

# NANOMAT Conference 2004

Oslo 3 June 2004

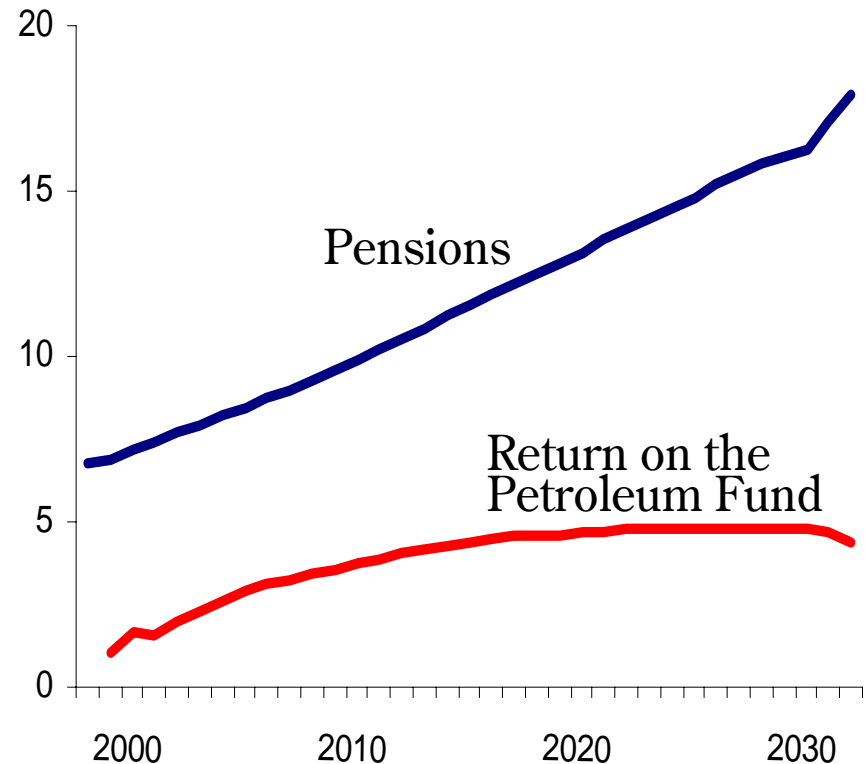
**State Secretary Helle Hammer**

Norwegian Ministry of Trade and Industry



# We face a broad set of challenges...

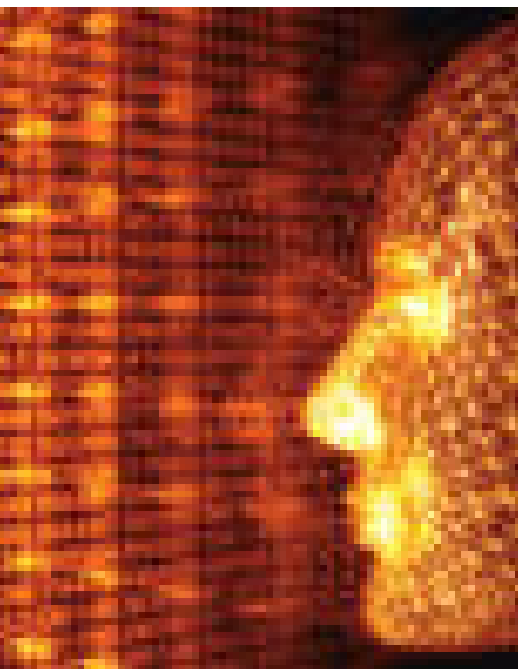
- Globalisation – opportunities and challenges at home and in foreign markets
- Reduced oil revenues and increased public expenses
- Innovation rates are too low
- R&D investments are too low
- Economic fundamentals differ from our trading partners
- A need for a skilled and competent labour force



Expected rate of return of the Petroleum Fund and expected expenses for retirement and disability pensions. Percentage of GDP. Source: The Norw. Ministry of Finance



