CO_2MOF network

SCIENCE AND
INDUSTRY
ENDOWMENT
FUND

SIEF supports research to solve the Energy Waste Roadblock

the **challenge**

Annual global emissions of carbon dioxide (CO_2) have increased by approximately 80% since 1970, largely due to our increasing and unabated dependence on fossil fuels for energy generation. As atmospheric concentrations of this ubiquitous greenhouse gas have grown, so too has international concern of the effects of CO_2 in the atmosphere, making this issue one of the most critical environmental concerns about our age. Ways of capturing, storing and using CO_2 need to be identified and explored.

the **response**

The Solving the Energy Waste Roadblock project (CO_2MOF network) is addressing one of the most pressing challenges presented by this issue, namely the development of new materials and processes for the capture and utilisation of carbon dioxide. Metal-Organic Frameworks (MOFs) are one of the most promising class of materials and their properties make them ideal candidates for gas storage, separation and catalysis. The project also has a clear focus on the use of these materials in industrial applications.

the **collaboration**

This project involves a range of disciplines from theoretical chemistry (molecular modelling) to chemical engineering, thus the collaborators are drawn from multidisciplinary research teams from seven institutions; The University of Sydney, The University of Melbourne, Monash University, The University of New South Wales, The University of Adelaide, CSIRO and ANSTO.

projected **impact**

Through the development of novel MOF materials with separation and catalytic properties, the CO_2MOF network aims to:

- Mitigate climate change by developing novel materials which can selectively remove CO_2 from waste gas streams including from industries such as coal-burning power stationschange
- Create economic value by converting the CO_2 waste stream into new products
- Develop methods for the economical production of MOFs on a large scale for industrial use

Contact us

For further information
SIEF Manager
t +61 3 9545 7952
e sief@sief.org.au
www.sief.org.au

What is SIEF?

Spanning a history of over 85 years, the Science and Industry Endowment Fund (SIEF) provides grants to science and scientists for the purposes of assisting Australian industry, furthering the interests of the Australian community and contributing to the achievement of Australian national objectives. In 2009 this unique and esteemed funding arrangement was rejuvenated by a gift from CSIRO, made possible due to the commercial success of CSIRO's fast WLAN, or Wi-Fi technology. Thus past accomplishments are reinvested into new science and innovation for the nation.