Fellowship project summary:
A thorough understanding of how nanoparticles interact with biological systems is imperative if advances are to be made in using nanotechnology for therapeutic applications. Fundamental aspects of nanoparticle transport, targeting and cell uptake will be investigated. This project aims to design novel nanoparticulate systems for the delivery of both an endogenous signalling molecule and genes to cells. The project aims to inform future optimal design criteria for bespoke nanoparticle delivery systems.

About Professor Davis
Professor Thomas Davis is Director of the new ARC Centre of Excellence in Convergent Bio-Nano Science and Technology. Nanomedicine is a rapidly emerging field revolutionising therapy in a wide range of diseases and the centre will focus on new scientific and social understanding, underpinning advances in bionanotechnology.

Professor Davis is a leading polymer scientist/nanotechnologist with a proven performance in producing highly influential research. This is exemplified by his presence in the latest ISI most highly cited listing, covering his performance over the last decade placing him as the most cited polymer scientist and/or nanotechnologist in Australia. He has published more than 360 refereed papers.

Holding two senior ARC Fellowships—an Australian Professorial Fellowship and an Australian Federation Fellowship—his scientific contributions have embraced polymerization kinetics, nanostructured films, nanoparticles, protein conjugates, nanoparticle enhanced bio-imaging, gene delivery and targeted therapeutics. Davis also has significant experience in developing novel chemistry for bioconjugation reactions to proteins, peptides and DNA. Davis has worked closely with the Children’s Cancer Institute on drug and gene delivery (CI Kavallaris) using novel biodegradable nanoparticle systems.

Find out more about Professor Davis and his research by visiting the ARC Centre of Excellence in Convergent Bio-Nano Science and Technology website.

For more information on the Australian Laureate Fellowships scheme, visit the ARC website.