

Silica-Supported Perovskite Oxides for Low Temperature Carbon Dioxide Conversion

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Conversion of CO₂ in a scalable technology has the potential for enormous energy and environmental impact but remains a challenge. I will explore the effects of earth-abundant perovskite oxide material supported by silica compositions for reduction and oxidation processes as a potential solution for this CO₂ mitigation problem. The effect of silica on the conversion of CO₂ to CO and water production will be investigated on three different compositions of silica. The materials will be synthesized and characterized through X-Ray diffraction and temperature programmed reduction and oxidation. I will test the results of the inclusion of silica on facilitating the formation of oxygen vacancies while maintaining structural stability.

Awards Won:

National Taiwan Science Education Center: Taiwan International Science Fair Special Award is a trip to participate in the Taiwan International Science Fair