



The
University
Of
Sheffield.

Department of Mechanical
Engineering

Mechanical Engineering Departmental Seminar

Wednesday 23rd April 2008

**2.00 pm – 3.00 pm, St Georges Lecture Theatre 15
Sir Frederick Mappin Building**

**“Phytomining, carbon nanotubes and other eco-
technologies”**

**Dr Andrew Harris
University of Sydney**

Abstract:

There is a global push towards technologies that are more energy and resource efficient and pollute less. To create these products and processes requires a multidisciplinary approach underpinned by sound scientific investigation. In this seminar Dr Harris will talk broadly about the fields of sustainability, product design and innovation, supported by examples from his own research in sustainable mining, greenhouse gas mitigation, large-scale carbon nanotube synthesis, biomimicry and the hydrogen energy economy. In order to ensure relevance to the broader student audience he will begin by demonstrating how to make beer in a truly sustainable way.

Biography

Dr Andrew Harris is a lecturer in Chemical and Biomolecular Engineering at The University of Sydney and foundation director of the Laboratory for Sustainable Technology, a multidisciplinary research group of 25 (including 12 PhD students), whose objective is to create products and processes that maximise resource and energy efficiency, eliminate waste and cause no harm to the environment. He has active research programmes in renewable energy, the hydrogen economy, zero emission process design and large-scale carbon nanotube synthesis, and since 2004, has raised more than \$3.4 million in competitive funding to support this work. Andrew consults widely to industry, both in Australia and overseas, and is the co-founder of two start-up companies. He considers his most important work to be his contribution to the BioRegional MiniMill, a regional scale, sustainable pulp and paper technology. The MiniMill was described by the WWF as a 'visionary approach to sustainable paper production', and in 2007, won the Observer (UK) Magazine's "Ethical Invention of the Year" from more than 7000 entries. Andrew received his PhD from the University of Cambridge in 2002 and is a Chartered Engineer and member of the Institution of Chemical Engineers (IChemE), Engineers Australia and the Australian Institute of Energy. He has won more than 30 awards and prizes in his career including the 2006 Shedden Uhde Medal as the leading early career chemical engineer in Australia and New Zealand. In 2007 he was chosen as one of Australia's top 10 scientists under the age of 45 by a Cosmos Magazine selection panel which included the Apollo 11 Astronaut Buzz Aldrin.