

# Warwick Chemistry Departmental Seminar

*Hosted by the Measurement and Modelling Cluster*



**Professor Stuart Mackenzie**

University of Oxford, Physical and Theoretical Chemistry Laboratory

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4.00 pm, Physics Lecture Theatre, Science Concourse. ALL WELCOMED

## **‘Infrared and velocity map imaging studies of reactive entrance-channel complexes’**

Small isolated metal clusters and metal–ligand complexes have long since been proposed as tractable model systems for heterogeneous catalysis. Certainly, gas–phase clusters provide idealized environments for the study of fundamental interactions which may lead to a better understanding of the reactive pathways involved. Our laboratory takes a multi–faceted approach to studying different parts of the reactive potential energy surfaces involved, with infrared spectroscopy used to probe pre–reactive (entrance–channel) complexes and velocity map imaging for recording final quantum–state distributions in photofragmentation reactions. Of particular interest are systems in which, having determined the structures of species involved, infrared is used to drive cluster surface reactions yielding insight in activation barrier heights.

My own interest in this area stems from my time in Warwick studying single–collision reactivity of metal clusters. In this talk, I will give an overview of the problems in which we are interested and present results from recent studies investigating a diverse range of systems.