

# EcoMag seeks \$1.5b opportunity in global market for high-purity Mg salts

*In a two-year, multi-stage project with the Future Food Systems CRC, specialty chemical producer EcoMag will work with UNSW Sydney chemical engineers to help it scale up operations and capture lucrative opportunities in the high-value 'base ingredients' space.*

In Stage 1 of the project, the team is using a simpler, faster, more cost-effective way than 'wet chemistry' to make high-purity organic magnesium compounds at scale: spray-drying.

The team will use UNSW's industrial spray-dryer to produce various salts via magnesium oxide (MgOs), made from hydrated magnesium carbonate (HMC) created in EcoMag's Chatswood facility. The aim is to ensure reliable, consistent output at scale.

"EcoMag is looking to adopt spray-drying as their manufacturing method because it can be done at a much, much larger scale [than wet chemistry]," explains project lead Cordelia Selomulya, a Professor within UNSW's School of Chemical Engineering. "And as it takes less time, it's much higher productivity."

In Stage 2, the project team will trial a novel spray-drying technique in a bid to increase the surface area of these MgOs.

Prof. Selomulya developed the technique and has used it successfully to increase the mesoporous surface area of inorganic salts, including silica and graphite materials, but has not yet trialled it with organic MgOs.

High-surface-area mineral salts have a number of benefits, Selomulya says – notably, that "you can functionalise them" for use as 'carrier' materials in pharmaceuticals, supplements and certain food products.

"You can load more active ingredients onto them – more of, say, a particular drug," she explains. "So as a product, it's much more valuable."

If the process is transferable, EcoMag will have all it needs to start manufacturing and supplying high-surface-area MgO organics to producers of premium supplements, foods and pharmaceuticals, across Australia and the world.

The returns on that would be huge, says Dr Tam Tran, EcoMag Chief Technology Officer and Industry Project Lead.

"For pharmaceuticals, supplements and food-product ingredients, purity is important - there's a very high return," he says. "The potential [revenue] is \$1.5 billion per year, worldwide."

Australian manufacturers of foods and supplements would also stand to gain, says Dr Tran.



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"Companies such as Blackmores and Swisse are competing with many other manufacturers...and almost all those cheaper brands are using ingredients imported from China or India. There's potential for us to save Australian manufacturers a lot of money, and give them better-quality ingredients too."

The project will run until December 2022.

## About EcoMag

EcoMag Limited is an unlisted Australian public company established in 2015 to research, produce and sell a range of [specialty chemicals](#) derived from high-purity magnesium. The raw material is extracted from the waste streams of Pilbara sea-salt mining operations using a '[magnesium precipitation process](#)' co-invented by [EcoMag's Dr Tam Tran](#). The company is developing a pilot plant for small-scale commercial production of high-purity MgOs in Dampier, Western Australia, to be followed a second manufacturing plant in WA and a much larger plant in New South Wales

## About the Future Food Systems CRC

The Future Food Systems Cooperative Research Centre (CRC) is a national initiative funded as part of the Australian Government's CRC Program and commenced in December 2019. Its goal is to broker industry-led collaborations between business, researchers and the community that improve the competitiveness, productivity and sustainability of Australia's agrifood sector, especially in areas of competitive strength. CRC industry partners include large and small firms across farming, food manufacturing and technology services that share a vision for increasing Australia's ability to value-add agrifood production and build scale in growth markets for trusted, healthy food and advanced precision-nutrition goods.

For more information about the Future Food Systems CRC, its participants and its research, visit the CRC's website <https://www.futurefoodsystems.com.au/> or subscribe to its monthly eNews. <https://www.futurefoodsystems.com.au/contact-us/#subscribe-to-newsletter>

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