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CAMBRIDGE SOCIETY FOR THE APPLICATION OF RESEARCH

NOTE CHANGE OF START TIME – *ONE HOUR EARLIER* THAN LAST YEAR!!

Cleaning up the Planet – Bioremediation in Action
Professor Chris Knowles, University of Oxford

Monday 25th February, 2002: ***7.30 p.m. - 9.00 p.m.***[1]
The Wolfson Lecture Theatre, Churchill College, Cambridge

Abstract

Industrial, agricultural and other human activity can cause contamination of the environment by materials such as PCBs, pesticides and heavy metals. Environmental biotechnology has a central role to play in remediating contaminated soil and water, in degrading end-of-pipe effluents, and establishing clean manufacturing processes. This is because of the uniquely effective way in which biological systems, suitably engineered, can tackle specific problems.

During the last decade enormous strides have been made in biotechnology processes which will lead to the production of high value biopharmaceuticals. However, it is now widely recognised, not least by the Biotechnology Directorate of the Science and Engineering Research Council, that bioprocessing has not kept pace. In recent years an interdisciplinary centre, the Oxford Centre for Environmental Biotechnology, has been established within the Department to focus activities within the University and beyond. The Centre combines expertise in engineering, microbiotechnology and plant sciences.

The Oxford Centre for Environmental Biotechnology (OCEB) was inaugurated late in 1997 as a collaborative exercise between research workers in the Department of Engineering Science, the Department of Plant Sciences, and the NERC Institute for Virology and Environmental Microbiology (IVEM).

Professor Chris Knowles joined the group as Director (funded by NERC), having previously been at the University of Kent. The objectives of OCEB are broadly to develop biological science and technology and the associated process engineering to remediate environmental problems in soil, water and air.

The emphasis of OCEB's programme is on developing new science and engineering, as opposed to treating matters of public policy and debate, which issues are handled by other groups in Oxford (such as the Environmental Change Unit). Thus OCEB provides a framework for those involved in scientific research in this area to make interdisciplinary contacts and develop joint programmes, and to stimulate the development of research on new and major topics in environmental remediation and clean technology.

[1]**Note:** We have now decided to **KEEP** the **earlier** start time of **7.30 p.m.**; Thanks to all who voted, and sorry to those who wanted to revert to the later time – we hope you will continue to support us, nevertheless

About the Speaker

Chris Knowles is Director of the Oxford Centre for Environmental Biotechnology, and is a member of the Department of Engineering Science, Oxford University. He is also a Senior Research Fellow of Linacre College, Oxford. He obtained a BSc in Chemistry and then a PhD in Biochemistry from the University of Leicester. This was followed by a period in the USA as a postdoctoral fellow at Dartmouth Medical School and as a postdoctoral fellow at the University of Warwick. He was at the University of Kent at Canterbury from 1970 - 1997 as Lecturer, Senior Lecturer, Reader and Professor of Microbial Biochemistry. Whilst at Kent he initiated Viridian Bioprocessing Limited (an environmental remediation company) and was Technical Director for five years until 1996. He is currently Editor-in-Chief of the Journal of Microbiological Methods and an editor of three other microbiology/biotechnology journals. He is a Non-Executive Director of Zylepsis Limited (flavour and fragrance biotechnology).

His research interests are: the bioremediation of polluted land, for example PCBs, cyanides and metals; end-of-pipe technologies to degrade organic contaminants; and the development of bioreactor systems including novel membrane separations. He is also interested in biotransformations, for example, the enantiospecific generation of lactones and the bioconversion of nitriles.

About the Subject *(Organising Secretary's notes)*

This is a subject upon which we are all expert – like food, and climate change, and the state of the economy. Chris Knowles, however, really **is** an expert; he has a great interest in using biological processes to 'save the planet'. I haven't heard him speak, but he was recommended to me by one of our Council, who usually have a good eye for such things.

See you on Monday, I hope!

Richard Freeman
Organising Secretary