Vanadium Redox Flow Batteries for Renewable Energy Storage

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Abstract {Max words limit 250}
With the increase in renewable energies worldwide, the need for storage to cover supply gaps is growing. Redox flow batteries (RFB), in which the energy is stored in flowing media, are a promising technology for storage times from approx. 4h. As with fuel cells, this allows energy and power to be scaled separately and adapted to specific needs. When using an inexpensive and easily recyclable storage medium, storage systems with low costs can be realized in this way. To date, an almost unmanageable number of different technologies have been developed. The best studied and commercialized RFB is the vanadium redox flow battery (VRFB), in which energy is stored in vanadium salts. Originally developed in the 1980s at the University of New South Wales, a large number of systems up to the double-digit MW range are in operation today. In this presentation, we will give an overview of the current developments on vanadium redox flow batteries and their successors at the University of New South Wales in Australia and at Fraunhofer ICT in Germany.

Short Biography:

Adjunct Associate Professor Jens Noack studied chemical engineering and environmental technology at the Dresden University of Applied Sciences. Since 2007, he has been working at the German Fraunhofer Institute for Chemical Technology in the Department of Applied Electrochemistry, where he is mainly developing redox flow batteries. He is Deputy Director of the German/Australian Alliance for electrochemical technologies for Storage of Renewable Energy (CENELEST), author of over 80 publications and 29 patent applications and member of several standardization committees. His research and development focuses on stationary energy storage systems for renewable energies and the development of novel energy storage and conversion systems.

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