

Ilias Belharouak

Argonne National Laboratory
9700 South Cass Avenue, Bldg. 205
Argonne, IL 60439
phone: 630/252-4450
fax: 630/252-4176
e-mail: belharouak@cmt.anl.gov

Professional Experience

- **High-Power Lithium-Ion Batteries:** Development of advanced cathode materials that can be utilized for high-power lithium-ion batteries for hybrid electric vehicle applications as well as for implantable medical devices.

Materials Preparation, Characterization, and Analytical Techniques: Solid-state reaction, crystal growth, sol-gel, supercritical fluids, nano- and micro-aggregates, phosphates, borates, silicates, silver oxides, fluorides, lithium-metal transition oxides, x-ray diffraction techniques, luminescence spectroscopy, impedance spectroscopy, infrared spectroscopy, scanning electron microscopy, transmission electron microscopy, differential scanning calorimetry, thermogravimetric analysis, battery testing techniques, and cyclic voltammetry.

- **Luminescent Materials:** Synthesis, characterization, and spectroscopic properties of transition and rare-earth elements in phosphate materials; and use of modeling schemes.
- **Materials for Catalysis (Fluorine Chemistry):** Synthesis of inorganic compounds using original low-temperature routes, which involves fluorination methods and supercritical fluids techniques; and open-structure materials possessing catalytic properties.

Professional Society Activities

Member, Moroccan Association of Crystallography, Faculty of Sciences Semlalia, Cadi Ayyad University, Marrakech, Morocco

Member, Integrated Action (Morocco/France), Faculty of Sciences Semlalia, Cadi Ayyad University, Marrakech, Morocco/Bordeaux Institute of Condensed Matter Chemistry, French National Center for Scientific Research, University of Bordeaux 1, Bordeaux, France

Referee, U.S. Department of Energy Small Business Innovation Research Program

Education

Ph.D. (Honors), Solid-State Chemistry and Materials Science, University of Bordeaux
M.S. (Honors), Solid-State Chemistry and Materials Science, University of Bordeaux
B.Sc., Inorganic Chemistry, Cadi Ayyad University, Marrakech, Morocco