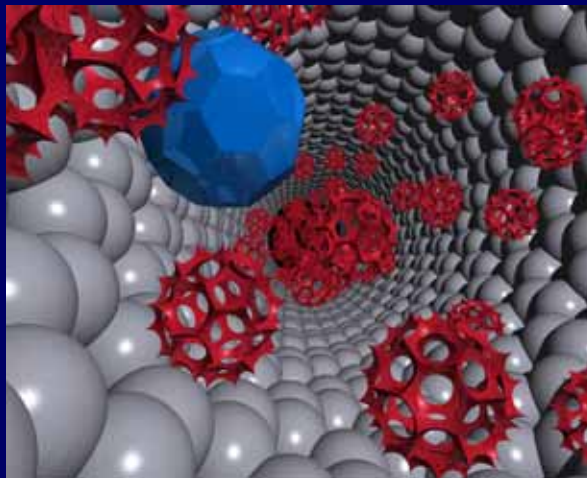


# Nanotechnology

## What is it?

- Nanotechnology describes the science and technology used to control and manipulate matter at the nanoscale.
- It is a truly multi-disciplinary science, combining ideas from physics, chemistry, biology, engineering, and computer science.
- Nanotechnology is rapidly becoming one of the most important research fields for cutting edge science and advanced technology.



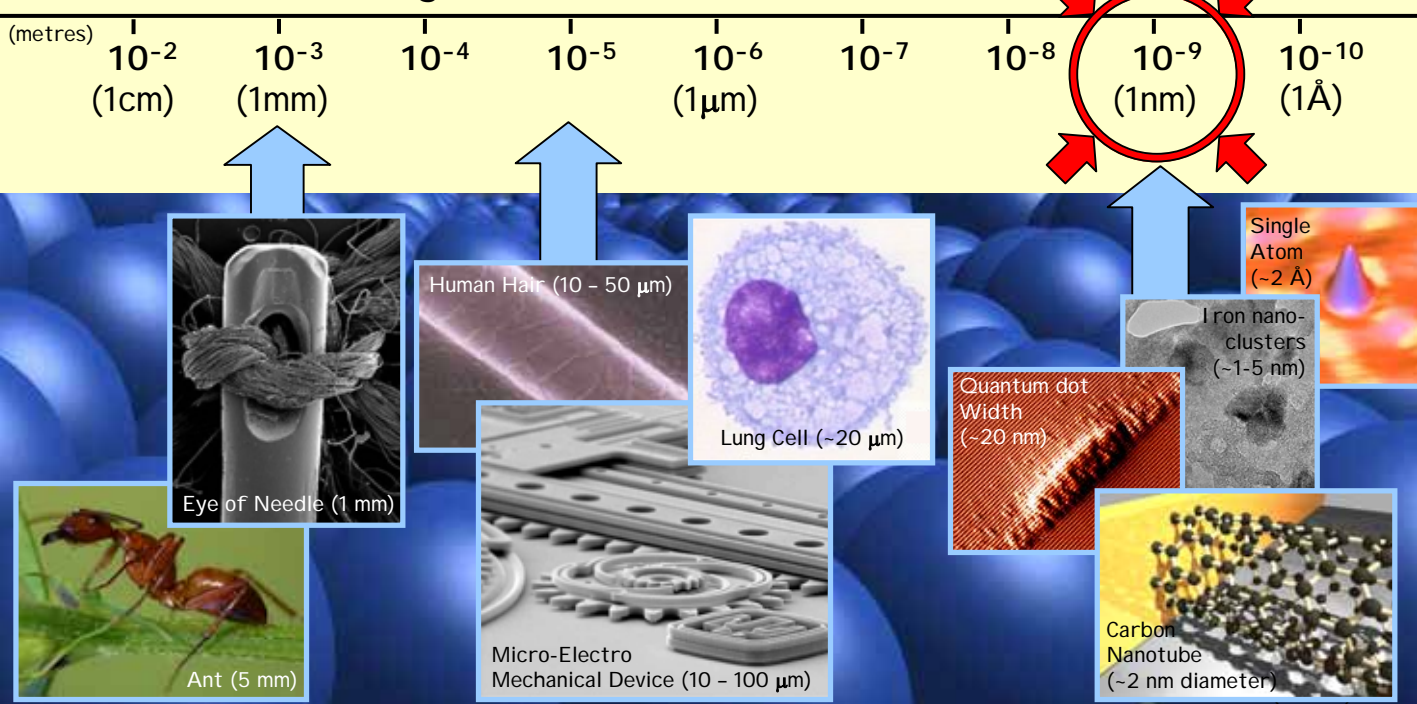
## Nanometre

-1 nanometre (nm) is one millionth of a millimetre, or about five atoms in a row.

## Applications

- Nanotechnology will pave the way for a number of new applications, for example:
  - new materials with superior properties.
  - further miniaturisation of electronic components.
  - integration of biology and electronics.

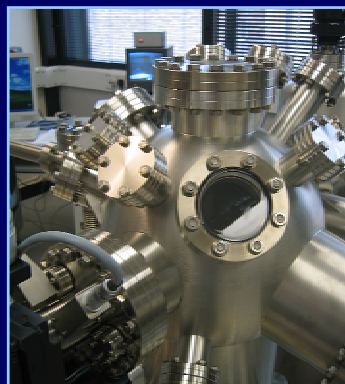
## The Scale of Things - enter the nano-world



## Nanotechnology at Leicester

- We are involved in a wide range of cutting-edge nanotechnology research in collaboration with other Universities in the UK and abroad. We also have strong links to industry. Current projects include:

- Cluster assembled materials** - novel magnetic and structural properties of materials at the nanoscale.
- Quantum theory of semiconductor nanostructures** - electronic properties of quantum dots and nanotubes.
- Nanoparticle toxicology** - health effects of nanoparticle pollution on lung cells.



- Leicester has invested significantly in world-class nanotechnology infrastructure such as the scanning tunnelling microscope (pictured left), which is able to image and manipulate individual atoms.