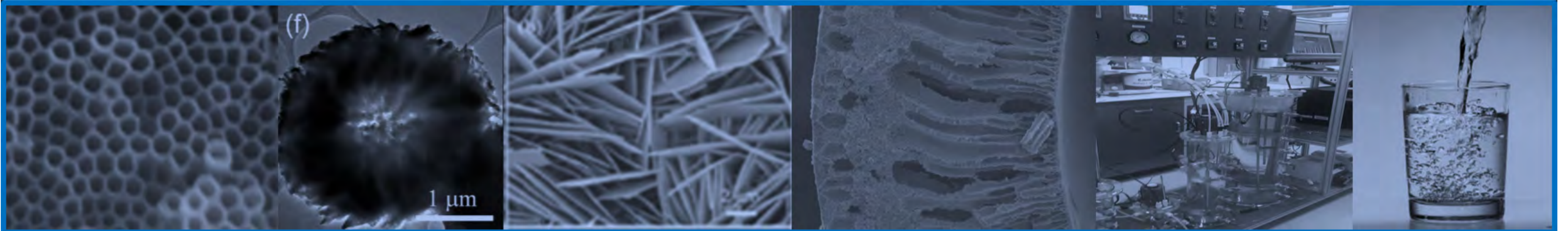


# Membrane & Catalysis Lab

Both safe environment and renewable energy are of great importance to sustainable development in the 21<sup>st</sup> century. Our group is devoted to the development of low-cost technologies for environment protection and resource recovery from waste, particularly membrane and catalytic oxidation technologies.



## Lead Scientist

**A/Prof. Xiwang Zhang**

## Research Expertise

A/Prof Zhang has over 10 years of research and industry experiences in synthesis of environmental functional materials and water treatment. A/Prof Zhang strong expertise was demonstrated by his commercialized products and a few prestigious research awards, e.g. International Water Association (IWA) East Asia & Pacific Research Honour Award, Australian Research Council Fellowship. A/P Zhang's work is also recognised internationally, evidenced by 4 international patents and > 70 publications in high impact journals.

## Key Contact

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## Applications

- High flux nanomaterial-polymer hybrid membranes for drinking water production;
- Anti-fouling multifunctional membranes for wastewater reuse;
- Forward Osmosis membrane technologies for nutrients recovery from wastewater water;
- Photocatalytic oxidation film for water disinfection and indoor air purification;
- Electrochemical adsorption for noble metals recovery from waste;
- 2D material thin film for smart windows with anti-fogging and self cleaning functions.

## Research Facilities

- Synthesis facilities of both flat sheet and hollow fiber membranes;
- Membrane evaluation facilities;
- Synthesis facilities of 2D metal oxides and Graphene oxide;
- Photocatalytic oxidation testing facility for water treatment and disinfection;
- Photocatalytic water splitting testing facility for hydrogen production;
- Wastewater quality analysis facilities;
- Solar simulator;
- UV-vis spectrophotometer for both liquid and solid samples.



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