

UK Magnetics Society

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www.ukmagsoc.org

24th Ewing Lecture

Dr Martin Wilson

(consultant and author of "Superconducting Magnets")

100 Years of Superconductivity, 50 Years of Superconducting Magnets

Afternoon programme

Superconductivity and Magnetics plus some other Anniversaries

Wednesday, 19 January 2011

at

Wolfson College, University of Oxford

Shortly after his discovery of superconductivity in 1911, Kammerlingh Onnes had speculated on the possibility of constructing electromagnets which would produce high fields with zero power input, but it was to be 50 years before that dream became a reality. In 1961, the first magnets wound from materials such as NbZr (type II superconductors) were reported. Subsequently, superconducting magnets started to be used as a tool in scientific research. Further developments, in particular the ductile "workhorse" material NbTi, allowed progression to modern day large magnets for medicine (MRI), fusion and high energy physics. It is perhaps surprising that the abolition of Ohm's law has not led to more applications in electrical engineering, but so far the energy savings have not been sufficient to offset the economic penalty of working at very low temperature. Although High Temperature Superconductors (HTS), discovered in 1986, seemed to offer the prospect of more applications, the first materials did not live up to their promise. Recently, however, second generation HTS conductors have been developed that may be the breakthrough the community has been waiting for. In a supporting programme, four leading practitioners in superconductivity review specific aspects of the topic and reveal yet more anniversaries.

PROGRAMME

Chairmen: Professor Harry Jones, University of Oxford and Dr John Cullen, Rolls-Royce plc

from 1500 REGISTRATION/COFFEE

1530 WELCOME/INTRODUCTION

1540 **Bulk Superconductors for very High Field Permanent Magnets**, Professor David Cardwell, University of Cambridge

1610 **25 Years of Getting High Temperature Superconductors to work for Magnets - sort of!** Professor Harry Jones, University of Oxford

1640 **The 50th Year Anniversary of the Discovery of Magnetic Flux Quantisation in Superconductors**, Professor Damian Hampshire, Durham University

1710 **75 Years of the London Equations**, Professor Stephen Blundell, University of Oxford

1740 INTERVAL: TEA/COFFEE

1830 **24th EWING LECTURE: 100 Years of Superconductivity, 50 Years of Superconducting Magnets**, Dr Martin Wilson, Consultant in Applied Superconductivity

2000 **DENNIS HADFIELD MEMORIAL PRIZE AWARD** (Best Student Bursary Conference Report in 2010 Magnews)

2015 BUFFET SUPPER

2200 END

PLEASE COMPLETE AND RETURN TO:

Jane Ward, UK Magnetics Society, Grove Business Centre, Grove Technology Park, Wantage, Oxon OX12 9FA
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I wish to attend the UK Magnetics Society 24th Ewing Event: **100 Years of Superconductivity, 50 Years of Superconducting Magnets and Superconductivity and Magnetics plus some other Anniversaries**, to be held on Wednesday, 19 January 2011, at Wolfson College, University of Oxford and enclose remittance to cover technical sessions, seminar documentation, refreshments and buffet supper (cheques made payable to the **UK Magnetics Society** and drawn on a UK bank).

Wolfson College is a short taxi ride from Oxford train and bus station. There is parking available at Wolfson College although it will be on a first come first served basis. A list of nearby hotels/bed and breakfast is available on request.

Payment may also be made by bank transfer: UK Magnetics Society, Barclays Bank plc, 17 Market Place, Wantage, Oxon OX12 8AG, UK, Acct No 50893293, Sort Code No: 20-90-91, IBAN:GB98 BARC 2090 9150 8932 93, SWIFTBIC: BARCGB22. **Please add £10 to cover bank charges if paying by bank transfer from overseas.**

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<input type="checkbox"/> I wish to make a poster presentation			

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