

CO₂ Capture Using Membranes

SPECIALISTS IN CO₂ CAPTURE FROM CONCENTRATED EMISSION SOURCES SUCH AS POWER PLANT FLUE GAS

Development and application of high performance membranes for CO₂ capture from concentrated emission sources

Design and construction of small scale test units for on site tests with real gas feeds such as power plant flue gases and demonstrate the performance of in-house developed membranes and technology

SELECTED RECENT PROJECTS

Completed project "Evaluation of CO₂ capture with high performance hollow fibre membranes from flue gas" funded by the Australian Government through its CRC program and through Australian National Low Emissions Coal Research and Development (ANLEC R&D) from 2011 to 2014.

Current project funded by The Coal Innovation NSW Fund supported by Department of Industry, Skills and Regional Development, for and on behalf of the State of New South Wales for evaluation and demonstration of high performance CO₂ capture membranes with power plant flue gas (2017-2018).

Part of Otway Capture Project to evaluate membrane performance for separating CO₂ from methane on site of a gas well with pressure up to 90 bars.

TRACK RECORD

ANLEC project final report (CO₂ capture from power plant)

Previous CO₂CRC projects for development of high performance membranes for natural gas sweetening and for CO₂ capture from power plants including pre-combustion syngas and post combustion flue gas

Bio-catalytic membrane reactor for CO₂ capture from power plant

Numerous publications see websites of experts.

THE TOOLS OF OUR TRADE

One of the world leading research centre in membrane science and technology

Extensive research experience in development of high performance membranes for CO₂ capture.

Among the best in the world in lab facilities for develop membrane materials and module for both lab and pilot tests

Membrane performance comparable or better than the best published in the world

COMPETITIVE ADVANTAGES OF YOUR TECHNOLOGIES

Current technologies for CO₂ capture include amine, membrane and sorption.

Membrane technology can be economically competitive if lab performances can be replicated in real application, with advantages of small footprint, no chemical involvement and easy to retrofit.

Various membranes developed in our centre for CO₂ capture achieved performances that could substantially reduce the cost of membrane and the system.

Potential application include CO₂ capture from concentrated emission sources such as cement production plants; biogas separation, natural gas treatment.

OUR EXPERTS



Prof. Vicki Chen

<http://research.unsw.edu.au/people/professor-vicki-chen/publications>

Dr Guangxi Dong

https://www.researchgate.net/profile/Guangxi_Dong

Dr Jingwei Hou

https://www.researchgate.net/profile/Jingwei_Hou

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