

## Professor Martin Freer BSc, PhD, FInstP

Head of Nuclear Physics  
Director of the Birmingham Centre of Nuclear Education and Research  
Director of the Birmingham Energy Institute (BEI)

[School of Physics and Astronomy \(/schools/physics/index.aspx\)](/schools/physics/index.aspx)

### Contact details

Telephone **+44 (0) 121 414 3384** (tel:+44 121 414 3384)

Email [freerm@adf.bham.ac.uk](mailto:freerm@adf.bham.ac.uk) (mailto:freerm@adf.bham.ac.uk)

School of Physics and Astronomy  
University of Birmingham  
Edgbaston  
Birmingham  
B15 2TT  
UK



### About

Professor Martin Freer is head of Nuclear Physics, Director of the [Birmingham Energy Institute \(BEI\) \(/research/activity/energy/index.aspx\)](/research/activity/energy/index.aspx) and the Birmingham Centre for Nuclear Education and Research at the University of Birmingham. His main research area is the study of the structure of light nuclei, using nuclear reactions. This research is performed at international facilities worldwide. In addition, he is actively engaged in promoting research and educational programmes to support the UK's investment in nuclear power generation. He received the Friedrich Wilhelm Bessel Prize, Humboldt Foundation, Germany in 2004 and the Rutherford Medal (IoP) in 2010.

### Qualifications

- Fellow of the Institute of Physics
- PhD in Nuclear Physics, University of Birmingham, 1991
- BSc. (Hons) Maths and Physics, Aston University, 1987

### Biography

Martin Freer obtained his PhD in Nuclear Physics in 1991 from the University of Birmingham.

Thereafter he worked at the Argonne National Laboratory on the heavy-ion accelerator programme (ATLAS).

In 1993 he returned to the UK as an SERC/EPSCRC Advanced Fellow and then went on to become a member of the academic staff of the School of Physics and Astronomy in 1998. He is now head of Nuclear Physics and Director of the Birmingham Centre for Nuclear Education and Research and the Birmingham Energy Institute (BEI).

In recognition for his contribution to the field of nuclear clustering (the study of clusterisation in nuclear matter) he received the Friedrich Wilhelm Bessel Prize, Humboldt Foundation, Germany in 2004 and the Rutherford Medal (IoP) 2010.

He has served on a number of international advisory panels for both scientific facilities (GANIL, France – chair; iThemba, South Africa) and for the Finland Academy. He has also served on the UK Nuclear Physics Grants Panel (STFC) and is chair of the Nuclear Physics Advisory Panel (STFC).

### Teaching

#### Teaching Programmes

- Year 1: Optics and Waves
- Year 2: Physics and Communication Skills
- Year 3: Nuclear Physics
- Year 3: General Physics
- Year 4: Nuclear Physics
- Year 4: Projects
- Postgraduate: Electronics
- Postgraduate: Laboratories

### Postgraduate supervision

PhD's in Nuclear Structure.

### Research

#### Research Themes

- Nuclear Structure and Nuclear Reactions
- Neutrinoless Double Beta Decay

## Research activity

- Member of the R3B collaboration at FAIR, GSI, Germany

## Other activities

- Chair of the Nuclear Physics Advisory Panel
- Member of UK Nuclear Physics Advisory Panel
- Advisor to Finish Academy
- Chair of GANIL Programme Advisory Panel (France)
- Previous member of the iThemba Scientific Advisory Committee

## Publications

Freer M. (2010), Clusters in Nuclei, Scholarpedia, 5(6):9652. doi:10.4249/scholarpedia.9652 (<http://www.scholarpedia.org/>)

Freer, M., et al. (2009), 2+ excitation of the C-12 Hoyle state, Phys. Rev. C 80: 041303

Catford, W.N., Freer M., et al. (2010), Migration of Nuclear Shell Gaps Studied in the d(Ne-24, p gamma)Ne-25 Reaction, Phys. Rev. Letts. 104: 192501

Freer, M., et al., (2006)  $\alpha$ :2n: $\alpha$  structure in  $^{10}\text{Be}$ , Phys. Rev. Letts. 96; 042501

Freer, M. (2007) The clustered nucleus—cluster structures in stable and unstable nuclei, Rep. Prog. Phys. 70 No 12; 2149

von Oertzen, W., Freer, M. and Kanada-En'yo Y. (2006), Nuclear clusters and nuclear molecules, Physics Reports 432; 43

Ashwood, N.I, Freer, M., et al. (2004) Helium clustering in neutron-rich Be isotopes, Lett. B 580; 129

Freer, M., et al., (1999) Exotic Molecular States in  $^{12}\text{Be}$ , Phys. Rev. Lett. 82; 1383

## Expertise

Nuclear physics; nuclear education; nuclear power research; pure nuclear science; waste management; decommissioning; energy

## Languages and other information

Martin is leading the University of Birmingham's Policy Commission on **Nuclear Energy** (<http://www.birmingham.ac.uk/research/impact/policy-commissions/index.aspx>)

- Chair of the Nuclear Physics Advisory Panel
- Member of UK Nuclear Physics Advisory Panel

## Media experience

**[Professor Martin Freer talks about the Nuclear Energy Policy Commission \(/Audio/news/Martin-Freer-podcast.mp3\)](#)**

