

Date: 15 Jan 2019, **Location:** Ellehammer Ø28-600-3 10:00-11:00

Abstract

Improved durability and novel materials used in Low Temperature Hydrogen Fuel Cell Membrane Electrode Assemblies

Dr Jessica Chamier is from HySA Catalysis, hosted by the Department of Chemical Engineering at the University of Cape Town. The HySA Catalysis group is funded by the South African Department of Science and Technology's (DST's) National Hydrogen and Fuel Cells Technologies Flagship project. The project overall aim is to transform South Africa from a resource-based economy to a knowledge-based economy and in doing so add high value to the country's mineral wealth (specifically platinum). Their mandate includes components in the early part of the fuel cell and hydrogen value chain, namely catalysts and catalytic devices. HySA Catalysis also has a commercial arm, HyPlat. HyPlat informs the HySA Catalysis Research and Development team on commercial client needs advising future research trajectories and setting benchmark standards. Jessica leads the MEA (Membrane electrode Assembly) Technology Development Team and their goal is to design and manufacture MEAs with

- Improved Pt use efficiency
- Improved performance
- And improved durability

For the seminar, Jessica will be presenting on their on-going projects for MEA Accelerated Stress Testing using Electrochemical Impedance studies. She will also be presenting on their key focus for 2018 which was the development of reversal tolerant anodes tested against client specifications. These reversal tolerant anodes are made using IrO₂ and IrO₂-supported catalysts. For the latter, the IrO₂ is supported on electrospun ceramic nanofibers. Other presented work will include methods for producing IrO₂ catalyst in-house from Iridium metal received from a South African mining house.