

DISTINGUISHED SPEAKER SERIES

Electrocatalytic Materials and Interfaces for the Production of Solar Fuels and Chemicals

By Prof Peter Strasser

The rising share of renewable electricity is testament to the increasing importance of solar/wind-electric routes to harvest sun light in form of potential differences and flowing free electrons. While some electricity is used directly or stored capacitively, an increasing portion calls for direct conversion into valuable molecular solar fuels or chemicals. This conversion in the dark is made possible by heterogeneous electrocatalysis on the surface of solid electrodes. More Fundamental understanding of the origin of kinetic barriers is needed for the design of more efficient, tailor-made electrochemical interfaces for the production of fuels and chemicals.

I will share recent advances in our design and understanding of electrocatalytic materials, interfaces and mechanisms relevant to the conversion of electricity into value-added molecular compounds, using in-situ/operando X-ray spectroscopic, microscopic, scattering or spectrometric techniques. Examples include water splitting to green hydrogen and the conversion of CO₂ into chemicals.



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3 to 4.30pm



Via Zoom:

<https://nus-sg.zoom.us/j/81167419606?pwd=MldjaTZTZjF3TmdqZys4dllxQnA5Zz09>

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Prof Peter Strasser received his PhD from the 'Fritz-Haber-Institute of the Max-Planck-Society' in Berlin under Prof. Gerhard Ertl. He is currently the chair professor of "Electrochemistry and Electrocatalysis" in the Chemical Engineering Division of the Dept of Chemistry at the Technical University Berlin, Germany. A highly cited researcher, his awards and honors include: Fellow of the International Society of Electrochemistry (2022) F-cell award (2022), the European Fuel Cell Forum (EFCF) Christian Schönbein Gold Medal award (2021), the Royal Society of Chemistry (RSC) Faraday Medal (2021), the ISE Brian Conway Prize in Physical Electrochemistry (2021), the Nature publishing award (2018), the IAHE Sir William Grove award in hydrogen research (2018), the Otto-Roelen medal in Catalysis by the German Catalysis Society (2016), the Ertl Prize (2016), the Otto-Hahn Research Medal by the Max-Planck Society (2000). Prof Strasser is a named inventor on 19 U.S., Japanese, and European patents. He has presented more than 200 invited lectures or seminars at various academic, industrial, and governmental organizations or conferences around the world. He has authored or co-authored more than 350 peer-reviewed scientific journal publications. His entrepreneurial activities include roles as mentor for academic spin-off Start-up companies such as "DexLeChem" GmbH, "Next Gen Chlor", and more recently "Liquid Loop" GmbH, which commercializes technology developed in his research group