MEDIA RELEASE

IMCRC collaraboration en route to develop green hydrogen storage solution

Melbourne, 07 December 2021: The Innovative Manufacturing Cooperative Research Centre (IMCRC), advanced materials startup Rux Energy and the University of Sydney have joined forces on a collaborative research project that will deliver game-changing dispatchable hydrogen gas (H_2) tanks, changing the trajectory of Australia's green energy industry.

Currently, the inability to store H_2 efficiently is preventing it from being widely used as a zero-carbon fuel. To combat this, the Sydney-based research project, which commenced in March 2021, has developed new metal-organic frameworks for the high-performance adsorption of H_2.

The new materials are set to be integrated into field-ready tank prototypes for trials and testing with SME and large industry partners in 2022, with the overall goal to deliver affordable green hydrogen for heavy and long-distance electric vehicles by 2025.

Commenting on the project, Rux Energy Founder and CEO Dr Jehan Kanga said the IMCRC activate funding had enabled Rux Energy to onboard the resources and expertise needed to develop the materials and safe and efficient storage of dispatchable H_2.

"We've been able to use our recent findings as proof points to approach industry about new projects and look to globally relevant areas of expansion, including aviation and marine, which, along with trucking, would contribute to abating at least 12% of carbon emissions," Dr Kanga said.

"What began as a $100,000 investment has catalysed more than $4 million in investments over the next three years, which speaks to the success of the collaboration."

University of Sydney Professor Cameron Kepert highlighted that safe and efficient dispatchable storage of H_2 represents one of the central challenges on the road to the Hydrogen Economy. He pointed out that initiatives like IMCRC activate played a critical role in supporting local industry and future researchers to develop the capability and know-how to address those challenges.

"Research at the University of Sydney is driven by the big picture, so we're excited to be involved in a research collaboration exploring something as time sensitive and globally relevant as the delivery of cost-effective green energy," he said.

University of Sydney DECRA Fellow Dr Lauren Macreadie emphasised how this collaboration provided unique career opportunities in the global advanced materials industry.

"From day one, Rux embedded our students and postdoctorate researchers into their team, providing invaluable hands-on experience and setting them up for long-term success," she said.

David Chuter, IMCRC's CEO and Managing Director said that IMCRC was particularly pleased to be co-funding the development of game-changing affordable green energy within Australia.

"Rux Energy and the University of Sydney have had an incredibly fruitful research collaboration over the past 9 months, making significant headway towards the commercialisation of affordable green energy," he said.

"The initial findings into efficient H_2 storage are a testament to what can be achieved in Australia when we invest in commercially focused R&D though fast moving projects and collaborations.

“We’re confident that when this IMCRC activate project comes to an end in 2022, the outcomes will significantly accelerate the adoption of green hydrogen renewable energy within Australia and contribute to the reduction in CO_2 emissions.”

About IMCRC

IMCRC is an independent and for-impact cooperative research centre with a successful, proven and scalable model for catalysing research and business partnerships that drives transformative commercial outcomes for participating Australian manufacturers. To date, IMCRC has successfully co-invested in more than 60 R&D projects, catalysing more than $220 million in transformative manufacturing research.

IMCRC’s activate program was introduced in 2020 to support shorter-term, industry-led research projects to help Australian manufacturers take action and gain a competitive edge in the post-COVID-19 world.

About Rux Energy

Rux Energy is an Advanced Materials Startup founded by Dr Jehan Kanga, seeking to deliver game-changing efficiencies to energy storage in the form of next generation battery and hydrogen storage materials. In doing so, Rux hopes to accelerate low-cost electric and fuel-cell vehicle adoption globally to help mitigate Climate Change.

About the University of Sydney

The University of Sydney is one of the world's top research universities and their researchers are tackling some of the world’s greatest problems. Their breadth of expertise across faculties and schools is supported by deep disciplinary knowledge, and they have significant capability in more than 20 major areas of research, including science, engineering and technology.

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