MONASH University

MONASH INNOVATION

PHYSICAL SCIENCES PIPELINE

Monash University researchers from the faculties of Engineering, Information Technology and Science have built a rich pipeline of discoveries that are available for partnering. **Check out our pipeline and replenish yours.**

Application	BASIC PRINCIPLES[1]	TECH CONCEPT[2]	PROOF OF CONCEPT[3]	PROTOTYPE[4]	VALIDATION[5]
Energy	Ammonia production process				*New, cost effective method*
	Efficient hydrogen catalysts for HER				*Electrocatalysts for Hydrogen Evolution Reaction*
	Renewable energy storage system				*PARTNERING IN PROGRESS*
Electronics	Next generation low energy transistors	*Dirac semi-metal for modulating charge*			
	New receiving module for visible light positioning				*Indoor positioning*
	Ultralight motor for UAV	*Drones*			
	Orientation-insensitive RFID system				*Item tagging*
	Chipless RFID system using Neural Networks and iSAR	*Using AI to read chipless tags*			
IT	Fader axes 3D mouse				*Precise interaction with augmented reality*
Materials	Metallurgical coal alternative				*Modified brown coal with properties similar to coke*
	Nanowire-based pressure sensors with strain-insensitivity				*Pressure mapping - stretchable*
	Energy absorption fibres				*For anti-penetration applications*
	In situ regenerable active carbon monoliths				*Liquid or gas purification; catalyst and catalyst support*
	Durable sensors using ultrastrong adhesion of nanowires	*Wearable sensors*			
	Magnetic alloys with high induction	*Lightweight motors*			
	Composite membrane for lithium separation	*Lithium production*			
	Corrosion protection of steel				*Graphene coating*
	Cyrene™ polymers with high thermal stability and rigidity/hardness				*Use in coatings*
	Surface coatings with antibacterial properties				*Food / medical applications*
	Photo-reusable adhesives	*Labels*			
	UV activated self-healing acrylates				*Curing of micro-cracks in acrylates*
Measurement / Analytics	Analytical sensor tapes for chemicals and biologicals				*Low cost, long life and stable analytical sensors*
	Electron microscopy sample holder <15nm for reduced electron scattering				*Easy manufacture, improved image quality*
	Multispectral imaging sensor				*Distance / motion / night-sensing*
Processing / Microfluidics	Encapsulation technology for gold extraction				*E-waste and goldmine tailings*
	Encapsulation technology for agtech				*Controlled delivery and release of pesticides, fungicides and nutrients*
	Encapsulation technology for PFAS				*Soil remediation*
	Continuous filtration system	*Scalable separation process for manufacturing - nanoparticles and biological samples*			
	Self-aligned imaging system	*Microfluidics or MEMS device*			
	Microfluidics - Lab on a chip modules				*Sorting / mixing / delivery of droplets / encapsulation of cells*

DEVELOPMENT PHASE: Technology Readiness Levels 1-5 (of 9)

1. **BASIC PRINCIPLES:** Basic principles observed and reported
2. **TECHNOLOGY CONCEPT:** Technology concept and/or application formulated
3. **PROOF OF CONCEPT:** Experimental critical function and/or characteristic PoC
4. **WORKING PROTOTYPE:** Component/subsystem validation in laboratory
5. **VALIDATION:** System/subsystem/component validation in relevant environment

PARTNER WITH MONASH: We seek the best partners to accelerate translation of our opportunities to the marketplace. Monash Innovation are open to a range of commercial pathways and we look forward to exploring the best approach with you.

CONTACT US

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