

6th FRAMEWORK PROGRAMME

THEMATIC AREA 3:

NANOTECHNOLOGIES AND

NANOSCIENCES, KNOWLEDGE-BASED

MULTIFUNCTIONAL MATERIALS,

NEW PRODUCTION PROCESSES

AND DEVICES





New Instruments




Networks of Excellence (NE):

- Activities should be oriented towards long-term objectives and contribute to advancing knowledge for sustainability, competitiveness and dynamism of the EU industry.
- They should include activities related to education and skills development.



Integrated Projects (IP):

- Integrated projects should include all necessary activities to ensure radical innovation in the long term in a dynamic and effective way, in particular those related to education and skills development.
 - The activities should also lead to a positive image of industrial research.
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Integrated Projects

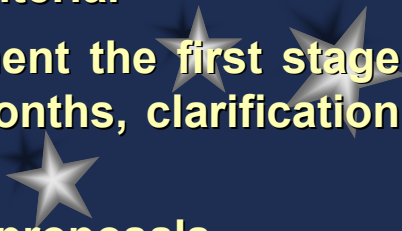


IPs should comprise a set of activities implemented in a co-ordinated manner including:

- Innovation Management (including transfer of knowledge, support to SMEs and spin-offs, links with venture capital).
- Continuous Evaluation of the Potential Impacts.
- Co-operation at International Level, Benchmarking.
- Support to Standardisation and / or Legislation, IPR Protection.
- Mobility of Researchers, Education and Development of New Skills.
- Information, Dialogue concerning “Science and Society” Aspects.
- Ethical Issues.



The evaluation of proposals will be organised in two stages:

- The first stage proposal should address all selection criteria.
 - The second stage selected proposal should complement the first stage proposal with the detailed workplan for the first 18 months, clarification on budget and the consortium agreement.
 - A review panel will interview all second stage selected proposals.
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Other Instruments



Co-ordination Actions (CA):

- To strengthen links between different research initiatives, such as EUREKA, national, regional and Commission RTD projects.
- Pilot projects would be welcome in order to explore methods of such co-ordination with EUREKA, COST and ESF activities.




Specific Targeted Research Projects (STREP) :

- Should be targeted at exploring the frontiers of knowledge and to support long term innovation and transformation of industry.
- The objective is to help develop innovative technologies to meet the needs of the future society. Such projects could be considered as incubators for future IPs.



Specific Support Actions (SSA) :

- Such measures might be used to help preparing future research activities. For a positive evaluation, their impact should be ensured at a broad international level.
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3.4.1: Nanotechnologies and Nanosciences

3.4.1.1: Long-term Interdisciplinary Research into Understanding Phenomena, Mastering Processes and Developing Research Tools



Selected Topics for 2003:

- Expanding Knowledge in Size-dependent Phenomena - NE; STREP; CA
- Self-organisation and Self-assembling - IP; NE; STREP
- Molecular and Bio-molecular Mechanisms and Engines - IP; NE; STREP

3.4.1.2: Nano-biotechnologies



Selected Topics for 2003:

- Interfaces Between Biological and Non Biological Systems - IP; NE; STREP

3.4.1: Nanotechnologies and Nanosciences

3.4.1.3: Nano-metre-scale Engineering Techniques to Create Materials and Components



Selected Topics for 2003:

- Engineering Techniques for Nanotubes and Related Systems – IP; NE; STREP



Possible Topics for 2004:

- Nanostructured Materials and Nanopowders

3.4.1.4: Development of Handling and Control Devices and Instruments



Selected Topics for 2003:

- Handling and Control Instrumentation at the Level of Single Atoms or Molecules and/or < 10 nm - IP; NE; STREP; CA



Possible Topics for 2004: Nanorobots

3.4.1: Nanotechnologies and Nanosciences

3.4.1.5: Applications in Areas such as Health and Medical Systems, Chemistry, Energy, Optics, Food and the Environment



Selected Topics for 2003:

- Roadmaps for Nanotechnology – SSA



Possible Topics for 2004:

- Applications in the Fields of Energy and Chemistry, with Focus on Catalysis



3.4.2: Knowledge-based Multifunctional Materials

3.4.2.1: Development of Fundamental Knowledge



Selected Topics for 2003:

- Understanding Materials Phenomena - NE; STREP; CA

3.4.2.2: Technologies Associated with the Production, Transformation and Processing of Knowledge-based Multifunctional Materials, and Biomaterials



Selected Topics for 2003:

- Mastering Chemistry and Creating New Processing Pathways for Multifunctional Materials - IP; NE; STREP; CA
- Surface and Interface Science and Engineering - IP; NE; STREP; CA



Possible Topics for 2004: Biomaterials

3.4.2: Knowledge-based Multifunctional Materials

3.4.2.3: Engineering Support for Materials Development



Selected Topics for 2003:

- **New Materials by Design - IP; NE; STREP; CA**
- **New Knowledge-based Higher Performance Materials for Macro-applications - IP; NE, STREP, CA**



Possible Topics for 2004:

- **Nano-structured Materials and Nano-powders**



3.4.3: New Production Processes and Devices

3.4.3.1: Development of New Processes and Flexible, Intelligent Manufacturing Systems



Selected Topics for 2003:

