SYDDANSK UNIVERSITET
UNIVERSITY OF SOUTHERN DENMARK

Abstract:

Interface development for fuel cell electrode structure

Shuang Ma Andersen
mashu@kbm.sdu.dk

The growth of population and economy places considerable burdens on natural resources and environment. The combination of hydrogen, as an energy carrier, and fuel cells, as the efficient and environmentally friendly energy conversion technology, has been recognized as the solution with most potential. Denmark has targeted to utilize clean renewable energy sources to cover 35% in 2020 and 100% in 2050 of the total electrical energy consumption[1].

Though fuel cell is at the threshold of commercialization, price and life-time are still crucial challenges of the technology. Apart from hunting of cheap and effective components, electrode interface development plays a key role in the advance of the technology. This presentation gives you a brief overview of the current status of the technology and casts light to the future development trend with a focus on the advance of electrode interface structure[2, 3].

[1] Danish Agency for Science, Technology and Innovation, An OECD horizon scan of megatrends and technology trends in the context of future research policy, 2016. http://ufm.dk/publikationer/2016/anoecd-horizon-scan-of-megatrends-and-technology-trends-in-the-context-of-future-research-policy

[2] S.M. Andersen & E. Skou, Electrochemical Performance and Durability of Carbon Supported Pt Catalyst in Contact with Aqueous and Polymeric Proton Conductors, ACS Appl. Mater. Interfaces, 19 (2014) 16565-16576.

[3] M.G. Poulsen, M.J. Larsen, S.M. Andersen, Improved Durability of Proton Exchange Membrane Fuel Cells by Introducing Sn (IV) Oxide into Electrodes using an Ion Exchange Method, J. Power Sources, 343 (2017) 174-182.