



A METHOD FOR DELAMINATING SOLAR CELLS

BACKGROUND

Solar panels are exposed to damaging environmental elements such as moisture, oxygen and dust. Once a panel has reached the end of its life span, its components are recycled. Currently, the end-of-life solar panels are first crushed and the raw materials are extracted by thermal and chemical processes. This is because of the difficulty in separating the solar cells from the front glass and EVA. Separating glass from the solar cells enables the reuse of glass panels and increases the concentration of precious materials in the remaining mix. For example, silver content by weight per panel rises from 0.05% to 0.98% after removing the front glass.

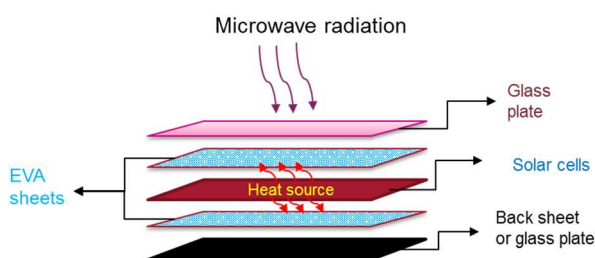
OUR SOLUTION

Our innovation provides a method for delaminating photovoltaic modules without energy-intensive processes or using toxic chemicals. Microwave processing heats silicon solar cells and softens the EVA layers to the point that they can be separated by simple mechanical methods. The selective heating of silicon enables significant temperature differences in the layers and assists the detachment due to thermal expansion mismatches.

STAGE OF DEVELOPMENT

Proof of concept achieved

Microwave delamination



FEATURES (over existing solutions)	BENEFITS
Removes backsheet, EVA and front glass from silicon PV panels	Fast and energy-efficient process; Increases the silver content (~20 times) in the recycling mix
Chemical-free	Cheaper, simpler and eco-friendly process

APPLICATIONS

- ✓ PV module recycling

EXPERTISE AND CAPABILITIES

[Dr. Binesh Puthen Veettil](#)

Dr. David Payne

Dr. Mattias Juhl

Professor Darren Bagnall

INTELLECTUAL PROPERTY STATUS

Patent pending

PARTNERING OPPORTUNITY

We are seeking an industry partner for further development and commercialisation of this technology through a research collaboration or technology licence.

WOULD YOU LIKE TO KNOW MORE?

Email: ip@mq.edu.au