# The Government's Vision



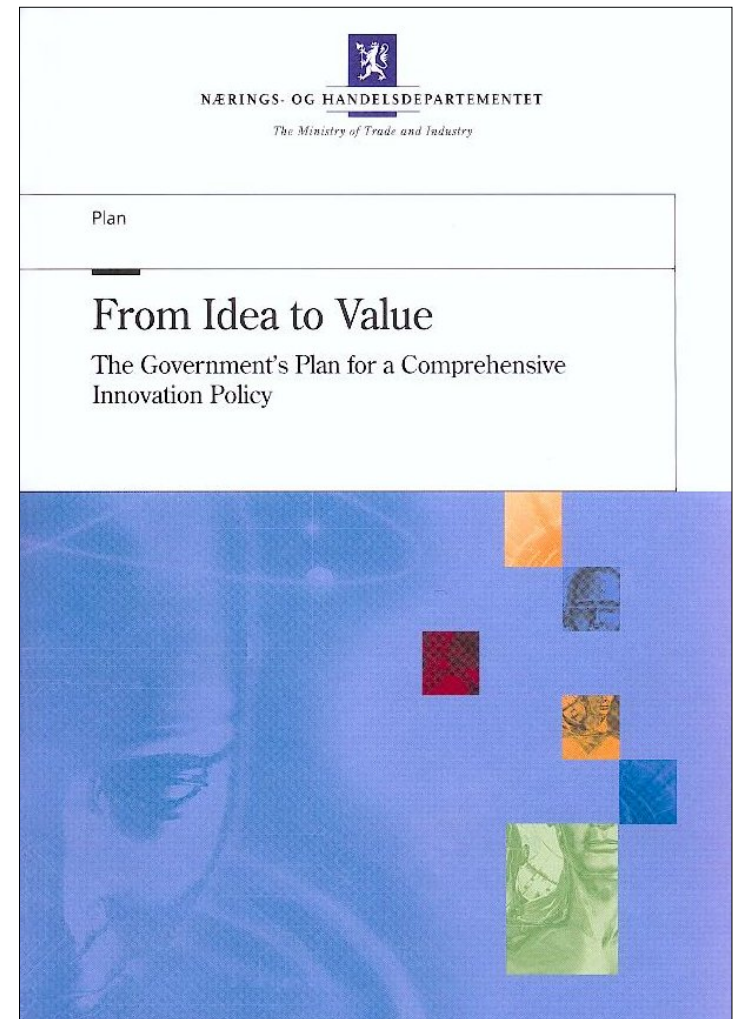
*"Norway shall be one of the most innovative countries in the world, where resourceful and creative enterprises and people are given opportunities for developing profitable business.*

*Norway shall be in the lead internationally in important areas, in terms of knowledge, technology and wealth creation"*

