

## Applications of nanobiotechnology



The combination of micro- and nanotechnology with biological samples (cells, molecules) at the nanometer scale (1 million of a millimeter) will create faster and powerful innovative integrated systems for applications like

- **medical diagnosis** (point of care or at home, earlier and more sensitive),
- **therapy** (drug carriers to targeted cells for more efficient therapy and less side effects),
- **food and environmental monitoring** (control of pathogens and toxicants in water, soil, air and food).

The **main benefits** of nanobiotech tools are

- their miniaturised size,
- the need of samples or biological probes with reduced size to analyse thousands of samples simultaneously,
- the saving of energy and natural resources.

## Market

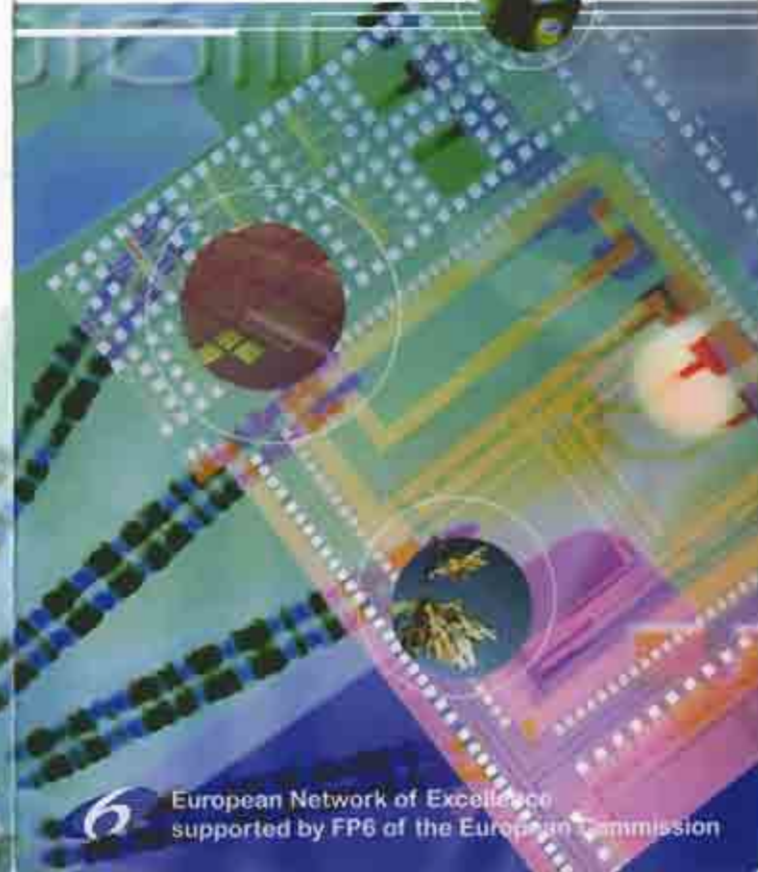
The joint committed forces of specialists from physics, chemistry, engineering, biology and medicine with European nano- and biotech companies will promote innovation in nanobiotechnology. The BioMEMS market for in vitro diagnostic, medical devices, and research devices is estimated between 4 and 8 billion US\$ in 2012.

## Partners of Nano2Life

MIC	Denmark
JRC	Europe
CEA	France
CNRS	France
INSERM	France
Bioanalytik-muenster	Germany
CeNTech	Germany
Fraunhofer IBMT	Germany
NanoBioNet	Germany
Univ. Kaiserslautern	Germany
Univ. Mainz	Germany
Univ. Münster	Germany
Univ. Saarland	Germany
Demokritos	Greece
FORTH	Greece
NMRC	Ireland
Univ. Tel Aviv	Israel
Mesa+	Netherlands
INSAT	United Kingdom
PCB	Spain
Univ. Lund	Sweden
EPFL	Switzerland
FSRM	Switzerland

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European Network of Excellence  
supported by FP6 of the European Commission

## Mission

**Nano2Life** is the first European Network of Excellence in the area of nanobiotechnology supported by the European Commission under its 6<sup>th</sup> Framework Programme.

Its objective is to merge the existing European expertise and knowledge in the field of nanobiotechnology in order to improve European scientific excellence and industrial competitiveness.

## Long term goal

**Nano2Life** will transform into a virtual **European Institute of Nanobiotechnology (EIN)** after 4 years, with shared technical and human resources, central management and a common scientific vision. **EIN** is expected to serve as a European reference centre in the area of nanobiotechnology for science, industry, and society thus becoming a trendsetter for new research directions and standards.

## Responsibility

**Nano2Life** will contribute to ensure development of nanobiotech devices according to the needs of the European industry and in agreement with international social and ethical standards.

## Partnership

The partners of **Nano2Life** consist of 23 public or non-profit organisations from 12 European countries incl. Israel and Switzerland. They have agreed to share their human, technical and financial resources in connecting their strategy and their research programmes in nanobiotech. In addition more than 20 companies, 5 members from the new European member states and 4 international partners from Asia, Canada and Australia are associated with **Nano2Life**.

## Strategy

The partners of **Nano2Life** implement a Joint Programme of Activities aiming at a harmonious development of nanobiotechnology in Europe through a durable and long lasting integration of their organisations.

