Examples of Discovery Projects commencing in 2014

Western Australia

Western Australian universities will receive more than $21.7 million through the Australian Research Council Discovery Projects scheme for 55 new research projects commencing in 2014.

Some examples of the WA projects are provided below.

To view the summaries of all successful projects, visit the ARC announcements page.

The University of Western Australia
Lead Chief Investigator: Professor Giacinta Parish (DP140100827)
Summary: Water recycling is becoming critical for water supplies worldwide, due to declining natural supplies of fresh water, combined with increasing demand. The greatest community and industry concerns over recycled water are quality assurance and relative cost. Ensuring quality requires monitoring of contaminants, yet no single real-time technology exists to measure the myriad of potential contaminants. This project will develop technology using AlGaN/GaN-based transistors, sensitised to different contaminants, enabling multi-analyte real-time sensor arrays. In situ monitoring systems based on such arrays will be fast, accurate, reliable, low-cost, and applicable to a broad variety of water recycling projects.
ARC funding: $540 000 over three years

Curtin University of Technology
Lead Chief Investigator: Associate Professor Lynn Meuleners (DP140101299)
Summary: Despite the high prevalence of cataract among the older population, there is limited evidence on the impact of first and second eye cataract surgery on driving outcomes. This prospective study will use naturalistic in-vehicle driver monitoring devices and a state-of-the-art driving simulator to examine the association between clinical measures of vision, refractive management, driving patterns, self-regulation and driving performance for bilateral cataract patients before first eye surgery, between surgeries and after second eye surgery. The results will inform Ophthalmology and licensing authorities regarding surgical and refractive management as well as fitness to drive assessments for older drivers with bilateral cataract.
ARC funding: $353 000 over three years

The University of Western Australia
Lead Chief Investigator: Professor Paul Low (DP140100855)
Summary: Decades of societal progress have been achieved through advances in semiconductor technology during what might be termed the Silicon Revolution. The International Technology Roadmap for Semiconductors has identified molecular components as a solution to problems including data storage and very high-density circuits over the next 15 - 20 years. This project will target some of the difficult challenges in realising molecular electronics technology; molecular contacts to surfaces; function beyond the wire; transistor-like response. This project brings together an international team with expertise in chemical synthesis, electronic structure determination and single molecule conductance measurements to address these challenges.
ARC funding: $400 000 over three years