



Materials in FP7

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Research DG – Materials Unit
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Progress in Materials Sciences ...and more

- **Nano-enhanced products increasingly appear in our everyday life, even if we do not always realise**

- Organic Light Emitting Diodes
- Photovoltaic film
- Scratch-proof self-cleaning glass
- Stain resistant fabrics
- Intelligent clothing
- Bucky-tubeframe
- Biocompatible hip-joint
- Nano-particle paint
- Thermo-chromic glass
- 0 - Magnetic data memory
- 1 - Carbon nanotube fuel cells
- 2 - Nano-engineered cochlear implant



Source: BBC



Materials under FP6

- Promising area to realise the ERA
- Core domain in Thematic Priority 3
- Integration promoted with Nano & Prod
- No separate budget



FP7 – Theme 4: NMP

Four activities:

1. Nanosciences and nanotechnologies
2. Materials
3. New production
4. Integration of technologies for industrial applications



Activity 4.2: Materials

- *Materials themselves become the first step in increasing product value and performance*
- *The objective is to develop added value materials with higher knowledge content, new functionalities and improved performance*
- *Emphasis on using the potential of nanotechnologies and biotechnologies and on learning from nature*
- *Multidisciplinary approaches, involving chemistry, physics, modelling, design and processing*



Activity 4.2: Materials

4.2.1 Mastering nano-scale complexity in materials

4.2.2 Knowledge-based smart materials with tailored properties

4.2.3 Novel biomaterials and bioinspired materials

4.2.4 Advances in chemical technologies and materials processing

4.2.5 Using engineering to develop high performance materials



WP - NMP

Activity 4.2: Materials

4.2.1: Mastering nano-scale complexity in materials

- Nanostructured polymer-matrix composites - LSIP
- Nanostructured coatings and thin films - SSFRP
- Characterisation of nanostructured materials - CSA



Activity 4.2: Materials

4.2.2: Knowledge-based smart materials with tailored properties

- Organic materials for electronics and photonics - LSIP
- Nanostructured materials with tailored magnetic properties - SSFRP
- Advanced material architectures for energy conversion - SSFRP



Activity 4.2: Materials

4.2.3: Novel biomaterials and bioinspired materials

- Highly porous bioactive scaffolds controlling angiogenesis for tissue engineering - LSIP

Activity 4.2: Materials

4.2.4 Advances in chemical technologies and materials processing

- Flexible efficient processing for polymers-SME-TP
- Nanostructured catalysts with tailor-made functional surfaces - SSFRP
- Renewable materials for functional packaging applications - SSFRP

Activity 4.2: Materials

4.2.5 Using engineering to develop high performance knowledge-based materials

- Novel materials tailored for extreme environments - LSIP
- Modelling of microstructural evolution under work conditions and in materials processing - SSFRP

Activity 4.4: Integration

Advanced wood-based composites and their production
- LSIP

Application of new materials including bio-based fibres
in high-added value textile products – SME-TP

Multifunctional materials for the future vehicles – LSIP

Development of nanotechnology-based systems for in-
vivo diagnosis and therapy – LSIP

Resource efficient and clean buildings – LSIP

Innovative ... construction product-services – SME-TP

ERA-NET on Construction