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Future Trends Series - GR:REEN Project

Title of the report

Nanotechnology: The Invisible Giant Tackling Europe's Future Challenges

Area

Science and Technology

Reporter

European Commission

Type of the Reporter

International Organisation

Periodically updated?

No

First issued year

2013

Latest update

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Official website

http://ec.europa.eu/index_en.htm

Language available

English

Short summary

The publication describes the unique nature of nanotechnology, bringing innovation to every aspect of human existence. It outlines nanoscience and nanotechnology dedicated research expenditure in Europe over recent years, in particular via the 7th Research Framework Programme (FP7). An overview is given of the main sectors where nanotechnology is enabling significant progress. Looking forward, the report also focuses on future economic benefits for Europe.

Key trends

- Nanotechnology is likely to become all-pervasive, touching every aspect of human existence from medicine to energy generation, and will present new opportunities to make the stuff of life better, more cheaply and using fewer raw materials.
- It will also help address key societal challenges facing Europe: by confronting these challenges head on through technological innovation, nanotechnology will also bring much-needed economic growth and employment opportunities to the EU.
- Given the broad-reaching potential of nanotechnology, there has been a commensurate explosion in global research and development in recent decades and, by 2015, investment (including that from corporate and private sources) could reach USD 0.25 trillion.

- There are many sectors where nanotechnology is enabling significant progress and will continue to do so in the next years. Those representative of major research themes are nanoelectronics, nanophotonics, nanobiotechnology, nanomedicine, self-assembly, catalysts, industrial applications, energy and environment, tools for investigating the nanoscale, health/safety/environment and communication/societal impact.

- Future economic benefits deriving from nanotechnology are projected to keep improving health, rejuvenating traditional industries and bringing solutions to the major challenges facing Europe, a secure affordable energy supply and reduced greenhouse gas emissions.

Suggestions

- Europe must secure its role in many other emerging nano-markets, taking the opportunity to develop profitable companies in new materials, processing equipment and device technology.

Methodology

Modelling

Reference to other trends reports? If yes, which reports?

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