on Manufacturing
- NMP.2010.4.0-9 ERANET on Catalysis

Deadline 19 January 2010.

FP7-2010-GC-ELECTROCHEMICAL-STORAGE
Collaborative projects from programs NMP 2010-1 and Energy, Environment and transport, on the topic:
- Collaborative research on Materials, technologies and processes for sustainable automotive electrochemical storage applications

Deadline: 14 January 2010

FP7-2010-NMP-ENV-ENERGY-ICT-EeB
Collaborative projects for energy-efficient buildings in the following topics:
- EeB-NMP.2010-1: New nanotechnology based high performance insulation systems for energy efficiency
- EeB-NMP.2010-2: New technologies for energy efficiency at district level

Deadline: 3rd of November 2009 (1 stage)

FP7-2010-NMP-ICT-FoF
Factories of the Future 2010, collaborative projects on the following topics
- FoF.NMP.2010-1: Plug and Produce components for adaptive control
- FoF.NMP.2010-2: Supply chain approaches for small series industrial production
- FoF.NMP.2010-3: Intelligent, scalable, manufacturing platforms and equipment for components with micro- and nano-scale functional features

Deadline: 3rd of November 2009 (1 stage)

Nanoker: an Integrated European Project on Structural Ceramic Composites for Top-End Functional Applications

Nanoker, a 4-year Integrated European project, was gathering 17 partners, during 4 years, ending in April 2009. The overall objective of this project was to incorporate nano-particles in ceramics to improve their properties and develop new applications with enhanced performances. One of the applications fields (biomedicine) is presented here below.

The other main applications fields were "Optics" and "Extreme conditions". You can find their description on www.nanoker-society.org

1 APPLICATION FIELD: BIOMEDICINE

Objectives:

Hip prostheses development with a lifetime higher than the life expectancy of patients and with a larger range of designs. In order to fulfil this objective thinner acetabular cups and/or smaller femoral head diameter components based on dense high resistant and biocompatible ceramic nanocomposites will be developed.

Ceramic knee and dental implants able to withstand in-vivo mechanical loading, even under critical situations. In order to fulfil these objectives (higher reliability and risk of failure to that associated with holder prototype ceramics), it is necessary to work on ceramic based materials with extended mechanical properties, as for the Hip products, but also necessarily and specifically on component design and process development.

Translucent nanocomposites for **dental devices**. The requirements regarding mechanical properties are very similar to that mentioned above but it has to be transparent or translucent materials. Joining techniques with enamel and other ceramic systems have to be developed.

As an example of the work realized throughout this program, the contribution of the research institute SIRRIS, in Belgium, is described here below

Contribution of Sirris in the IP Nanoker project

Sirris has developed a Material adapted to the medical application field.
This material can be processed by the additive technique OPTOFORM. Starting from a 3D file, a part is built on a plate slice by slice from bottom to top. Each succeeding slice is formed by spreading a coating or layer on a plate recovered with a polymer paste which hardens when scanned by a UV laser beam. This paste is filled with ceramics (about 50% in Vol). After processing the part is debinded (in order to eliminate the organic compounds) and sintered in order to produce a dense part.

This first composition is a mixture of sub micronic alumina containing 10% of nano ZrO2. The first prototypes of knee prosthesis have been sintered by INSA of LYON under natural sintering conditions and we obtained very good results

- Parts are sintered up to 97-98%
- Mechanical properties (flexion) of the micro-nano composite system are 200MPa higher than micronic system

Sirris was also involved in the application field Optics. Our objective is the building of complex parts in SiC by the same additive techniques: the OPTOFORM.
The composition of the material is complicated it is including a complex photoinitiator – coactivator systems. The filler is a mixture of micronic SiC, Submicronic αSiC, Nano SiC (Hubei) and Yttrium Aluminium oxyde
The sintering was performed under natural sintering condition by FST Système GmbH.

The results were quite encouraging :

- No crack during debinding and sintering, no deformation
- Parts are sintered up to 88%.

Sirris would like to continue this research by increasing the concentration of SiC in the green and thanks to new collaborations.

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Events

Sirris Materials Day 2009, 22/10/09 Brussels
http://www.materialsday.be/EN/index.php

i-SUP Conference - Innovation for Sustainable Production, 18-21 April 2010, Bruges
http://www.i-sup2010.org/