

Outreach & Expo Program, FALL 2022

Invited Speaker Seminar Series

**Capturing the Battery Manufacturing Opportunity
for Our Energy Security**

Guest Speaker: Dr. Ilias Belharouak

Nov. 10, 2022, 11 AM – 12 (CDT)

Location: EENG 1.300

Abstract

This talk will focus on the energy storage systems designated for mobility and electrification in relation to the R&D performed in the US. Department of Energy Battery Manufacturing Facility (BMF) at Oak Ridge National Laboratory (ORNL). BMF receives funds from the US. Government and Industry to sponsor innovations in advanced battery materials research, battery manufacturing science, and cell prototyping that enable low-cost, high-power, high-energy, safer, and long-life cells capable of fast charging. Being one of the largest open-access battery R&D facilities in the United States, the facility houses the equipment and instrumentation necessary to research every step in the battery manufacturing process with an emphasis on advanced materials, electrode formulation chemistry, innovative coating technology, and high-performance electrode architectures. Resources include three coating lines, a dry room, and a cell assembly line for the construction of large-format pouch cells. Collaborations across ORNL strengthen manufacturing science with state-of-the-art materials characterization including advanced microscopy and neutron sciences. BMF research bridges the gap between fundamental materials discovery and requirements for automotive and grid cells with a primary emphasis on integrating next-generation active materials and novel processing methods.

**Internship and job opportunities are also available in
Oak Ridge National Laboratory!!!**

About Dr. Belharouak

Dr. Ilias Belharouak is a Distinguished Scientist and Electrification section head at Oak Ridge National Laboratory (ORNL), Tennessee. Dr. Ilias also serves as a Professor of the Bredesen Center for Interdisciplinary Research and Graduate Education at the University of Tennessee Knoxville. At ORNL, Dr. Ilias oversees multidisciplinary R&D programs sponsored by the US. Department of Energy on works relating to battery energy storage and advanced manufacturing. Before joining ORNL in 2017, Dr. Ilias was the Research Director and Founding Chief Scientist of the Electrochemical Energy Storage Center at Qatar Foundation. In the meanwhile, Dr. Ilias served as a Professor at the Hamad Bin Khalifa University (HBKU) for two years. Before joining Qatar Foundation in 2013, Dr. Ilias was a Material Scientist at Argonne National Laboratory (ANL), Illinois, between 2001-13. Dr. Ilias was recognized with several awards including 6 R&D 100 innovation awards and four U.S. Federal Laboratory Consortium Awards. He published more than 180 peer-reviewed papers, 50 U.S. Patents, and Patent Applications, and 5 books. He is currently the Editor of Elsevier's Journal of Power Sources, holds an h-index of 68, and was as invited more than 60-times around the globe. He received a Ph.D. degree (1999) and a Master's degree (1996) in Materials Science and Solid-State Chemistry from the Institute for Solid State Chemistry (ICMCB), National Center for Scientific Research, Bordeaux 1 University, France.