Open University

Partner Contact person : N.J. Mason

The Open University hosts one of the UK's largest astronomy, space and planetary science research groups with over 100 academic and research staff based in its Centre for Earth, Planetary, Space and Astronomy Research (CEPSAR). The staff playing a leading role in several of Europe's and NASA's space missions and as such are a major user of atomic and molecular data. In 2004 the atomic, molecular and plasma (AMP) physics research group was established to support CEPSAR based research through a fundamental research programme to generate atomic and molecular data. Led by Professor N J Mason the AMP group studies the interaction of electron interactions with atom and molecules group and photoabsorption cross sections of molecular systems both in the gas and condensed phase. Such data is currently being compiled into data repositories for use in astrochemistry and plasma processing models,

the latter in collaboration with Quantemol, a spin off company with one of the other partners (UCL). The OU AMP group is recognised as one of the international experts in the assessment of both electron interaction databases and photoabsorption cross section data.

The OU AMP Research group leads two major EU research collaborations, the Electron Induced Processing At the Molecular Level (EIPAM) network, the Electron and Positron Induced Chemistry (EPIC) - a Framework VI Initial training Network and is a co-chair of the Electron Controlled Chemical Lithography Network (ECCL) programmes that have brought together the EU's leading research groups in electron-molecule interactions to coordinate ERA research in electron induced chemistry. The AMP group also leads the EU Japan research network on plasma processing bringing together academic researchers with data users in the plasma and semiconductor industries. The AMP group has led an EU wide programme in the study of atomic and molecular processes involved in radiation damage and the study of the effect of ionizing radiation of biomaterial (including DNA and other cellular material). The AMP group is also a member of the UK and EU ITER Fusion research programmes, perhaps the largest user of atomic and molecular data in the ERA.

Role in Project: The OU will lead NA2 the dissemination and training programmes exploiting its well established links with atomic and molecular user communities (astrochemistry, plasma and semiconductor industry, ITER fusion programme and radiation sciences) to ensure that the VAMDC e-infrastructure has the widest consultation with its client base. The OU will also integrate its data depositories into the VAMDC databases (SA1), including the molecular solids physical properties databases (JRA1) and will be involved in the development of publishing tools (JRA2) and query protocols (JRA3), whilst contributing to the quality assurance of data and resources (SA2).

Key persons :

N J Mason, Professor of Molecular Physics

Expertise : Atomic & Molecular Physics, he is a leading member of the Framework VII I3 programme for planetary Science 'Europlanet' which includes the development of the Integrated Data Information Service (IDIS).

Role in VAMDC project : NA2 coordinator, JRA1

Dr J Gorfinkiel: Lecturer

Expertise : specialising in electron-molecule interactions

Role in VAMDC project : SA2

Dr D Jaksch; Postdoctoral research

Expertise : electron-molecule collision database

Role in VAMDC project : SA1, JRA2, JRA3

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