

PHYSICAL SCIENCES PIPELINE

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Application	Basic Principles	Technology Concept	Proof of Concept	Prototype	Validation
Electronics	Wireless machine-brain interface			Vision and other applications	
	Robotic fruit harvesting			Robotics	
	Non-silicon based low energy transistors	Dirac semi-metal for modulating charge			
Energy	Ammonia production process			PARTNERED	
IT	Ultra-dense optical data transmission over standard fibre			Super high data rate	
	Electrical grid fault location - single sensor detection			Rapid, precise fault detection	
Materials	Magnetic alloys with high induction			PARTNERED	
	Rock breaking SCDA formulation			Rare earth minerals – energy savings	
	Gas diffusion layer (high performance)			CO2 reduction electrolyzers	
	Conductive, transparent organic-metal with strong adhesion			Electromagnetic shielding	
	Graphene dispersal in polymers			Thermal and electrical conductivity	
	Solid acid heterogeneous catalysts			High throughput / high selectivity furfural production	
	Metallurgical coal alternative			Modified brown coal	
	Green cement			Reduced CO2 and waste material feedstock	
Measurement / Analytics	Detection of fumigation agents			Personal protection	
	Road compaction - geomaterial deformation measurement during compaction			Real time, accurate monitoring method	
	Soft X-ray detection based on SnS nanosheets			Sensitive, high res, fast response soft x-ray detector	
Processing / Production	Co-pyrolysis of a mix of end-of-life plastics and waste rubber materials			PARTNERED	
	Continuous filtration system - scalable separation process for manufacture			PARTNERING IN PROGRESS	
	2D Monolayer nanosheet exfoliation			High yield; scalable	
	High-performance gas diffusion layer			Fuel cells	
	Sperm selection method			Fertility	
	Apparatus to boost sperm motility			Fertility	
New catalyst for production of bio-furfural			High throughput / high selectivity		
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CONTACT US

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