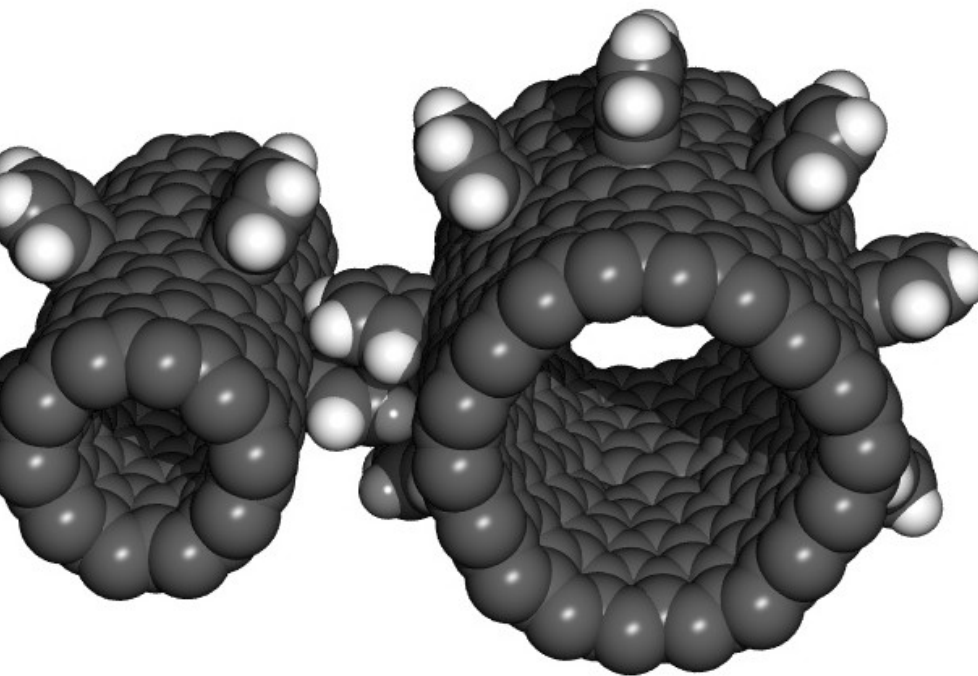


# A Plan for a Comprehensive Innovation Policy

- General conditions for Trade and Industry
- Knowledge and Competence
- R&D and commercialisation
- Entrepreneurship
- Infrastructure

