



Seminar

Positron Interactions at Low Energies

Stephen J. Buckman

Director, Research School of Physics and Engineering and
ARC Centre for Antimatter Studies
Australian National University
Canberra

Time: 4:00pm, May. 9, 2013 (Thursday)

时间: 2013年5月9日 (周四) 下午4:00

Venue: Room 607, Science Building 5

地点: 理科五号楼607会议室



Abstract

Positrons (the electron antiparticle) are ideal vehicles for scientific research as they not only hold much fundamental interest in the way in which they interact with matter, but also have considerable applications in fields such as material science and medical diagnostics. This talk will review what we know about positron-matter interactions, touch on some of the experimental and theoretical challenges that their study poses, reveal some of the exotic complexes they form such as positronium and positronic complexes, and discuss some of their interesting applications and how fundamental studies can help underpin those.

I will also discuss more generally the research undertaken at the Research School of Physics and Engineering – the biggest Physics and Engineering School in Australia – and explore possibilities for collaboration.

About the Speaker

Stephen Buckman is currently the Director of the Research School of Physics and Engineering, ANU. He has been involved in atomic and molecular physics research since completing his PhD at Flinders University in 1979. After postdoctoral work in the UK (Manchester) and the USA (JILA, Colorado) he established a broad-based atomic collisions research activity at the ANU in the mid 1980's.

This research has focused on absolute scattering measurements of low energy, electron-driven processes in atoms and molecules, scattering from excited atoms and molecules and the elucidation of resonance excitation mechanisms in electron collisions. Current interests involve benchmark studies of positron collisions with atoms and molecules, positron bound and quasi-bound states (resonances), positron and electron interactions with bio-systems and positron beam technology for atomic, molecular and materials science studies. A prolific researcher, he has more than 190 publications mostly in Top Tier 1 journals over the last 20 years, has an h-index of 31, and more than 3200 citations. Since May 2012, he holds the position of Distinguished Visiting Professor at University of Malaya.

He has been an external assessor for funding agencies in the USA, Canada; NATO; Serbia, Switzerland, the European Union; and the Australian Research Council.