NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS & NEW PRODUCTION TECHNOLOGIES

Per informazioni Faya Mirzajamalova - mirza@apre.it

Riferimento: NMP7-EU-LCP-2

Data Scadenza: 04/05/2007

Programma: NMP

Titolo: Novel materials tailored for extreme conditions and environments (NMP-2007 2.5-1)

Tipo Progetto: Large Collaborative Project

Descrizione: MAIN OUTPUT
- Metallic materials with improved resistance to corrosion, wear, tribocorrosion, high temperature oxidation;
- New fabrication technologies;
- New models of transformation of surface layer into nanocrystalline and amorphous structures;
- Models of degradation of nanocrystalline surface layers of different materials by corrosion processes or by joint action of mechanical and chemical factors;
- Computer tools for estimation of relations between structure of surface layers, their mechanical and physical properties and behaviour in conditions of varying stresses, strains and environments;
- New and improved test methods;
- Expert system for lifetime prediction.

SOCIETAL/ENVIRONMENTAL OBJECTIVES
- New knowledge permitting designing and fabrication of new nanomaterials;
- New products, concurrent on the world market;
- New fabrication technologies, concurrent on the world market;
- Longer lifetime of a number of products;
- Improved security and reliability of offered products.

PRINCIPAL OBJECTIVES AND SUB-GOALS
- Development of laser technologies permitting to obtain structural materials with improved surface properties;
- Development of pulse-mechanical technologies permitting to obtain improved structural materials;
- Development of hydrogen-related technologies permitting to obtain improved structural materials;
- Elaboration of new generations of Al, Ti, Cu, Co, Fe-Al and Ti-Al alloys;
- Elaboration of a model of creation of nanocrystalline structure in conditions of surface melting and fast cooling;
- Elaboration of a model of creation of nanocrystalline structure in hydrogen charged Ti alloys;
- Development of mathematical tools of optimisation of properties of surface layers;
- Development of mathematical tools for complex analysis of interrelations between factors influencing the implant corrosion and lifetime in conditions of joint action of mechanical loads and human fluids` environment.

Partner richiesto:
- Industrial partners of the considered industrial sectors: Energy Production, Chemical, Petrochemical, Aerospace
- Small or medium enterprise (SMEs)

Per informazioni: Faya Mirzajamalova mirza@apre.it

Riferimento: NMP7-EU-LCP-1

Data Scadenza: 04/05/2007

Programma: NMP

Titolo: NMP-2007-3.5-1: Processes and equipment for high quality industrial production of 3-dimensional nanosurfaces

Tipo Progetto: Large Collaborative Project

Descrizione: a) 3-dimensional nanostructuring of semiconductors and polymers with our ion beam facility
b) Ion implantation
c) Characterization of nanostructured materials (RBS, XPS, ERDA, PIXE)>

Tipo Ente: Università>

Partner richiesto:
NMP WP topic: NMP-2007-3.5-1
Project type: Large scale integrating Collaborative Project>

Per informazioni: Giovanna Maracchia - maracchia@apre.it

Reference n.: **NMP7-EU-LCP-3**

Deadline: 30/08/2007

Programme:

Project Title: U-LIFE - User-centered life-cycle: comprehensive user-centered SME innovation for products and product services

Financial Scheme:

Description: SCHEMA DI FINANZIAMENTO: 'COLLABORATIVE PROJECT A BENEFICIO DELLE PMI'

The present project is addressed to the furniture industry and more concretely to allow the customer interaction in all the phases of the product life cycle.
The actual manufacturing process of the furniture industry involves a large number of different professionals (designers, architects, plumbers, retail dealers, OEMs, SMEs, etc…) and is composed by a complex chain containing an elevated number of steps from the customer to the fabricant.
Such manufacturing process currently means undesirable risks that entail time and resources costs for the SMEs, produced by the lack of a tool that allow a fast flow of data all along the fabrication chain.
The objective of the project is focused on obtaining added-value user centered products and products services by the development of specific tools, facilities and systems that will facilitate a fluent and fast communication among all the links of the production process, allowing the integration of the customer in all the phases of the product life cycle.
The development of such tools and facilities must include adoption of computing devices (mainly software for product design process), involving into the process software designers. These computing devices must be of easy use, no specific skills or experience being necessary to use them.
The project will produce also guidelines for SMEs that addresses the full range of opportunities and challenges arising from direct interactions with customers
The impact of this project will give important benefits in time (70%) and cost (20%) reduction to the customers, fabricants, environment and society.
The consortium had a good balance between research institutes (2), universities (1), industry (2), SMEs (5) and final users (1). These partners cover all the value chain: retailers (1), suppliers of products (4), technology suppliers (5) and system exploitation (2).

