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New food processing technology creates exciting new products & ingredients

International food manufacturers are developing brand new food products and reducing their energy use with the help of CSIRO scientists and an innovative food processing technology.

Extrusion porosification technology (EPT) was developed by French company Clextral in collaboration with Australian company Inovo, and CSIRO has the world's only pilot-scale equipment at their food innovation centre in Werribee, Victoria. The patented EPT process involves the spray drying of products and ingredients with a high amount of solids, which delivers a unique porosified powder structure.

According to technology co-inventor Max Scott from Inovo, EPT operates at a lower temperature than regular spray drying which not only saves large amounts of energy, but causes significantly less damage to a food's flavour and nutritional composition.

'What has excited companies is the possibility of creating new products and ingredients using EPT that could never be made using a traditional spray drying process,' Max said.

'This has really enabled us to start looking into the future development of new product areas such as flavours and probiotics, as well as any delicate ingredients with bioactives that are achieved by lower powder temperatures,' Max said.

And while the technology allows new products to be created, existing products can also benefit from the process. When processed with EPT, coffee retains more flavour and aroma compared to spray drying, and powdered dairy proteins become more soluble due the powder's internal honeycomb structure provided by the process.

As well as offering opportunities for manufacturers to innovate with product development, EPT also provides energy footprint advantages which are vital in today's business landscape.

'Our researchers work closely with businesses to help commercialise new products, ingredients and technologies, and EPT is of great interest to manufacturers looking to achieve leading-edge commercial advantage,' said Lloyd Simons, Business Development Manager for CSIRO's food innovation centre.

'It is an energy efficient technology that can save substantial energy

Resources



Maxime Collado (Clextral, left), Maxwell Scott (Inovo, middle) and Rod Smith (CSIRO, right) on the platform of the world's only pilot-scale EPT equipment at CSIRO's food innovation centre in Werribee, Victoria (Australia).

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consumption compared with current spray drying operations.'

Alain Brisset, Clextrel's Key Markets Global Manager, thinks their collaboration with CSIRO presents a great opportunity for local businesses.

'We've worked closely with CSIRO in Australia for a number of years now, and combining the skills of CSIRO's food scientists with the only pilot-scale EPT equipment in the world is a great opportunity for business innovation,' said Alain.

CSIRO holds a license from Clextrel for research and development of the EPT technology.

About CSIRO's food innovation centre

The food innovation centre at Werribee is home to CSIRO's Victorian food scientists. As well as an extensive array of labs, the centre is equipped with a pilot-scale food production facility that enables clients to evaluate the potential of new and innovative food production processes.

In addition to our extensive processing facilities (with a water evaporation capacity of 30-50kg/h), we provide application development and ingredient/product analysis services as part of our work.

We've recently helped our clients commercialise over 25 new products and ingredients based on a range technologies and grow their sales by more than \$200m.

About Clextrel

Clextrel leverages and develops its twin screw technology and expertise in turnkey production lines to serve several industries, both food and non-food, and contribute to sustainable development. Its reliable and innovative systems are quality and excellence benchmarks in its three key markets: Food & Feed, Green Industries and Powder Industries.

Since its foundation in 1956, research and innovation have been Clextrel's key driving force, along with the internationalisation of its business. Based in France, Clextrel is present on all five continents with its 11 subsidiaries and offices and its three research centers, providing local support to its customers in 89 countries.