

DISTINGUISHED SPEAKER SERIES

Challenges of Activating Nitrogen

By Prof Ib Chorkendorff

Activating of molecular nitrogen is an extremely important process as it supplies in the form of fertilizer the nitrogen that it is a prerequisite for life. After brief review of the history of activating nitrogen, I shall concentrate on the ammonia synthesis and motivate why an alternative route to the current commercial Haber-Bosch could be attractive. Recently we proved that by simultaneous depositing Li electrochemically in an N₂ atmosphere it was possible to activate N₂ to synthesize ammonia.

We have subsequently investigated this process and a very simple model for the synthesis has been proposed. Based on this insight we devised experiments that significantly improved the Faradaic and Energy Efficiency allowing for scaling-up the process.



Wednesday, 15 March 2023



3 to 4pm (Singapore Time)



Via Zoom:

<https://nus-sg.zoom.us/j/82387213826?pwd=dWZzcC80TzdiR0lFRzV5djhIbTVtdz09>

Meeting ID: 823 8721 3826

Passcode: 057690



Ib Chorkendorff is Professor in Heterogeneous Catalysis at DTU-Physics and is director of The Villum Center for the Science of Sustainable Fuels and Chemicals (V-SUSTAIN). He has author or coauthored more than 400 scientific papers and 23 patents. He has since 2017 been listed as Highly Cited Researcher (ISI) (top 1%). Ib Chorkendorff's research activities focus on finding new catalysts for improving sustainable energy production/conversion and for environmental protection. He is co-founder of three start-up companies and has received numerous awards, latest the Villum Kann Rasmussen Annual Award (2021), and in 2022 The Eni Award: Energy Frontiers Prize.