

New South Wales

Southern Cross University

DP0987351 Dr AL Rose; Dr JC Rose

Approved Project Title **A new paradigm for the geochemistry of mineral precipitation and dissolution in aquatic systems: Polymer-based numerical modelling**

2009 : \$ 110,000

2010 : \$ 70,000

2011 : \$ 70,000

2012 : \$ 65,000

2013 : \$ 65,000

Primary RFC 2603 GEOCHEMISTRY

QEII Dr AL Rose

Administering Organisation Southern Cross University

Project Summary

The ability to predict the formation and dissolution of solids (minerals and precipitates) in aquatic systems is currently constrained by limitations of the traditional thermodynamic approach. A new approach based on the kinetics of the underlying chemical reactions is expected to overcome these limitations and greatly improve the ability to describe these processes. This new fundamental knowledge will be useful in many diverse fields including aquatic geochemistry, soil chemistry, water engineering, and nanotechnology. The new approach will be specifically applied to improve understanding of processes related to the globally significant environmental issues of marine iron fertilisation, ocean acidification and acid sulfate soils.