Nanotechnology

About this area of study

Nanoscience is the science of the extremely small. Nano is the prefix for units of10^{-9}. Meaning that one nanometre is a billionth of a metre or a millionth of a millimetre. The nano size range is defined as smaller than 100 nm. At nanoscales, materials have very different properties, and Nanoscience is concerned with understanding these. Nanotechnologies use these properties to create new materials and devices in many different industries such as medicine, the military, the environment and cosmetics.

Nanotechnology is concerned with the design and manipulation of structures at the atomic and subatomic level to create materials and devices of increased durability and efficiency. Nanotechnologists use a combination of techniques from across the sciences, including physics, chemistry, biosciences, material science and engineering.

Some of the areas that Nanotechnologists may be involved in developing include

- biomedical technologies
- developing smart new materials for product development or improvement
- carbon based electronics
- targeted drug delivery systems
- smart and sustainable materials that response to surroundings
- DNA computers
- paper thin and flexible displays

Courses offered by Deakin University include

- Bachelor of Science (Nanotechnology Major)

Labour market information

Grads online has information regarding graduate salaries and where graduates go after completing their course www.gradsonline.com.au

Job Outlook has information about the labour market outlook http://joboutlook.gov.au

Related occupations

- Astronomer
- Geophysicist
- Materials Scientist
- Mathematician
- Meteorologist

- Physical Science Technical Officer
- Academic
- Biotechnologist
- Product Designer

An industry career profile, salary and other employment information can be obtained from the My Future website www.myfuture.edu.au

Descriptions of occupations can be found at The Job Guide www.jobguide.thegoodguides.com.au

Employers

IBM www.ibm.com/au/en

Intel www.intel.com/jobs

Nanochem www.nanochem.com.au

Questacon www.questacon.edu.au

Antaria www.antaria.com

Commonwealth Scientific and Industrial Research Organisation (CSIRO) www.csiro.au

Defence Science Technology Organisation www.dsto.defence.gov.au

Lastek www.lastek.com.au

Alcatel Lucent www.alcatel-lucent.com

pSivida www.psivida.com

Australian Institute for Bioengineering and Nanotechnology www.aibn.uq.edu.au

For specific employment opportunities visit the following sites

Deakin University Jobshop www.deakin.edu.au/jobshop

Working in Nanotechnology www.workingin-nanotechnology.com

Graduate Opportunities www.graduateopportunities.com

Uni Grad www.unigrad.com.au

Seek www.seek.com.au

My Career www.mycareer.com.au

Career One www.careerone.com.au

Professional associations

Association of Professional Engineers, Scientists and Managers, Australia (APESMA) www.apesma.asn.au

Australian Nanotechnology Alliance http://nanotechnology.org.au

The Innovation Group www.innovationgroup.com.au

Try Nano.org www.trynano.org

The Australian Office of Nanotechnology www.innovation.gov.au/section/innovation/pages/australianofficeofnanotechnology.aspx