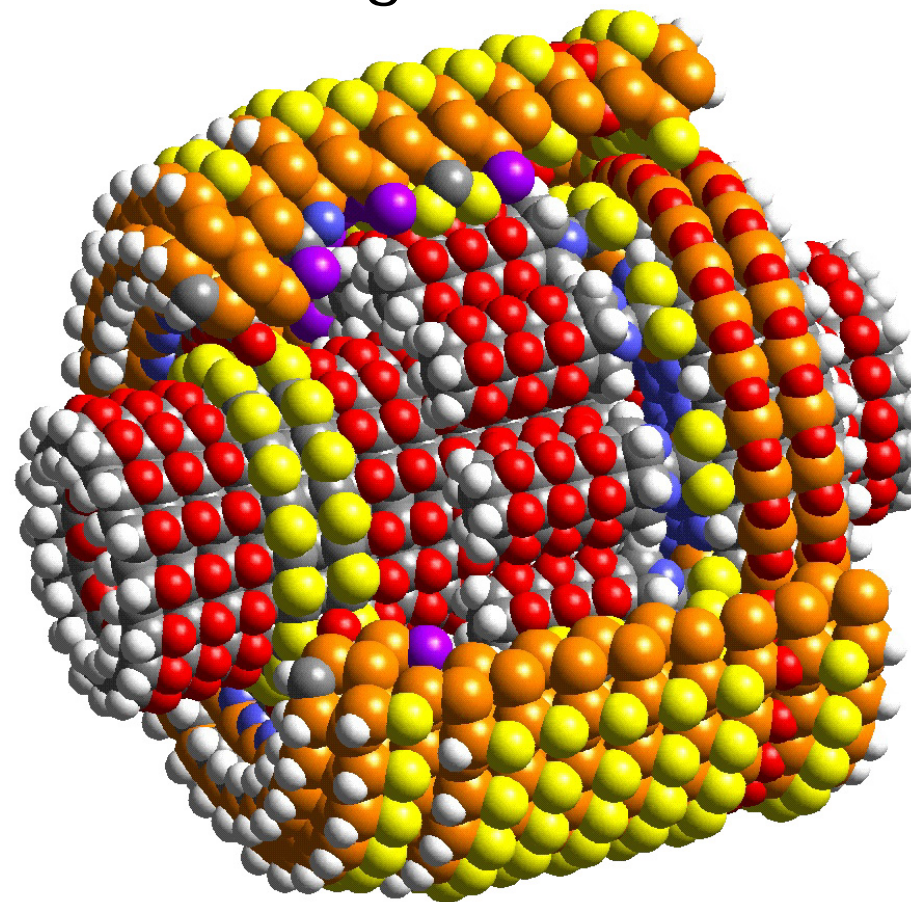






Nano gear wheel

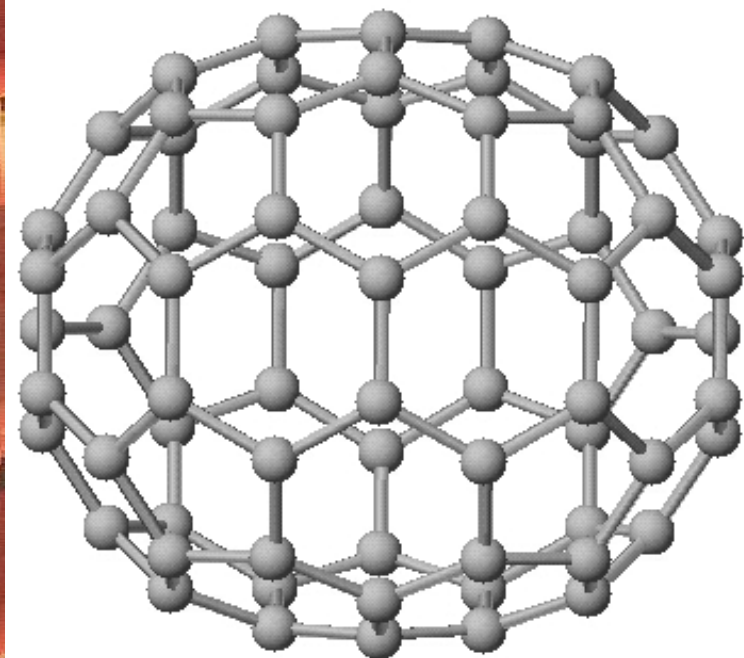