Organisation Type: Centro di Ricerca

Partner Sought: We are looking for partners for the U-LIFE project consortium with the following profile

 Industrial (manufacturers) or service (retailers) companies from the furniture sector (kitchen furniture)
 The manufacturer should be an OEM (kitchen furniture manufacturer) with ICT capacities (CAD, ERP, etc.).
 The retailer should be a company that helps customers during the kitchen design process. Also should have ICT capacities for the kitchen design, kitchen delivery management, etc.
 Both companies should be SMEs
The role of these partners in the project will be:
 They are going to play the role of user of the system (industrial user and retailer user). That implies that they are going to give user requirements for the system and validate the development of it in the demonstration tasks.

Per informazioni: Giovanna Maracchia - maracchia@apre.it

Riferimento: **NMP-IT-ERANET-1**

Data Scadenza: **25/07/2007**

Programma: Nanotecnologie, materiali intelligenti e nuovi processi produttivi

Titolo: Women, work and quality of life.

Tipo Progetto:

Descrizione: Our project spring out from previous searches and valuations that showed how, in determinate functions and working sector, the absenteeism, the presence of occupational accident, medical drugs, the physiological modifications correlated to biological changes involve neurobehavioral and neuropsychic effects that compromise the work productivity and produce a global decline of life quality.

Tipo Ente: Università

Partner richiesto: University, General Hospital and Agencies of Search, publics or private, that carry on investigations about the feminine human health with sociological and ethical implications

Reference n.: **NMP7-EU-LCP-4**

Deadline: **01/10/2007**

Programme:

Project Title: Nanostructured toughened hybrid nanocomposites for high performance applications

Financial Scheme:

Description: Schema di finanziamento: 'Collaborative Project' a beneficio delle PMI.

Motivation: Nanocomposites are emerging new materials that promise improved properties. Their applicability, however, is presently limited by the cost of manufacture and lack of reproducibility. Literature shows that on the bench scale, dramatic improvement in polyolefin mechanical properties can be obtained by intercalation and exfoliation of nanoparticles in the matrix.
However, when materials produced using conventional equipment are tested, their performance does not meet expectations nor live up to the claims. Project Goals: To remove technical barriers to producing high performance polymer nanocomposite materials on the industrial scale, fundamental insight into the dispersion of particles within the polymer matrix is needed. The intension is to gain this insight through a series of carefully designed studies, using the most advanced experimental techniques, theoretical modelling, carried out by very experienced and skilled partners. The basic objective is to obtain a deeper understanding of the interfacial structure of nanocomposites. This knowledge will enable realization of the great performance potential of these materials through development of novel multiphase and hybrid nanocomposites. This knowledge will facilitate commercialization of polymer nanocomposite materials with superior properties that will lead to development of new products. To meet this objective, we aim to improve the stiffness of polyolefin nanocomposites while not only maintaining but also improving the toughness of the matrix considerably. The technological objective is to optimize and, through novel interface design, to develop new cost efficient hybrid (nanofiller-fiber) nanocomposites as an alternative to heavily filled polymers and expensive engineering polymers and fulfil industry requirements for high performance materials in high tech applications.

Organisation Type: Altro

Partner Sought: Industrial partners (preferably SMEs) particularly within the following sectors: construction, domestic appliances, medical or electronic devices, aeronautics.

Per informazioni "Giovanna Maracchia" - maracchia@apre.it

Reference n.: **NMP7-EU-LCP-4**

Deadline: **01/10/2007**

Programme:

Project Title: Nanostructured toughened hybrid nanocomposites for high performance applications

Financial Scheme:

Description: Schema di finanziamento: 'Collaborative Project' a beneficio delle PMI.

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