






CleanTech & Materials Innovation Pipeline

UNIQUEST

Company of CleanTech Technology	Description	Managed By	Discovery	Patent Application	Proof of Concept	Prototype/ Pilot	Customer Trials	Product Launch
Energy Generation and Storage								
 Brisbane Materials	Anti-reflective coatings for increased energy production from solar cells	Brisbane Materials Technology Pty Ltd	●	●	●	●	●	
O ₂ Separation Membranes	Hollow fibre perovskite membranes for low cost oxygen separation	UniQuest Pty Ltd	●	●	●			
High Energy Battery	High energy density, low cost lithium ion battery anode	UniQuest Pty Ltd	●	●				
Waste heat recovery thermo-electric materials	New thermoelectric material for converting waste heat into electricity	UniQuest Pty Ltd	●	●				
Hydrogen Generation and Storage								
 hydrexia	Hydrogen storage using magnesium alloys	Hydrexia Pty Ltd	●	●	●	●		
 AQUAHYDREX	Low cost, low CO ₂ hydrogen production from water	AquaHydrex Pty Ltd	●	●	●			
Hydrogen storage material	Porous magnesium hydrogen storage	UniQuest Pty Ltd	●	●	●			
Biofuel and Biochemical Production								
Efficient hydrogen production using photosynthetic microalgae	Engineered green microalgae route to renewable hydrogen production	UniQuest Pty Ltd	●	●	●	●		
SupaCeed	Enhanced oil production for biodiesel feedback	UniQuest Pty Ltd	●	●	●			
Australia China Biofuels	Yield promoter technology for sugarcane	Australia China Biofuels Pty Ltd	●	●				
Carbon Capture and Storage								
CO ₂ capture using calcium looping	Reusable calcium oxide and nanoparticle-based CO ₂ capture materials for power generation	UniQuest Pty Ltd	●	●	●			
CO ₂ sequestration via mineral carbonation	Sequestration of CO ₂ in highly-stable magnesium carbonate	UniQuest Pty Ltd	●	●				
CO ₂ conversion to fuel	CO ₂ capture and solar driven conversion to fuels	UniQuest Pty Ltd	●	●				
Water and Environmental								
 Cloervis	Low cost and effective chemical dosing for prevention of sewer corrosion and odour	Cloervis Pty Ltd	●	●	●	●	●	
MetalloTek	Metal binding polymer particles and metal tolerant plants for remediation of metal contaminated land	MetalloTek Pty Ltd	●	●	●	●		
 Bilexys	Wastewater to valuable chemicals	UniQuest Pty Ltd	●	●	●	●		
Ceramipore	Ceramic membranes for low energy desalination and salt recovery	UniQuest Pty Ltd	●	●	●			
Arsenic removal from water	High capacity arsenic removal media for contaminated water	UniQuest Pty Ltd	●	●				



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Workplace Health and Safety								
CoolMe™ vest	Improved productivity and safety in hot working conditions	UniQuest Pty Ltd	●	●	●	●	●	
Advanced Materials								
	Manufacture-friendly additives for superior plastics: scratch resistant acrylics and tougher thermoplastic polyurethanes, with retained flexibility	Tenasitech Pty Ltd	●	●	●	●	●	
	Reversible surfactants with the ability to reversibly stabilise and break emulsions and foams	Pepfactants Pty Ltd	●	●	●	●		
Titanium alloy coatings	High temperature oxidation resistant coatings for titanium alloys	UniQuest Pty Ltd	●	●	●			
Biofuel and Biochemical Production								
Efficient hydrogen production using photosynthetic microalgae	Engineered green microalgae route to renewable hydrogen production	UniQuest Pty Ltd	●	●	●	●		
SupaCeed	Enhanced oil production for biodiesel feedback	UniQuest Pty Ltd	●	●	●			
Australia China Biofuels	Yield promoter technology for sugarcane	Australia China Biofuels Pty Ltd	●	●				
R&D Expertise								
	Description							
Advanced biofuels	Multi-faculty approach on sustainable, 2nd generation 'drop-in' biofuels. R&D is focused on non-food competing biomass resources. Infrastructure includes a 250,000 litre pilot plant for microalgae to biofuel production							
CO ₂ abatement	Pioneering research in the field of carbon capture and storage to reduce emissions in coal and gas reliant countries, including Australia, China, India and the USA							
Materials performance	Expertise in metal and non-metal failure analysis. Systematic investigation of the mechanisms and causes of equipment failure and damage							
Renewable energy and storage	Chemists and engineers work on a broad suite of challenges from renewable energy deployment and storage to pioneering research targeting specific challenges with existing technologies							
Water	Award winning multidisciplinary researchers and research portfolio covers the breadth of the urban industrial water cycle with proven success in achieving sustainable outcomes for the global water industry							

About The University of Queensland (UQ)

- Leading Australian university in research and its commercialisation
- \$365 million research income (2012)
- Ranked in the world's top 100 universities by *Times Higher Education World Reputation Rankings* and *Academic Ranking of World Universities*
- UQ rated above world standard in more fields of research than any other Australian university (*2012 Excellence in Research for Australian (ERA) survey*).

About UniQuest Pty Ltd

- Main commercialisation company of UQ
- One of Australia's largest and most successful university commercialisation groups
- From an intellectual property portfolio of 1500+ patents, more than 70 companies created
- Benchmarks in the top10 percent globally for university-based technology transfer
- UniQuest-licensed UQ innovations are now generating annual sales of more than \$1 billion
- Since 2000 more than A\$450 million has been raised to take university technologies to market
- UQ technology, through licensing to GE and Siemens, is embedded in two-thirds of the world's MRI machines
- More than 79 million doses of the life-saving Gardasil® cervical cancer vaccine, patented by UniQuest in 1991, have been distributed throughout 121 countries, including 72 developing countries.

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