

UK Magnetics Society

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www.ukmagsoc.org

one day seminar

Noise in Electrical Machines

Wednesday, 4 February 2009

at

**Cardiff University,
School of Engineering**

Noise is a major concern to the designers and users of electrical machines. The sources of noise in electromagnetic cores include the effects of magnostriiction and Maxwell forces between laminations. Many factors are known to affect the acoustic noise generated by these cores including stress, magnetisation conditions and mechanical resonance but the relationship between material properties, building factors and noise in the electrical machine is not well understood. The magnetostriction of materials can now be characterised in the laboratory under simulated conditions but standardisation of these measurements is still some way from being achieved. This seminar aims to explore the issue of acoustic noise in electromagnetic and electromechanical machines: its causes and mitigation in transformer, inductor and rotating machines and the implications for machine builders particularly with respect to the environmental constraints within which they must operate.

P R O G R A M M E

Chairman: Dr Phil Anderson, Cardiff University, School of Engineering

Chairman: Dr Chris Riley, Magnet Applications Limited

from 0900 REGISTRATION/COFFEE

1000 **WELCOME/INTRODUCTION**

1345 ***Contribution of Magnetostriction to the Vibrations of Electrical Machines: Measurement, Modelling and Calculation***

1015 ***Aspects of Noise associated with GO Electrical Steels in Transformer Applications***
Mr Keith Jenkins, Cogent Power Limited

Dr Tom Hilgert, Ghent University, Dept of EESA, Belgium

1045 ***Stress Sensitivity of Magnetostriction in Grain Oriented Silicon Steels***
Dr Piotr Klimczyk, Cardiff University, Wolfson Centre for Magnetics

1415 ***Identification and Correction of Acoustic Noise in Axial Flux Machines***
Dr Nigel Jakeman, GenDrive Limited

1115 ***Noise in Power Transformers - models for generation, transmission, and propagation***
Dr Anders Daneryd, ABB Corporate Research Centre

1445 TEA/COFFEE

1515 ***Noise and Vibration in Fractional Slot Permanent Magnet Brushless Machines***
Professor Qiang Zhu, University of Sheffield, Dept of Elec & Elec Engineering

1145 ***Low Noise Power Transformers - More Energy in Large Cities with Less Noise***
Dr Peter Hamberger, Siemens Transformers Austria GmbH & Co KG

1545 ***Reducing Acoustic Noise on Reciprocating Engines by Intelligent Control of Electrical Machines***
Dr Krzysztof Wejrzanowski, Cummins Generator Technologies

1215 LUNCH/POSTERS

1615 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 one-day seminar **Noise in Electrical Machines**, to be held on Wednesday, 4 February 2009 at Cardiff University and enclose remittance to cover technical sessions, seminar documentation, refreshments and lunch (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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