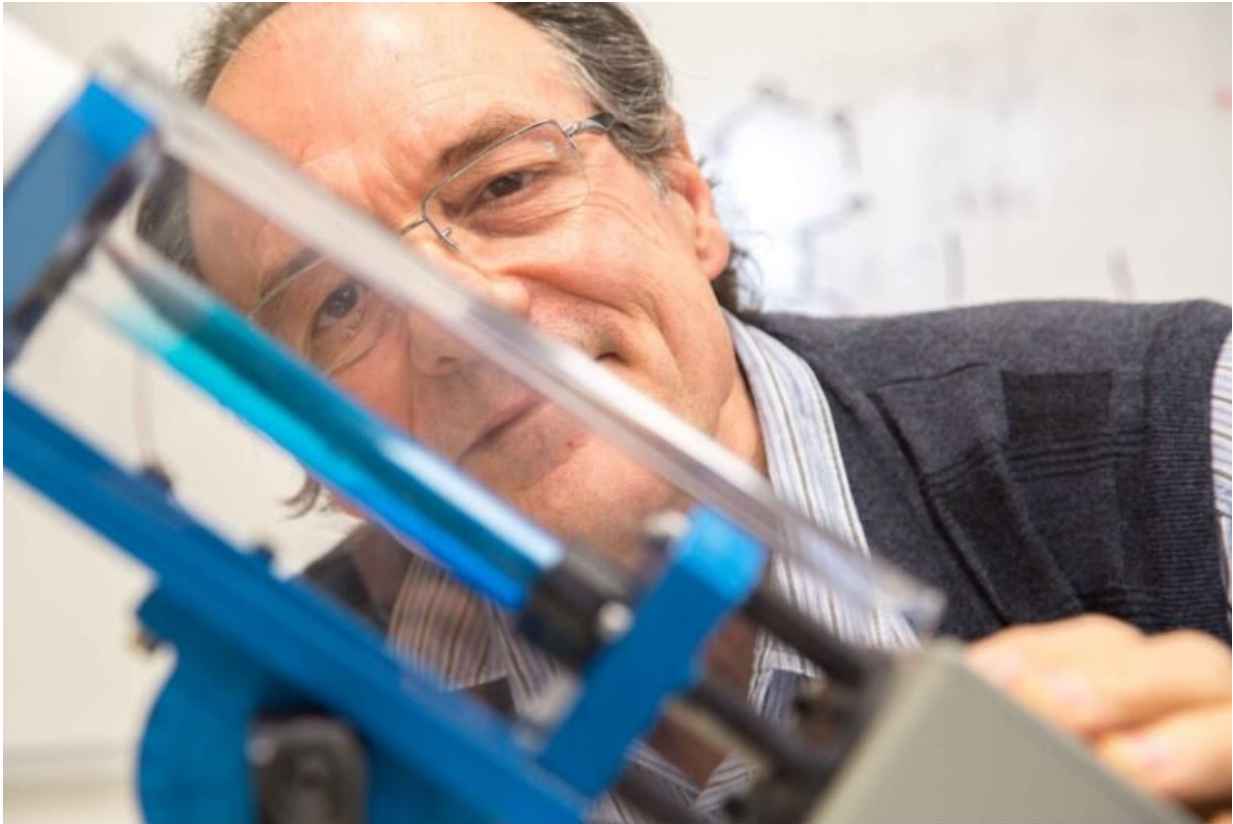


Refined finish for fine fish oil

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Flinders University Professor Colin Raston. Credit: Flinders University

Not all fish oils are high quality oils, so scientists have developed a superior method to help produce better dietary Omega-3 health and dietary supplements.

The new process, explained in a new Nature Partner Journals (*npj*)

Science of Food paper, defines how [vortex](#) fluidic device processing lifts the quality of active ingredients of the polyunsaturated fatty acids (PUFAs) in [fish](#) oil. The process was used to enrich Omega-3 fatty acid content of apple juice, remarkably without changing its sensory values which is important for the consumer.

Published in partnership with Guangzhou University, the University of Cincinnati, and the Australian Nuclear Science and Technology Organisation (ANSTO), the research is further proof of the value of rapid vortex fluidic green chemistry processing.

Compared to regular homogenisation processing, the device was able to raise PUFA levels and purity by lowering oxidation and dramatically improving shelf life. Natural bioactive molecules were used in processing showing that the [fish oil](#) medium can take up flavonoids and other health supplements.

The researchers on the project also developed a world first technique for studying how the process occurs in the vortex [fluidic device](#) (VFD) - real time.

Flinders University Professor of Clean Technology Colin Raston says the VFD also has the capability to scientifically measure and control the requirements for better outcomes in food processing.

More information: He, S., Joseph, N., Mirzamani, M. et al. Vortex fluidic mediated encapsulation of functional fish oil featuring in situ probed small angle neutron scattering. *npj Sci Food* 4, 12 (2020). doi.org/10.1038/s41538-020-00072-1

Provided by Flinders University

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