

DISTINGUISHED SPEAKER SERIES

Green Hydrogen & Liquid Sunshine

By Prof Li Can

The overuse of fossil energy has led to serious problems that threaten the sustainable development of the mankind and the environment and ecological civilization. Among the possible routes to overcome difficulties against the sustainable development, solar fuel utilization has been considered as an ideal solution to replace the fossil energy.

This lecture presents the progress made in solar fuel production via artificial photosynthesis, namely the CO₂ reduction with green hydrogen which is produced from water splitting by photocatalysis, photoelectrocatalysis and electrolysis with renewable energy, such as solar energy. The great challenge of solar energy conversion via artificial photosynthesis lies in its complicated processes including light absorption (harvesting), charge separation and transfer, and catalytic reactions.

Potentially, the green hydrogen can be produced via the photocatalysis, photoelectrocatalysis and electrocatalysis. The lecture will be focused on a recent progress made in Liquid Sunshine production which is based on photovoltaic electrolysis hydrogen production and CO₂ hydrogenation to methanol. It is supposed that green hydrogen energy and liquid sunshine methanol would be a strategic path of carbon emission peak and carbon neutrality.



Thursday, 24 November 2022



3 to 4pm



Via Zoom:

<https://nus-sg.zoom.us/j/82427741698?pwd=SStSam5YS1Y3NGJvUkpFV3piYmJ0dz09>

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Professor Can Li received his Ph.D. degree in Physical Chemistry from Dalian Institute of Chemical Physics, Chinese Academy of Sciences (DICP, CAS). He was elected as a member of the Chinese Academy of Sciences in 2003, a member of the Academy of Science for Developing Countries in 2005, a foreign member of Academia European in 2008, and a Fellow of the Royal Society of Chemistry in 2008. He was the President of the International Association of Catalysis Societies (2008-2012) and the President of the Asia-Pacific Association of Catalysis Societies (2013-2017). Currently, he is the Chairman of Catalysis Society of China, Dean of Materials and Chemical School of USTC, and the Director of the Solar Energy Division, DICP, CAS. His research interests span spectroscopic characterization of catalysts and catalytic reactions. Since 2001, his research has focused on photocatalytic, photoelectrocatalytic and electrolysis water splitting and CO₂ reduction utilizing renewable energy. In 2021, he was appointed the Director leading a national program on fundamental research of “artificial photosynthesis” by National Natural Science Foundation of China.