

Inaugural lecture

Peter Vesborg

“Solar-fuel catalyst benchmarking - nanoscale measurements for kilometer scale implementation”

June 14th, 2019 15:00
Building 101 - S01

DTU Physics
Department of Physics



One of the biggest challenges facing humanity is The Energy Problem, where we will need to provide ca 25 TW of power to run our civilization and do so with a minimal impact on the global environment. Capturing sunlight is central to achieve this, but capture is not enough - we must also convert multiple TW of sunlight into storable chemical fuels. Doing so requires highly active and selective catalysts of many descriptions. The lecture sets the stage by introducing The Energy Problem and then moves on to provide examples of how we work to find and characterize next-generation catalysts for energy conversion reactions. The methods often employ nanoscopic samples, but we keep in mind that everything must be able to scale to km² implementation for it to be able to make a difference for the World.



Peter C. K. Vesborg is newly appointed Professor in Experimental Physics of Catalysis at DTU. He graduated as an engineer in 2006 and received his PhD in Physics in 2010. Following a postdoc at Stanford University he joined the

faculty at DTU physics in 2012 where his research focus has been heterogeneous catalysis. Besides studying and developing thermal- electro- and photo-catalysts, Peter has also maintained a strong focus on developing new and innovative methods for catalyst characterization such e.g. MEMS-based microreactors and electrochemical "sniffer"-devices. Very recently, in an ERC-starting grant project, a graphene-based cavity reactor design is being developed, which has the potential to increase chemical sensitivity by several orders of magnitude over the state of the art. In parallel, Peter has had active entrepreneurship efforts resulting in three start-up companies in very diverse areas. Peter was awarded the Reinholdt W. Jorck og Hustrus prize in 2017 and the H.C. Ørsted prize in 2018.

