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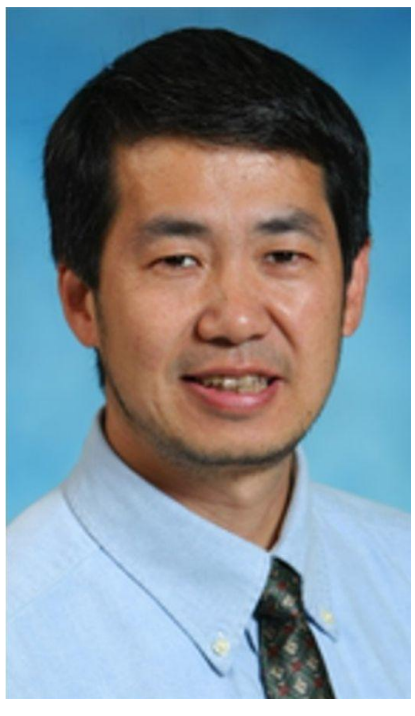

Peng Zhang

Dept of Chemistry, Dalhousie University, Halifax, NS

Title | **Nanoalloy Catalysts: Correlations of Structure, Electronic, and Catalytic Properties**

Abstract | Synchrotron X-ray spectroscopy techniques are powerful tools for in-depth analysis of the atomic structure and electronic properties of catalysts. In this talk, the application of these techniques in the study of alloy nanostructures will be presented. Materials of interest include bimetallic single-atom-alloy catalysts and multi-element systems such as high-entropy alloys. It will be demonstrated that the X-ray spectroscopy techniques, in combination with associated experimental and computational methods, are highly effective in illustrating how the atomic structure and electronic properties of nanoalloys correlate with their catalytic performance. The element-specific analysis of multi-metallic alloy systems using energy-tunable X-ray spectroscopy techniques is expected to become a routine approach for gaining a more comprehensive understanding of their structure-property relationships in catalytic applications.

Bio | Peng Zhang received his B.Sc. and M.Sc. from Jilin University and Ph.D. from the University of Western Ontario under the supervision of Professor T.K. Sham. After spending two years at McGill University as an NSERC postdoctoral fellow under the supervision of Professor R. Bruce Lennox, he joined Dalhousie University in 2005 as an assistant professor and is currently a full professor. His research focuses on synchrotron X-ray spectroscopy studies of nanomaterials and their applications in catalysis and biomedicine.

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