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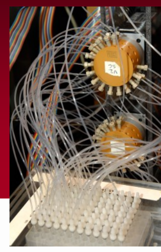

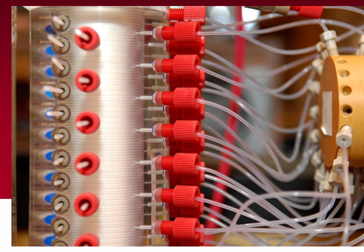

The Gene and Linda Voiland School of

Chemical Engineering and Bioengineering

2014 Seminar Series
Monday, September 22, 2014
12:00 p.m. CUE 319

Professor M. Grant Norton
School of Mechanical and Materials Engineering
Washington State University

M. Grant Norton is Professor in the School of Mechanical and Materials Engineering at Washington State University and Dean of the Honors College. Professor Norton obtained his PhD in Materials from Imperial College, London in 1989 under the direction of Professor B.C.H. Steele and spent a two-year postdoctoral at Cornell University with Professor C. Barry Carter before joining the Washington State University faculty in 1991. In 2003 and 2004 he was an Air Force Office of Scientific Research (AFOSR) Faculty Research Associate at Wright-Patterson Air Force Base in Ohio and spent the 1999/2000 academic year as a Visiting Professor in the Department of Materials at Oxford University. From 2000 to 2005 Professor Norton was Chair of Materials Science at Washington State University and from 2004 to 2007 he held the Herman and Brita Lindholm Endowed Chair in Materials Science. He is author or co-author of about 200 papers in the archival literature, several book chapters, and two textbooks. Professor Norton serves as Deputy Editor-in-Chief of Journal of Materials Science, is on the Editorial Board of Journal of Nanotechnology, and on the International Editorial Board of Journal of Materials Education. Prior to entering academia, Norton worked for two major European multinationals: Cookson Group PLC and Heraeus GmbH. He has consulted for a number of companies and organizations including the United States Air Force and REC Silicon, the world's largest producer of silicon materials. From 2009 to 2011 Professor Norton was on the Board of Directors of the Washington Technology Center.

One-Dimensional Tin Nanostructures for Lithium-Ion Batteries

Abstract:
Tin is an attractive anode for next generation lithium-ion batteries. The large volume change during cycling can be accommodated when the material is in the form of a 1-D nanostructure. Tin nanostructures are grown by electrodeposition and using electron microscopy we have determined the growth mechanism. This information has been used to control their formation on a range of substrates. In this presentation, we will also describe the results of in-situ lithiation/delithiation studies using a specially designed TEM holder and results obtained by combining the tin nanostructures with a flexible polymer electrolyte as a step toward a fully flexible battery.