



Digital Vision

# Factories of the Future

**Academia** is the media patron of the ManuFuture conference to be held in Wrocław, Poland on 24 and 25 October 2011. It is Europe's most important conference covering the development of manufacturing technologies and setting out a strategy for the manufacturing industry through 2030

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The project is being executed for the European Commission with support from the Polish Presidency of the EU Council and representatives of the Government of the Republic of Poland.

The Seventh Framework Programme (FP7) is the largest system of financing scientific research in Europe, with a budget of 54 billion euros for 2008-2013. The purpose of the funds is to help reach the strategic targets set out by the European Council, which strive to turn the EU into the most competitive and dynamic knowledge-based economy in the world, able to maintain sustained economic growth, create more numerous and better workplaces, and improve social cohesion. The knowledge triangle formed by education, research, and innovation is essential for reaching this goal.

## Program aims

The aims of FP7 are: supporting trans-national cooperation in all areas of technological research and development; improving the dynamism, creativity and excellence of European research in pioneering scientific disciplines; intensifying the dialogue between the scientific world and European societies to improve the public's trust in science; supporting human potential within re-

search and technology by providing better education and training; improving access to research infrastructure; building recognition for the scientific professions; encouraging mobility among researchers and helping them develop their careers; and supporting the dissemination of knowledge obtained as a result of research activities financed from public sources.

FP7 also provides support for research and training activities in nuclear energy as part of the EURATOM program, including activities organized by the Joint Research Centre (JRC).

### A modern industry

FP7 supports the development of modern industry in EU member states. The first detailed FP7 project, named Cooperation, includes the theme "Nanosciences, Nanotechnologies, Materials & New Production Technologies (NMP)". Its core objective is to improve the competitiveness of the European industry and change manufacturing in European countries from resource-based to a modern knowledge-based industry. The core activities of NMP are nanosciences and nanotechnologies, materials, new production, and integration of technologies for industrial applications.

The "Nanosciences" area concerns natural phenomena and the manipulation of materials on the atomic and molecular level, as well as the macromolecular scale. "Nanotechnology" is the general name for the entire range of technologies and methods of creating various structures on a nanometric scale, that is, on the scale of individual molecules. The main aim of the "Materials" area is generating knowledge on new materials in order to facilitate the manufacture of new industrial products and develop new methods for their production and repair. Activities within the "New Production Technologies" area aim to enable European enterprises to create innovative production capabilities in order to become leaders in global markets.

The integration of technologies for industrial applications aims to combine these three areas of activity and

simplify their implementation in various sectors of the economy.

### ...for small and medium enterprises

Technology Platforms have been prepared in order to create a development strategy for those sectors of the economy and future technologies that are important for Europe. They are a joint enterprise by the European Commission, industry, scientific and financial institutions, and key decision makers. In the manufacturing area, the most important role is played by the European Technology Platform (ETP) called Manufuture (Manufacturing of the Future).

Its objective is the preparation and implementation of a strategy based on scientific research in order to help enterprises reinvent themselves in a dynamic sector aiming to create products, utilize processes, and provide high-added-value services. As a result, European enterprises will be able to gain a major share of global production and participate in a knowledge-based economy in the future.

Increasing demand for more environmentally-friendly, higher quality products tailored to the customer's needs, as well as requirements placed on enterprises regarding reducing their energy use and generating less waste, have resulted in the formation of the Public-Private Partnership (PPP) "Factories of the Future." The program is financed by the European Commission and the industry as part of FP7.

The aim of the "Factories of the Future" PPP is to provide support to industrial enterprises within the EU, focusing on small and medium enterprises (SMEs), in order to adapt to increasing global competition through improving their technology base. The program supports the production sector in the development of novel, more advanced and environmentally-friendly technologies.

*The article has been prepared as part of the M-FUTURE2011 project, a part of which is the Manufuture 2011 conference taking place on 24-25 October in Wrocław ([www.manufuture2011.eu](http://www.manufuture2011.eu)).* ■

### General structure of the 7 Framework Programme

#### Cooperation

Support for trans-national science and research cooperation in ten selected distinct themes, including health, nutrition, agriculture, and fisheries.

#### Ideas

Investigator-driven frontier research initiated by scientists from all fields of research.

#### People

Quantitative and qualitative enhancement of the human potential within technological research and development in Europe and encouraging international and intersector mobility.

#### Capabilities

Supporting the key aspects of European potential in research, technological development and innovation.