

# Christopher James Heard

**Nationality:** British

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## Education

**2010-present:** Doctoral Researcher, group of Professor R. L. Johnston  
University of Birmingham

**2006-2010:** BA + MSci, Natural Sciences  
Downing College, University of Cambridge

**2004-2006:** GCE A levels  
Mathematics, Physics, Chemistry, Biology  
King Edward VI school, Bury St Edmunds

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## Relevant experience

### PhD project 2010-present

Computational exploration of the energy landscapes of mono- and bimetallic nanoparticles on empirical potential and density functional levels of theory. Structure determination as a function of composition, size and geometry for a range of systems, with serial and parallel global optimisation software. Analysis of underlying potential energy surfaces, for transition paths, rearrangements and dynamics.

### Masters Project 2009-2010

With Dr Mark Miller and Prof. Marie-Pierre Gaigeot, the simulation and structural optimisation of charged model liquid clusters, along with investigation of their thermodynamic properties. The work required use of in-house codes for energy landscape searches (Parallel Tempering Monte Carlo, and Basin-Hopping), data analysis through scripting, and vibrational analysis with a C++ code.

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## Skills

Speed Reading

Basic Fortran and C++ programming

Basic Perl and shell scripting

Experience with Unix systems

Trainee system administrator for the computational sector of the School of Chemistry.

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