

Snomipede races to solve the mysteries of life

February 15 2005

A multi-disciplinary team of scientists from the Universities of Sheffield, Nottingham, Manchester and Glasgow has been awarded a £3m research grant to develop a new [nanotechnology](#) tool which they have called the 'Snomipede'. The team, led by Professor Graham Leggett at the University of Sheffield, hopes that once developed, the Snomipede could enable advances in areas as diverse as the understanding of the origins of disease and the low-cost commercial manufacture of plastic computer chips.

The Snomipede will enable scientists to create tiny molecular structures on scales as small as 13 nanometres.

Once developed, this pioneering new technology will have a multitude of uses in both medical research and commercial manufacturing. In the field of medical research, the ability to construct tiny arrays of biological molecules will enable scientists to conduct extremely sensitive analysis of biological samples. This type of detailed analysis could be used to understand how the human genome – the genetic information in all of our cells – regulates the production of proteins, perhaps holding the key to developing new treatments for common diseases. In addition the Snomipede may provide new tools for studying biological systems at the single molecule level, and enable the manufacture of miniaturised plastic electronic circuits.

Professor Graham Leggett of the Department of Chemistry at the University of Sheffield, and Project Leader of the new research, welcomed the grant saying, "This research grant will allow my team in Sheffield, together with teams at Glasgow, Nottingham and Manchester

universities, to pioneer faster, smaller and more efficient methods of manipulating and building molecular structures.

“The development of Snomipede technology represents the coming together of nanotechnology, molecular and cell biology, microsystems engineering and synthetic and surface chemistry. We anticipate that our research will pave the way for cost-effective commercial production of the plastic electronics of the future.

“The implications of the Snomipede will also be far-reaching in the world of medical research. The new technology can potentially be used in the fields of tissue engineering and protein research. These applications will enable researchers to develop a better understanding of disease, human tissue and human genes.”

The term ‘Snomipede’ was coined at the University of Sheffield to reflect the fusion of ‘millipede’ technology (first developed at IBM) with scanning near-field optical microscopy (SNOM).

Citation: Snomipede races to solve the mysteries of life (2005, February 15) retrieved 2 April 2024 from <https://phys.org/news/2005-02-snomipede-mysteries-life.html>

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