

Overview of SOFC/SOEC development at DTU Energy Conversion - DTU Orbit (08/11/2017)

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According to a broad political agreement in Denmark, the Danish energy system should become independent on fossil fuels like oil, coal and natural gas by the year 2050. This aim requires expansion of electricity production from renewable sources, in particular wind mills. In order to balance the fluctuating power production and to cope with the discrepancies between demand and supply of power, solid oxide fuel cells and electrolysis are considered key technologies. DTU Energy Conversion has a strong record in SOFC/SOEC research, with a close collaboration with industry, in particular with Danish Topsoe Fuel Cell A/S. Recent achievements will be presented ranging from development of new cell generations, manufacturability, up to testing under realistic operating conditions including degradation studies and high pressure testing. A strong focus will be on development of methodologies, e.g. in micro structural analysis and electrochemistry, in order to understand fundamental processes in detail and thus being able to improve SOFC/SOEC based on this knowledge.

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