Nano gear

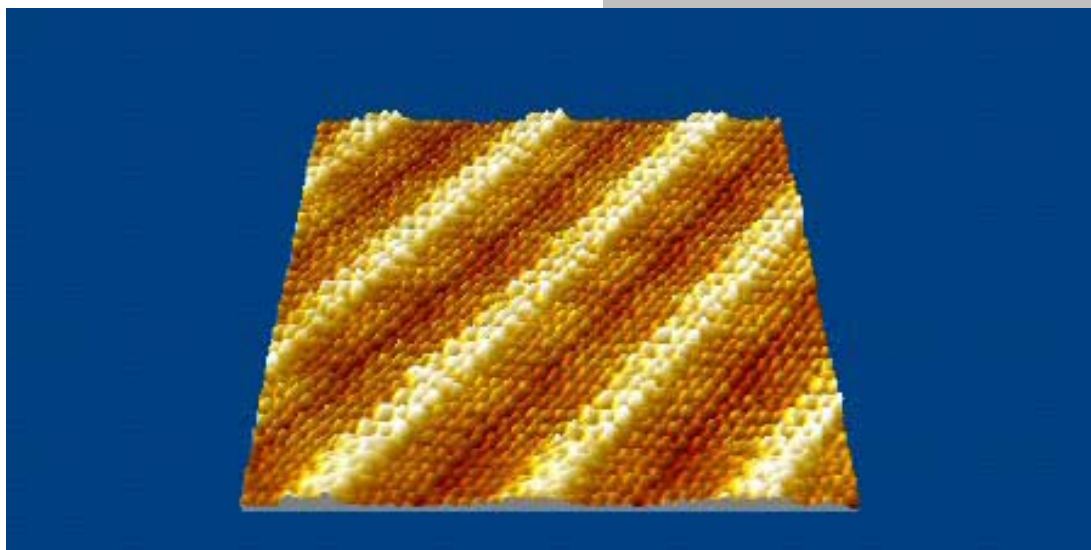
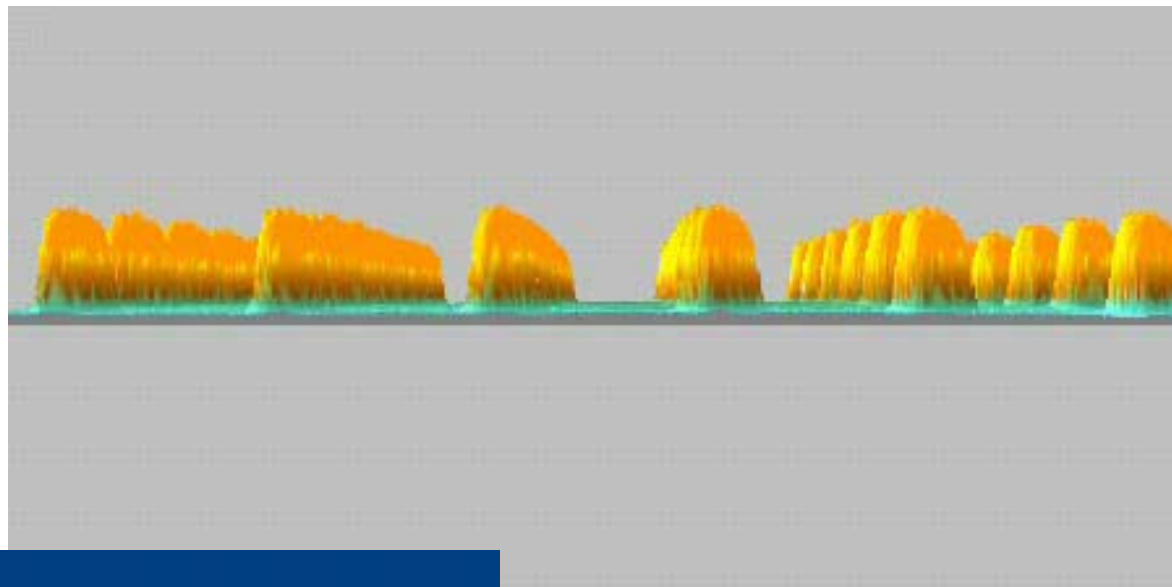


