

# UK Magnetics Society

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## 21st Ewing Event Wednesday, 5 December 2007

at

Austin Court, Birmingham

afternoon seminar:

***"Pushing the Boat Out"- Enabling Technologies for the Protium Project***

21st Ewing Lecture:

***Hydrogen, Magnets, Sustainability and the Protium Project***

Prof Rex Harris, Dept of Metallurgy & Materials, University of Birmingham

The afternoon symposium is designed to provide relevant technical background information ahead of the Ewing lecture. Thus, the benefits of employing NdFeB magnets in various devices are described together with the use of hydrogen as a processing tool for NdFeB magnets both in production and after use. The symposium also deals with the use of hydrogen as an energy store and as a feed for fuel cells.

It is now very clear that the world is facing major environmental and resource problems which will assume ever greater proportions in the coming years. The most pressing of these are: (1) climate change in the form of global warming due to the ever increasing levels of CO<sub>2</sub> in the atmosphere and (2) the eventual exhaustion of accessible oil reserves, possibly as early as 2050. The measures required to meet, and hopefully overcome these challenges will, in the near term, involve a concerted drive for the much more efficient use of existing energy forms. The medium to longer term will involve the development of sustainable energy production using renewables such as wind, wave, geothermal, hydro and solar together with a possible increase in nuclear power and the widescale sequestration of CO<sub>2</sub> from fossil fuel power stations. Magnetic materials play a crucial role in many of these developments with hydrogen as an essential processing tool as well as a means of storing energy and providing a clean fuel for transportation.

In the evening lecture it is hoped to show the very good synergy that exists between magnets and hydrogen and to demonstrate that they are both vital agents in the drive towards sustainability. This synergy is well illustrated by the hydrogen/fuel cell canal boat project (the Protium Project) at Birmingham and this will be described and demonstrated as part of the lecture.

## PROGRAMME

Chairman: Dr Chris Maddison, Cummins Generator Technologies

from 1300 REGISTRATION/COFFEE/VISIT TO MOORED BOAT	1610 INTERVAL: TEA/COFFEE - VISIT TO MOORED BOAT
1400 WELCOME/INTRODUCTION	1730 <b>21ST EWING LECTURE: <i>Hydrogen, Magnets, Sustainability and the Protium Project</i></b> , Prof Rex Harris, Dept of Metallurgy and Materials, University of Birmingham
1410 <b><i>Permanent Magnets and Energy Efficient Devices</i></b> , Professor Geraint Jewell, Dept of Elec & Elec Engineering, University of Sheffield	1855 <b>DENNIS HADFIELD MEMORIAL PRIZE AWARD</b> (Best Student Bursary Conference Report in 2007 Magnews)
1440 <b><i>Permanent Magnet and Power Steering</i></b> , Harvey Smith, TRW Conekt	1900 BUFFET SUPPER
1510 <b><i>Hydrogen and Recycling of Rare Earth Magnets</i></b> , Dr Andy Williams, Dept of Metallurgy and Materials, University of Birmingham	2100 END
1540 <b><i>Batteries and Fuel Cells: Current Position and Future Prospects</i></b> , Dr Bruno Pollet, Department of Chemical Engineering, University of Birmingham	

**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 21st Ewing Event: **"Pushing the Boat Out" - Enabling Technologies for the Protium Project and Hydrogen, Magnets, Sustainability and the Protium Project**, to be held on Wednesday, 5 December 2007, at Austin Court, Birmingham, 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).

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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	FEE	VAT	TOTAL
<input type="checkbox"/> UKMAG Members	£ 92.00	£16.10	<b>£108.10</b>
<input type="checkbox"/> As above [student]	£ 46.00	£ 8.05	<b>£ 54.05</b>
<input type="checkbox"/> Non-members	£161.00	£28.17	<b>£189.17</b>
<input type="checkbox"/> Non-member students	£ 69.00	£12.07	<b>£ 81.07</b>
<input type="checkbox"/> I wish to make a poster presentation			

**PLEASE REGISTER BY 30 NOVEMBER 2007 IF POSSIBLE**

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