- **New Production Technologies, as well as “Bottom-up” Production Techniques, Based on Nanotechnology and New Materials - STREP**
- **New and User-friendly Production Equipment and Technologies, and Their Incorporation into the Factory of the Future - IP; NE; STREP; CA**
- **Creation of “Knowledge Communities” in Production Technologies - IP; NE; CA; SSA**
- **Support to the Development of New Knowledge Based Added Value Products and Services in Traditional Less RTD Intensive Industries - IP dedicated to SMEs**

3.4.3: New Production Processes and Devices

3.4.3.2: Systems Research and Hazard Control



Selected Topics for 2003:

- Radical Changes in the “Basic Materials” Industry (excluding Steel) for Cleaner, Safer and More Eco-efficient Production - IP; STREPS
- Sustainable Waste Management and Hazard Reduction in Production and Manufacturing - NE; CA; SSA



Possible Topics for 2004:

- Support to the Development of New Knowledge Based and Sustainable Processes and Products/Services - IP dedicated to SMEs
- “Low CO₂ Steel Processes” - IP

3.4.3: New Production Processes and Devices

3.4.3.3: Optimising the Life-cycle of Industrial Systems, Products and Services



Selected Topics for 2003:

- **Optimisation of “Production-use-consumption” Interactions - NE; CA**
- **Increasing the “User Awareness” - SSA**

3.4.4: Integration of Nanotechnologies, New Materials, and New Production Technologies for Improved Security and Quality of Life



Selected Topics for 2003:

- **3.4.4.1 – Systems, Instruments and Equipment for Better Diagnosis and/or Surgery, including for Remote Operations - IP; NE; CA**
- **3.4.4.2 - Tissue Engineering, New Biomimetic and Bio-hybrid Systems - IP; NE; STREP; CA**
- **3.4.4.3 - New Generation of Sensors, Actuators and Systems for Safety and Security of People and Environment - IP; NE; STREP**



Possible Topics for 2004:

- **Towards a Human-friendly Living Environment: “From Atoms to Buildings”**
- **Support to the Development of New Knowledge Based Added Value Products and Services for Medical Applications - IP dedicated to SMEs**



Indicative Budgetary Road Map

BUDGET YEAR	TOTAL BUDGET	ADM M€	NEW INSTRUMENTS M€	OTHER INSTRUMENTS (STREP, CA, SSA)
2003	300	15	200	90
2004	320		To be decided later	
2005	335			
2006	345			
Total	1300	xxx	xxx	xxx





Table for the First Calls (2003)

Instrument	New Instruments M€	Other instruments (STREP, CA, SSA)
First Call	260	110
Joint call with Priority 2	25	10
Dedicated Call for SMEs	40	



First Call

- ✉ Envisaged Publication Date: December 2002

- ✉ Envisaged Closing Date:
 - For the New Instruments:
February 26, 2003 (1st stage);
June 24, 2003 (2nd stage)

 - For the Other Instruments:
April 10, 2003 (single stage)

- ✉ Indicative Budget Available: 370 M€
(of which 260 M€ for new instruments)



Description and Content of First Call

- ✉ 3.4.1.1- Expanding the Knowledge in Nanosciences - NE; STREP; CA
- ✉ 3.4.1.1- Self-organisation and Self-assembling - IP; NE; STREP
- ✉ 3.4.1.1- Molecular and Bio-molecular Mechanisms and Engines - IP; NE; STREP
- ✉ **3.4.1.2- Interfaces Between Biological and Non Biological Entities - IP; NE; STREP**
- ✉ 3.4.1.3- Engineering Techniques for Nanotubes - IP
- ✉ 3.4.1.4- Handling and Control Instrumentation at the Level of Single Atoms or Molecules and/or < 10 nm - IP; NE; STREP; CA
- ✉ 3.4.1.5- Roadmaps for Nanotechnology- SSA
- ✉ 3.4.2.1- Understanding Materials Phenomena - NE; STREP; CA
- ✉ 3.4.2.2-Mastering Chemistry; Creating New Processing Pathways for Multifunctional Materials - IP; NE; STREP; CA
- ✉ **3.4.2.2- Surface Science and Engineering - IP; NE; STREP; CA**
- ✉ 3.4.2.3- New Materials by Design - IP; NE; STREP; CA

Description and Content of First Call

- ✉ 3.4.3.1- “Hybrid” Technologies, as well as “Bottom-up” Production Techniques, Based on Nanotechnology and New Materials - STREP
- ✉ 3.4.3.1- New and Simplified Production Equipment and Technologies, and their Incorporation into the Factory of the Future - IP; NE; STREP; CA
- ✉ **3.4.3.2- Radical Changes in the “Basic Materials” Industry (excluding Steel) for Cleaner, Safer and More Eco-efficient Production - IP; STREPS**
- ✉ 3.4.3.2- Sustainable Waste Management and Hazard Reduction - NE; CA; SSA
- ✉ 3.4.3.3- Optimisation of “Production-use-consumption” Interactions - NE; CA
- ✉ 3.4.3.3- Increasing the “User Awareness” - SSA
- ✉ 3.4.4.1- Systems, Instruments and Equipment for Better Diagnosis and Surgery, including Systems for Remote Operations - IP; NE; CA
- ✉ 3.4.4.2- Tissue Engineering, Biomimetic and Bio-hybrid systems - IP; NE; STREP; CA
- ✉ 3.4.4.3- New Generation of Sensors, Actuators and Systems for Safety and Security of People and Environment - IP; NE; STREP