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# Atoms and molecules as building stones







# Nanotechnology

- **Nanotechnology is “the mother of all sciences”, combining physics, chemistry, biology, medicine, electronics, ICT and materials science**
- Illustrated by:
  - **“The total societal impact of nanotechnology is expected to be much larger than that of the silicone integrated circuit, because it its applicable to many more fields than just electronics”**

The National Science Foundation, 2000



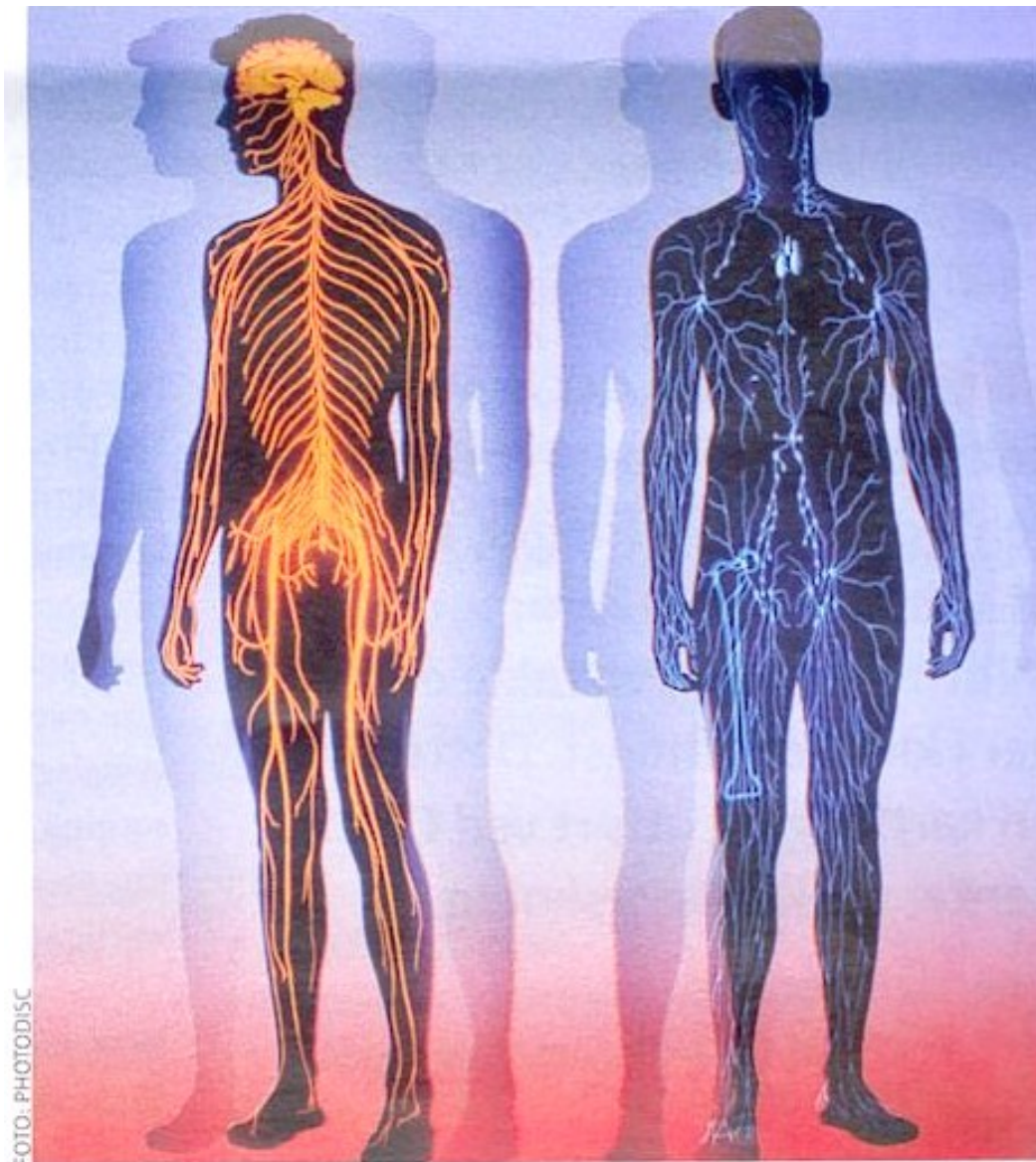
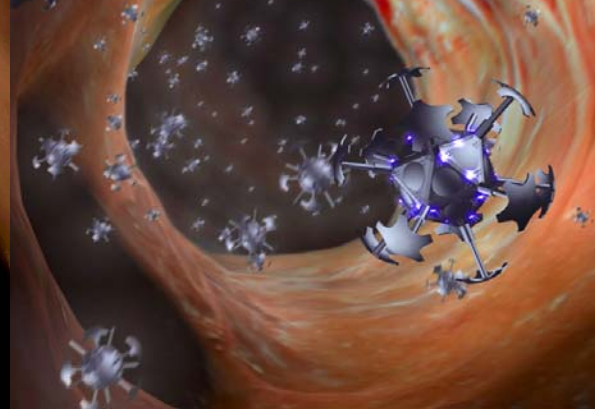
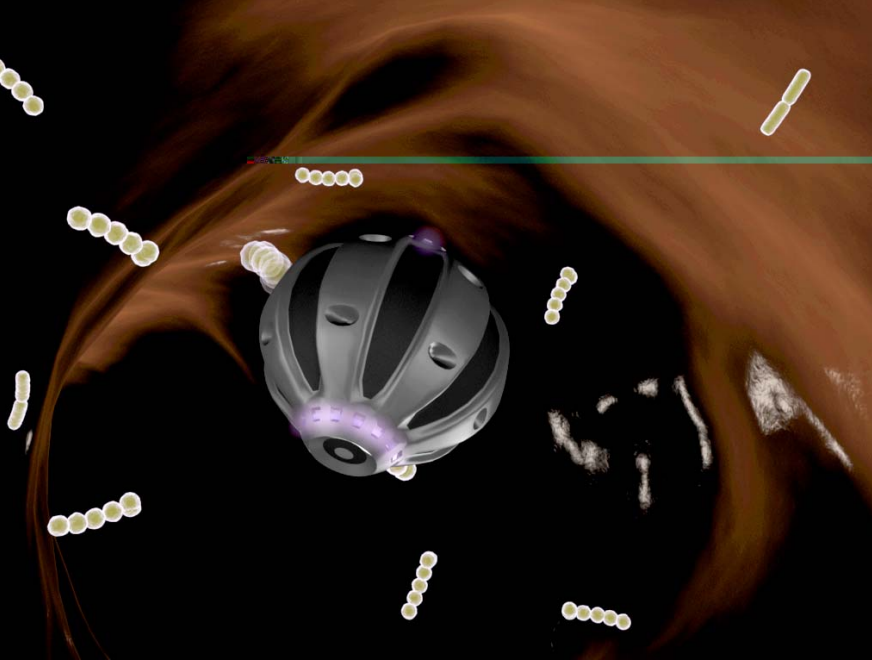
