



Faculty of Engineering/Chemical/Food and Health Cluster

ARC Training Centre for Advanced Technologies in Food Manufacture

SPECIALISTS IN Novel Technologies for nutritious and safe food manufacture

Experts in :

- Non-thermal and thermal technologies
- Human nutrition studies
- Food Engineering
- Food rheology
- Nanotechnology

SELECTED RECENT PROJECTS

- Extrusion technology for high protein and high fibre formulations
- Membrane technology for nutrient recovery from manufacturing stream wastes
- Nanotechnology for developing biodegradable/Recyclable bioplastics for packaging
- Fortification technology (edible Coating technique) for adding micronutrients into foods

Recent publications:

1. Shirin Dabestani, Jayashree Arcot and Vicki Chen (2016) Protein recovery from potato processing water: Pre treatment and Membrane Fouling Minimization. *Journal of Food Engineering*. DOI 10.1016/j.foodeng.2016.09.013
2. de Ambrosis, A., Vishnumohan, S., Paterson, J., Haber, P., Arcot, J. (2016) Relative bioavailability of 13C5-folic acid in pectin-coated folate fortified rice in humans using stable isotope techniques. *European Journal of Clinical Nutrition*, 1-4. doi: 10.1038/ejcn.2016.122
3. R. H. Fitri Faradilla, George Lee, Aditya Rawal, Try Hutomo, Martina H. Stenzel. Jayashree Arcot (2016) Nanocellulose characteristics from the inner and outer layer of banana pseudo-stem prepared by TEMPO-mediated oxidation. *Cellulose* 23(5), 3023-3037
4. Nanocellulosic Material and Process for Producing Nanocellulose, Australian Provisional Patent Application No. 2016902784, P103159.AU

TRACK RECORD

- Establishing a training Centre for Advanced Technologies in Food Manufacture- \$2.1M from the Australian Research Council
- \$2M in cash and kind from five Australian and International Food companies towards research into newer technologies for food manufacture
- Efficacy of wheat flour fortification with multiple micronutrients in PNG- funding through one of the largest flour millers in Australia and PNG through a human intervention study in school children.

THE TOOLS OF OUR TRADE

- Pilot scale thermal (drying and extrusion) and non-thermal (ultra sound and Hydrostatic High Pressure processing)
- Physical and chemical analytical techniques for testing food components and functionality
- High-end microbiology facilities for molecular and analytical research for food safety
- In vivo (human and animal studies) capabilities and in vitro gut models; ex-vivo call culture models

COMPETITIVE ADVANTAGES OF YOUR TECHNOLOGIES

- Optimised high pressure and high temperature technology for directly expanded/highly digestible plant protein products
- Technical knowhow for fortifying rice grain with micronutrients
- Technical know-how for separating plant proteins from food manufacturing waste streams- value addition technology
- Easy Access IP for extracting nanocellulose from agricultural wastes for use as biodegradable packaging material

OUR EXPERTS

1. A/Prof. Jayashree Arcot
2. A/Prof. Alice Lee
3. Dr. Robert Driscoll
4. A/Prof. Jian Zhao
5. Dr. Francisco Trujillo