

## Professor Rex Harris

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### Contact details

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### About

#### Professional Development:

- Fellow, The Royal Academy of Engineering
- Fellow, The Institute of Materials
- Senior Member, IEEE
- Member of the IoP Magnetism Group
- Member of a Technology Foresight Panel
- Member of EPSRC College
- Past President of the UK Magnetics Society and Ewing Lecturer
- Past Chairman of International Workshop on Rare Earth Magnets
- Visiting Professor, IFW Dresden
- Visiting Professor, Josef Stefan Institute, Slovenia

### Qualifications

- DSc, Birmingham, 1987
- PhD, Birmingham, 1964
- BSc, Birmingham, 1960

### Research

#### Research Interests:

- The alloy chemistry of rare earths with a particular interest in cerium
- Processing, properties and applications of permanent magnets based on rare earth- transition metal alloys
- The nature of the interactions of hydrogen with materials
- The use of hydrogen in materials processing and as an energy vector

### Publications

#### Recent Publications

MA Riley, AJ Williams, JD Speight, AD Walmsley, IR Harris. 1999. Investigation into the failure of dental magnets, *Int. Journal of Prosthodontics*, 12(3), 249.

AS Pratt, DB Willey, IR Harris. 1999. High performance metal hydride alloys for rechargeable battery technology, *Platinum Metals Rev.*, 43(2), 50-58.

N. Martinez, AJ Williams, IR Harris. 1999. A Study of the constituent phases and magnetic properties of hydrogen-treated Sr hexaferrite during calcination, *J. of Materials Science*, 34, 2401-2406.

M. Kubis, O. Gutfliesch, K-H Muller, IR. Harris, L. Schultz. 1999. Microstructure and HDDR-processing of as-cast Sm<sub>10</sub>Fe<sub>88.5</sub>Zr<sub>1.0</sub>, *J. Mag. and Magnetic Materials*, 196-197, 297-298.

B Cockayne, MJ Crosbie, NA Smith and IR Harris, 1997. Precipitate identification in Ti-doped YA103 single crystals, *Journal of Crystal Growth*, 173, 456-459, ISSN: 0022-0248

O Gutfleisch, A Kirchner, W Gunberger, D Hinz, R Schafer, L Schultz, IR Harris and K-H Muller. 1998. Backward extruded NdFeB HDDR ring magnets, *Journal of Magnetism and Magnetic Materials*, 183, 359-364. ISSN: 0304-8853

JA Horton, L Heatherly, DJ Branagan, CH Sellars, OM Ragg and IR Harris. 1997. Consolidation, magnetic and mechanical properties of gas atomized and HDDR Nd<sub>2</sub>Fe<sub>14</sub>B powders. *IEE Transactions on Magnetics*, 33(4), 3835-3837. ISSN: 0018-9464

RE Smallman, IR Harris and MA Duggan. 1997. Microstructure and materials processing. Journal of Materials Processing Technology, 63, 18-29. ISSN: 0924-0136

A Kianvash and IR Harris. 1998. The influence of free iron on the hydrogen decrepitation capacity of some Nd(Pr)-Fe-B alloys, Journal of Alloys and Compounds, 279, 245-251. ISSN: 0925-8388

M Kubis, K-H Muller, L Schutz, O Gutfleisch and IR Harris. 1998. Hydrogenation and disproportionation of Sm<sub>2</sub>Fe<sub>17</sub>-xGax at high hydrogen pressures, Journal of Applied Physics, 83(11), 6905- ISSN: 0021-8979

RS Mottram and IR Harris. 1998. Production of sintered NdFeB magnets by a powder blending technique. (In L. Schultz, K-H Muller, Eds., 15th International Workshop on Rare-Earth Magnets and Their Applications), Dresden, 30 August - 1 September, 1, 473-479. ISBN: 3883556

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