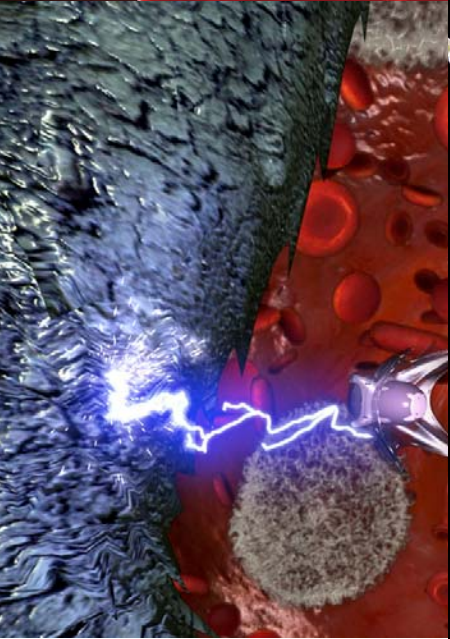
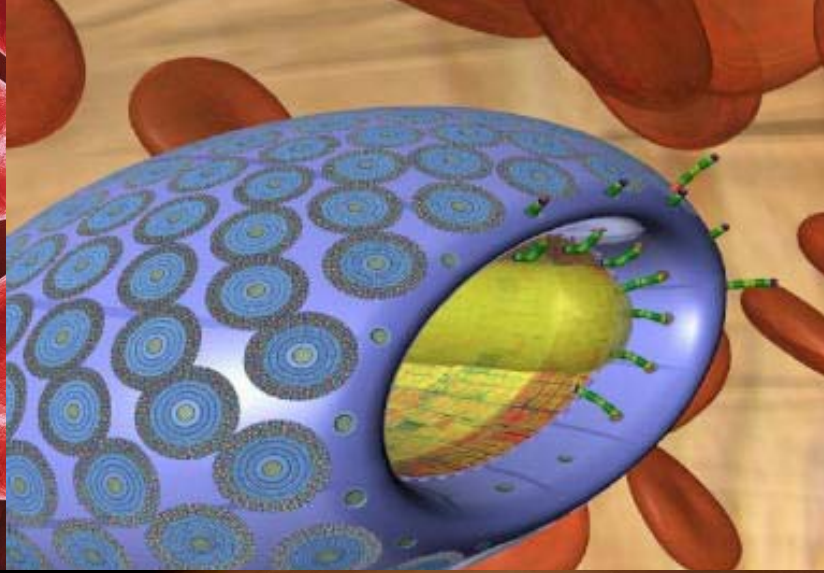
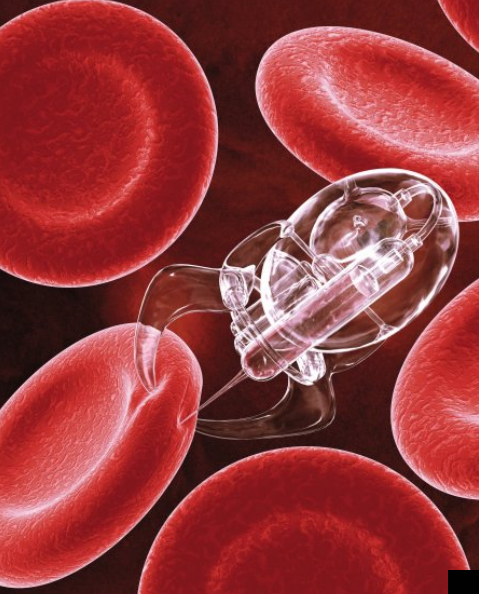


FOTO: PHOTODISC





# Nanotechnology in future everyday life

*Nano-particle paint to prevent corrosion*

*Thermo-chromic glass to regulate the influx of light*

*Piezo mats prevent annoying vibrations*

*Hip joints made from biocompatible materials*

*The helmet maintains contact with the wearer*

*Intelligent clothing measures pulse and respiration*

*The Bucky-tube frame is as light as a feather, yet strong*

*Fuel cells provide power for mobile phones and vehicles*

*Magnetic layers for compact data memory*



