



THE UNIVERSITY
of ADELAIDE

Summer Research Scholarships

School of Chemical Engineering

Project Titles 2017/18

Fast detection of precious metal using laser technology

Supervisor: [A/Prof Zeyad Alwahabi](#)

3-D printing of graphene composites for emerging applications

Supervisors: Dr Martin Cole and [Prof Dusan Losic](#)

Adsorption of ionic liquid on metal and its effect on corrosion inhibition

Supervisors: [Prof Namita Roy Choudhury](#)

Biomimetic responsive tough hydrogel from protein based elastomer

Supervisors: [Prof Namita Roy Choudhury](#)

Interface engineering of donor and acceptor for OPV application

Supervisors: [Prof Namita Roy Choudhury](#)

A new risk and safety analysis of failure in solid-liquid extractive food plant

Supervisor: [Dr K R \(Ken\) Davey](#)

Friday 13th modelling of critical performance of a double-pipe heat exchanger and comparison with two smaller units

Supervisor: [Dr K R \(Ken\) Davey](#)

Friday 13th risk and safety analysis of critical performance of a counter-flow heat exchanger cooling a corrosive liquid

Supervisor: [Dr K R \(Ken\) Davey](#)

Predicting conditions for unexpected failure of critical heat up rates

Supervisor: [Dr K R \(Ken\) Davey](#)

Co-production of biochar and bioenergy using agricultural residual

Supervisor: [Dr Philip Kwong](#)

Environmental mitigations using biochar from agricultural residual

Supervisor: [Dr Philip Kwong](#)

Graphene composites for water purification and heavy metal adsorptions

Supervisors: [Prof Dusan Losic](#)

Nanotechnology approach for pest control

Supervisors: [Prof Dusan Losic](#)

Dynamics of Two-Phase displacement and flow in eccentric annuli

Supervisor: [A/Prof Dzuy Nguyen](#)

Nanotechnology for clean energy

Supervisor: [Prof Shizhang Qiao](#)

Nanostructured materials for drug/gene delivery

Supervisor: [Prof Shizhang Qiao](#)

Combination of 3D printing microfluidics technology with nanoporous anodic alumina photonic crystals for optical sensing applications

Supervisor: [Dr Abel Santos](#)

Fine tuning of optical signals in Nanoporous Anodic Alumina Photonic Crystals and its polymeric replicas

Supervisor: [Dr Abel Santos](#)

Solid particle thermal energy storage for concentrating solar power applications

Supervisor: [Dr Woei Saw](#)

Solid-liquid heat exchanger for concentrating solar power applications

Supervisor: [Dr Woei Saw](#)

Graphene, emerging material for the 21st Century: Preparation

Supervisors: [Dr Diana Tran](#) and [Prof Dusan Losic](#)

Preparation of highly conductive Graphene/Epoxy composite films for electromagnetic adsorption

Supervisors: [Dr Tran T Tung](#) and [Prof Dusan Losic](#)

Hybrid of Graphene and Carbon Nanotubes for non-Metallic ultra-wide band antenna application

Supervisors: [Dr Tran T Tung](#) and [Prof Dusan Losic](#)

Hydrothermal carbonization of macro-algae as part of an algal bio-refinery

Supervisor: [Dr Philip van Eyk](#)

Hydrothermal processing of agricultural residues for renewable fuel production

Supervisor: [Dr Philip van Eyk](#)

Lab-on-a-chip chromatography for advanced biomolecule separations

Supervisors: Dr Jeongha Yoo and [Prof Dusan Losic](#)

Computational fluid dynamics simulation of liquid expansion bed

Supervisor: [Dr Hu Zhang](#)

Computational fluid dynamics simulation of nano-fluid flow for enhancing heat transfer

Supervisor: [Dr Hu Zhang](#)

Numerical simulation of tissue growth in a perfusion bioreactor

Supervisors: [Dr Hu Zhang](#)

Population balance equation simulation of nanoparticle aggregation process

Supervisors: [Dr Hu Zhang](#)