University of Birmingham

Dr Garry Tungate BSc, PhD

Senior Lecturer

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About

Dr Tungate works on laser spectroscopy of radioactive isotopes to measure their ground state properties,- size, deformation, magnetic moment and spin. This requires the production of short-lived nuclear species, their extraction from the reaction chamber and the formation of an ionic beam for interrogation by a narrow band width laser beam. This work is performed at the IGISOL Facility at the University of Jyväskyä and ISOLDE at CERN. Dr Tungate has been a co-author on over 100 papers.

Qualifications

- PhD nuclear Physics, University of Birmingham, 1977
- BSc (Hons), Physics, University of Birmingham, 1974

Biography

After researching into the elastic scattering of polarized deuterons for his PhD Garry Tungate studied the scattering of polarized lithium ions at the Max-Planck Institute for Nuclear Physics in Heidelberg (1978-1980). He then worked at the TUNL laboratory in the USA studying polarized neutrons at 8-14 MeV. In 1982 he returned to Heidelberg to study scattering and reactions with polarized lithium and Sodium before moving to the University of Birmingham in 1986 to continue this work at the NSF at Daresbury. Following the closure of the NSF in 1993 Dr Tungate briefly worked on nuclear breakup spectroscopy and nuclear molecules. He has since been active in research at the IGISOL at the University of Jyväskylä to measure nuclear ground state properties of short lived nuclear isotopes and isomers.

Teaching

- Year 1 skills programme
- Year 3 Nuclear laboratory
- Year 3 Fission and Fusion
- Year 4 Fission and Fusion
- Year 3 Teaching in schools module
- Year 4 Project supervision
- Deputy Welfare Tutor

Postgraduate supervision

- Supervision of research PhDs in nuclear physics

Research

RESEARCH THEMES

- Laser spectroscopy of radioactive ions
- Nuclear Breakup and nuclear molecules
- Polarised heavy ion scattering and reactions
- Polarised neutron scattering
- Polarized deuteron scattering

Other activities

- Chair of AGATA oversight Committee STFC, 2009-10
- Member of Rutherford Conference Organising Committee, 2010-11

Publications

- Cheal B,et al. (2007). The shape transition in the neutron-rich yttrium isotopes and isomers. Phys Lett B 645, 133-137
- Cheal. B, et al. (2003) Collinear laser spectroscopy of neutron-rich cerium isotopes near the N=88 shape transition. J Phys G 29 2479-2484
- Tungate G, et al. (1992) Deviations from Tidal Symmetry in Polarized Li-7 Excitation. J. Phys G 18 367-378
- Tungate, G, et al. (1986) Elastic and Inelastic-Scattering of Polarized Li-7 from Sn-120. J Phys G 1001-1016
- Guss PP, et al. (1985) Cross-sections and Analyzing Powers for Fast-neutron Scattering to the Ground and 1st Excited-states of Ni-58 and Ni-60. Nucl Phys A 438 187-211
- Basak AK, et al. (1977) Polarization Transfer in Si-28(d,p)Si-29(gs) Reaction and Deuteron D-State Effects. Nucl Phys A 275 381-394

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