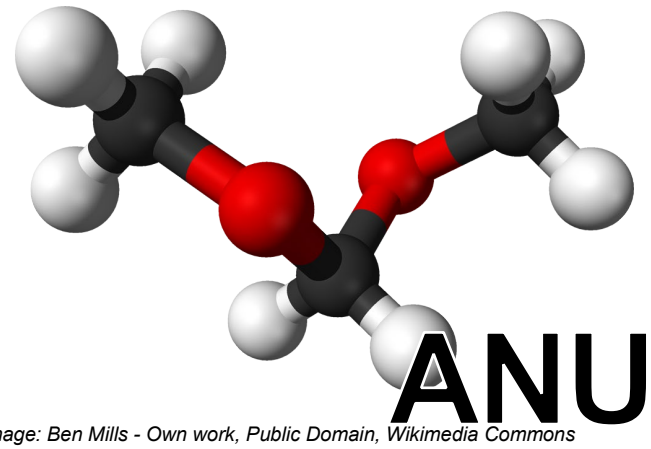
Australian National University

TECHNICAL SUMMARY

Method for producing Dimethoxymethane and green Hydrogen from Methanol



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With the current climate crisis, opportunities exist to make all industrial processes greener. Researchers from The ANU have developed a catalyst that uses sunlight to convert methanol into Dimethoxymethane (DMM), green Hydrogen, and Methyl Formate at room temperature and pressure.

The photocatalytic process can provide significant reduction of greenhouse emissions as it utilises naturally abundant sunlight to power the reaction. The green Hydrogen produced in the process can further aid in emission reduction by either providing a green energy source, or be paired up with upcoming CO2 capture processes to yield additional Dimethoxymethane.

Potential benefits

> **Energy Efficient:** Energy reduction through a photocatalytic process at room temperature and pressure.
> **Cost Effective:** Noble metal-free catalyst
> **Environmental Benefit:** Production of green Hydrogen and methyl formate as by-products
> **Maximisation of beneficial products:** Coupling with new technologies for DMM production using CO2 and H2

Potential applications

> Dimethoxymethane production
> Diesel fuel additives
> Green Hydrogen Production from methanol
> Methyl formate production

Opportunity

The technology is currently at TRL-4 with ANU seeking commercial potential of technology for further development and testing with an industry partner.

IP status

The technology is in pre-patenting stage, all IP is owned by the Australian National University.

Key research team

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