Curtis Berlinguette

ISEEE Fellow

Associate Professor, Faculty of Science
Chemistry

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Education
BSc, University of Alberta
PhD, Texas A&M University
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Research Areas / Keywords
Solar Energy Conversion

Research Interests
Berlinguette's research activities focus on the development of molecular materials that convert solar energy to electrical energy. Specifically, his program is seeking methods to improve the light-harvesting ability of chromophores in 'dye-sensitized solar cells' (DSCs). To make these cells economically viable, his group is generating dyes that absorb a larger portion of the solar spectrum to push photon-to-electron conversion efficiencies beyond 10%. They hope to achieve this using cheaper materials to help drive down the fabrication costs – an important step forward toward the bulk manufacture of this class of solar cells. Berlinguette's research also encompasses the chemistry of transition metal complexes pertinent to the storage of solar energy in chemical bonds. This aspect of his program involves the design of catalysts that will drive the conversion of water into hydrogen fuel using sunlight as the energy input.