

Title: Project RedoxWind – development of a stationary all-vanadium redox flow storage

Abstract:

Since all-vanadium redox flow batteries offer the possibility to realize a cheap capacity storage in the range of hours, this technology offers a great potential to be used as such a district or village storage in the power range of single-digit MW.

The objective of the large-scale project RedoxWind is the practical integration of a redox flow battery as a storage of fluctuating energy from a wind turbines into an existing power grid. For this purpose, a large stationary storage based on the all-vanadium redox flow battery with a power of 2 MW and a storage capacity of 20 MWh is developed and built up on ICT campus. As a power supplier, a 2 MW wind turbine with 100m post height is installed on the campus. The battery store is connected to the direct current circuit of the wind turbine on the DC level. This DC connection offers advantages by saving power electronics and the improved possibilities of grid stabilization. The battery and wind turbine network is integrated into the local network at the Fraunhofer ICT. The talk presents the different aspects of the project and gives an overview of the current developments of VRFB storage.

Bio:

Mr. Fischer studied physical chemistry at the Heinrich-Heine-University in Düsseldorf, Germany. At the University he developed analytical instruments for PEM-fuel cells, like locally resolved micro- Raman probes for the detection of gases in PEM - fuel cells.

Since 2011 he is the group leader of the Redox Flow Battery Group at the Applied Electrochemistry Department at Fraunhofer Institute for Chemical Technology (ICT). In his position, he is responsible for the light-house project RedoxWind. In this project a 2MW/20MWh flow battery will be installed on the ground of Fraunhofer ICT