

I. Reversible Fuel Cells for Electrical Energy Storage

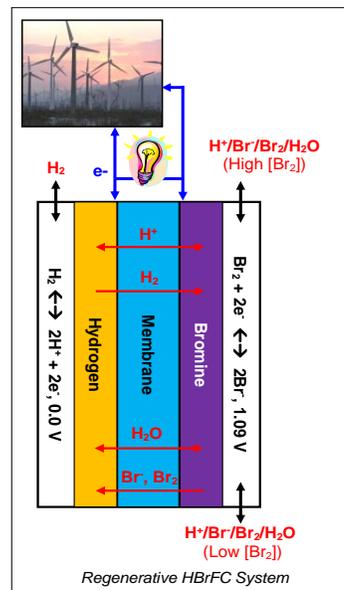
II. How to be Successful in Graduate School

III. How to Write a Good NSF Proposal

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Abstract

- I. Our electrical energy demand is highly variable and unpredictable, and our electricity supply is from conversion processes that have very slow response time. The resulting time mismatch between the supply and demand of electricity leads to variable and sometimes unstable electricity output and electrical power failure. Recent integration of intermittent renewable energy sources such as wind and solar to the electrical grids exacerbates this time mismatch problem because it adds a highly variable and unpredictable electrical energy supply source to the electrical generation network. These problems can be addressed by the integration of electrical energy storage systems such as reversible fuel cells. This presentation will discuss these issues and the research of my group at the University of Kansas on electrical energy storage.
- II. Six key components to success in graduate school will be discussed.
- III. Various major research funding sources and characteristics/missions of these sources and how they differ will be discussed. Success with these sources requires understanding their missions and review processes. Key aspects to a good proposal will be presented with specific examples.



Biography

Trung Van Nguyen is a Full Professor of Chemical & Petroleum Engineering at the University of Kansas. He has a BS from North Carolina State University and MS and PhD from Texas A&M University, all in Chemical Engineering. Prior to joining the faculty at the University of Kansas, he was a Member of Technical Staff at AT&T Bell Labs, Associate Director of the Center for Electrochemical Engineering at Texas A&M University, Senior Product & Process Development Engineer at Duracell, Postdoctoral Fellow at Los Alamos National Lab, and Process Engineer at DuPont Dacron Yarn R&D Center. He has also served as the first Program Director (2007-2009) of the Energy for Sustainability Program (CBET Division/ENG Directorate) at the National Science Foundation. He has contributed more than 120 publications and 6 patents and given over 143 invited and 125 conference presentations. His works have been cited more than 7900 times (Google Scholar). He is a Fellow of the Electrochemical Society and the American Institute of Chemical Engineers. He is also a founder of two fuel cell start-up companies. His current research is in electro-catalysts, electrode and nano-materials, transport and interfacial phenomena in fuel cells and batteries, and mathematical modeling of electrochemical systems.

Thursday, November 30th; 11-11:50am; Spahr Auditorium

