

Research Directions

Office of Research Services

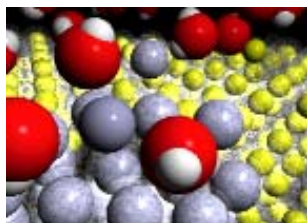
ANIMATED COLLABORATION

Roy Tasker, School of Science, Food and Horticulture has formed a collaboration with the University of Northern Colorado (UNC), Stanford and Drake Universities, bringing together the disciplines of chemistry, biology, education and cognitive science.

The international research group has been awarded a three year US National Science Foundation ROLE Grant worth USD1.09M for their project "Design Principles for Effective Molecular Animations"

"The project will be studying the learning potential of VisChem animations in chemistry that portray the molecular world, and developing design principles to exploit their learning potential" said Associate Professor Tasker.

Dynamic, molecular-level animations like VisChem are used increasingly in chemistry and biology to help students visualize chemical structures and processes. However, the simulations are often complex and can lead to misconceptions because they do not adequately convey the spatial and temporal properties of chemical processes. The animated molecules can also be misinterpreted. The major problem is that at present, student misconceptions can go undetected — they are rarely exposed by conventional teaching assessments.



This project aims to reveal how students perceive and interpret various molecular animations and to develop design principles for creating more effective static graphics and dynamic visualizations in chemistry.

Frame from VisChem animation depicting Silver ions being reduced on Copper metal.

Contact Details

Dr Roy Tasker
can be contacted via email
r.tasker@uws.edu.au

Web Site for
information on the
VisChem Learning
Design

<http://www.learningdesigns.uow.edu.au/exemplars/info/LD9/index.html>