

		TRL 1-3	TRL 4-5	TRL 6-7	TRL 8-9
<b>Formulation Technologies</b>					
Crop Protection	Silica carrier particles that encapsulate active ingredients (AI) to provide UV protection, increased rainfastness and easier formulation of hydrophobic AI.		4		
<b>Asset Management</b>					
Dielectrica	Portable advanced transformer and underground cable insulation diagnostic services.			7	
Transformer monitoring with predictive analytics	Partial discharge monitoring which detects minute high frequency discharge.			7	
	Moisture content monitoring through a wireless sensor.			7	
<b>UAVs and Robotics</b>					
Y4	A more efficient quadrotor UAV design with longer duration suitable for industrial applications.			6	
Safety Rotor	A lightweight safety feature for minimizing blade impact in UAV operation.			6	
Novel LIDAR	A completely new approach to LIDAR that can measure range and velocity simultaneously.	3			
Forcesensor	Novel method of detecting force and torque for UAV/robotics and industry.				8
<b>Big Data Solutions – Health, Telecommunications</b>					
Med Rank	Evidence based decision making that brings together more than 10 medical million data sources for custom diagnosis and treatment support.				8
Data Fusion	A new method of sampling and compression that enables the extraction of meaning from large datasets.				8
Digital Pathology	High resolution, efficient software based solution for remote fluorescence pathology. Significant reduction in cost, time and materials.				9
Electromagnetic Calculations	New faster (70-80% time reduction) method of solving Maxwell's equations applicable to a broad range of electromagnetic problems.		4		
Big Data ICU	Data sampling algorithm that connects multivariate ICU time-series data a data bank of medical information to predict potential contamination, infection or organ failure.			6	
Alarm Management System	New faster (70-80% time reduction) method of solving Maxwell's equations applicable to a broad range of electromagnetic problems.		4		
Spectrum Enhancement	New calculation for increased spectral efficiency in telecommunications. Out of band power suppression.		4		
<b>Water and Environmental</b>					
SeweX	Algorithm based software for H2S and corrosion reduction. Commercial projects all over Australia.				9
Microbial Fuel cell	Power source and sensors for continuous measurement of sewer conditions.	3			
Lodomat	For use in wastewater treatment plants: a novel process for increasing biogas production and reducing sludge disposal costs from anaerobic digestion, reducing the cost of nitrogen removal and improving the efficiency of the anammox process.		4		
E-waste Recycling	Low capex/opex hydrometallurgical process for recovering gold and other metals from e-waste.		4		



Advanced Materials		TRL 1-3	TRL 4-5	TRL 6-7	TRL 8-9
Tenasitech	Manufacture-friendly additives for superior plastics: scratch resistant acrylics, nylons and tougher thermoplastic polyurethanes, with retained flexibility.			7	
Magnesium Metals	Light weight alloy features reduction in production cost, a 14% reduction in density and a 7% increase creep resistance. Can be easily produced using current processes. Improves fatigue life of Magnesium parts increasing reliability and safety.		4		
Nanocomposite Elastomers	Strong, tough, yet low modulus elastomers enabled by reinforcement with flexible, tough nanofibers of cellulose.		5		
Nanocellulose	High aspect ratio, extremely tough nanofibers of cellulose for reinforcement and other applications.		5		
Mining Innovation		TRL 1-3	TRL 4-5	TRL 6-7	TRL 8-9
Frother Measuring System	An in-situ device to accurately measure frother concentration in a flotation cell to increase efficiency, yield and revenue of a mining process.		4		
Nickel Cobalt Separation (SAC)	An efficient low cost process for separating nickel and cobalt in MHP processes.		4		
Magnetometer Sensor	Ultrasensitive chip sized detection of magnetic fields for mining resources exploration.	2			
Medical Technologies		TRL 1-3	TRL 4-5	TRL 6-7	TRL 8-9
Vaccine Delivery	Nanoparticle delivery/ adjuvant systems for vaccines that reduce dose number or enable more efficient delivery of DNA vaccines.		5		
High Sensitivity Immunoassays	Nanotechnology-enabled amplification of signals in immunoassay to lower limits of detection.	3			
Brain Scanner	Portable Microwave based brain scanner to precisely identify type of stroke in hospital trials.	2			
R&D Expertise	Description	TRL 1-3	TRL 4-5	TRL 6-7	TRL 8-9
Water remediation	Multiple projects in advanced site remediation, water recycling and tailings improvement.				
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 and Mining	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 mining and water industries.				

### Definition of Technology Readiness Levels (TRLs)

- TRL 1** Basic principles observed and reported
- TRL 2** Technology concept and/or application formulated
- TRL 3** Analytical and experimental critical function and/or characteristic proof-of concept
- TRL 4** Component/subsystem validation in laboratory environment
- TRL 5** System/subsystem/component validation in relevant environment
- TRL 6** System/subsystem model or prototyping demonstration in a relevant end-to-end environment
- TRL 7** System prototyping demonstration in an operational environment
- TRL 8** Actual system completed and "mission qualified" through test and demonstration in an operational environment
- TRL 9** Actual system "mission proven" through successful mission operations

Source: esto.nasa.gov/files/trl\_definitions.pdf

### ABOUT UNIQUEST

UniQuest is the main commercialisation company of The University of Queensland, one of Australia's leading and most innovative teaching and research universities. Ranked in the world's top-50<sup>1</sup>, 100% of UQ's research is at or above world standard.

UniQuest specialises in the transfer of UQ's world-class intellectual property, research outcomes and expertise. UniQuest has a 30 year track record, including the commercialisation of the HPV vaccine Gardasil®, the Triple P Positive Parenting Program, image technology used in two-thirds of the world's MRI machines and Spinifex Pty Ltd – a biopharmaceutical company acquired recently in one of Australia's largest ever biotech deals.

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1 - As measured by the QS World University Rankings (46) and the Performance Ranking of Scientific Papers for World Universities (45)