

Project 3_2 Valorisation of Medicinal and Horticultural Plant Wastes Using Membrane Separation Technology

PC Hub Theme (see list here)
Theme 3: Waste Valorisation – Extraction and Processing Technology
Principal supervisor
Prof. Kathryn Mumford (University of Melbourne)
Co-supervisor(s)
Prof. Monika Doblin, Dr April Li

About the Project

Based at La Trobe University, the ARC Research Hub for Protected Cropping (PC Hub) is driving a transformation in Australia's horticultural and medicinal agriculture industries by advancing protected cropping (PC) and improving sustainability, crop quality, yield, and reliability. Through cutting-edge research and industry collaboration, the PC Hub addresses critical knowledge gaps to unlock the full potential of PC systems.

We are seeking an enthusiastic and motivated PhD candidate to join our research group focused on developing an innovative solvent-membrane separation process for recovering valuable bioactive compounds from medicinal and horticultural plant wastes.

In this project, the PhD student will:

- **Extract valuable compounds** from a wide range of medicinal plants and horticultural plants (e.g. tomatoes, cucumbers, leafy greens) using bench-and pilot-scale solvent extraction system
- **Selectively purify and isolate bioactive compounds** on membrane separation system
- **Optimise the separation process** by screening the solvent systems, membrane materials and operating conditions

The project is based at the **University of Melbourne and La Trobe University**. The PhD student will have unique opportunity to utilise state-of-art equipment and facilities and collaborate with academic leaders and industry experts in the field.

Eligibility Criteria

We are seeking a candidate with:

- A Bachelor's degree with Honours or a Master's degree in **Chemical Engineering or a related discipline**.
- A strong background in **solvent and membrane separation techniques**.
- Experience with experimental systems for **plant extraction and liquid-liquid separation**.
- Experience in setting up and operating membrane separation units will be highly regarded.
- Familiarity with **analytical techniques** such as High-Performance Liquid Chromatography (HPLC) and Mass Spectrometry.
- Demonstrated strong written and verbal communication skills.
- The ability to work effectively within a multidisciplinary research team.
- **Full English language proficiency**.

How to apply

The PC Hub offers a limited number of competitive scholarships.

To apply, please email the following documents to pchub@latrobe.edu.au by **31 July 2026**:

- Application form completed
- Up-to-date CV
- University transcripts

Only shortlisted applicants will be contacted.



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