



**MRSEC Distinguished Speaker Seminar**



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Professor

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**Thursday April 28, 2016 at 11:00am**

**Tech M164**

**“From Discrete Metal Complexes and Coordination  
Motifs to Supramolecular Assembly, Nanostructures  
and Functions”**

Recent works in our laboratory have shown that novel classes of light-absorbing and luminescent metal-containing molecular materials could be assembled through the use of various metal-ligand and coordination chromophoric building blocks. In this presentation, various design and synthetic strategies will be described. A number of these metal-ligand chromophoric complexes and coordination compounds have been shown to display rich optical and luminescence behavior. Correlations of the chromophoric and luminescence behavior with the electronic and structural effects of the metal complexes and coordination compounds have been made to elucidate their spectroscopic origins. These simple discrete metal complexes and coordination compounds are found to undergo supramolecular assembly to give a variety of nanostructures and morphologies. By understanding the spectroscopic origin and the structure-property relationships, different approaches and assembly motifs have been employed to tune their electronic absorption and emission characteristics. Subtle changes in the microenvironment and nanostructured morphologies have led to drastic changes in both the electronic absorption and emission properties of these supramolecular assemblies. Explorations into the underlying factors that determine their spectroscopic properties and morphologies as well as their assembly mechanisms have provided new insights into the understanding of the interplay of the various intermolecular forces and interactions for the directed assembly of novel classes of metal-containing soft materials and hybrids. Through rational design and various strategies, these molecular materials may find potential applications and functions as efficient triplet emitters for small-molecule and solution-processable organic optoelectronics, and as materials for memories, chemosensing and biological assays.

**Biography:** Vivian W.W. Yam obtained her BSc (First Class Hons) in 1985 and PhD in 1988 both from The University of Hong Kong. After spending two years on the faculty of the City Polytechnic of Hong Kong (now City University of Hong Kong), she joined the Department of Chemistry in her alma mater in 1990, rising through the academic rank of Senior Lecturer (1995), Reader (Professor) (1997), and was appointed Chair Professor in 1999. She is currently the Philip Wong Wilson Wong Professor in Chemistry and Energy and Chair Professor at HKU. She was elected to Member of the Chinese Academy of Sciences in 2001 at the age of 38 as the youngest member of the Academy, Foreign Associate of the US National Academy of Sciences in 2012, Foreign Member of Academia Europaea in 2015, Fellow of the TWAS in 2006, and Founding Member of The Academy of Sciences of Hong Kong in 2015. She was the Laureate of the 2011 L'Oréal UNESCO For Women in Science Award and recipient of the 2015 RSC Ludwig Mond Award, 2005/06 RSC Centenary Medal, 2005 State Natural Science Award, 2006 Japanese Photochemistry Association Eikohsha Award, 2014 Chinese Chemical Society-China Petroleum & Chemical Corporation (Sinopec) Chemistry Contribution Prize, Docteur Honoris Causa (U Rennes 1, 2013), 2012-13 Seaborg Lectureship (UC Berkeley), 2015-16 Lee Lectureship (U Chicago), 2016 Lavoisier Lectureship (U Paris Diderot), 2011 Ho Leung Ho Lee Foundation Prize for Scientific and Technological Progress, 2007 Fulbright Distinguished Scholar, 2000-01 Croucher Foundation Senior Research Fellowship, 2002 Ten Outstanding Young Persons of Hong Kong, 2008 Hong Kong Outstanding Women Professionals and Entrepreneurs Award, 2015 Bronze Bauhinia Star (BBS), and Leader of the Year 2015 etc. She has published over 420 journal articles. She currently serves as an Associate Editor of *Inorg. Chem.* and Member of International Editorial Advisory Boards or Editorial Boards of *Acc. Chem. Res.*, *JACS*, *Angew. Chem.*, *Chem. Sci.*, *Chem*, *ACS Nano*, *Chem. Mater.*, *Progress Inorg. Chem.*, *Coord. Chem. Rev.*, *Phil. Trans. Royal Soc. A*, *Comments Inorg. Chem.*, *JOMC*, *Inorg. Chim. Acta* etc. Her research interests include inorganic and organometallic chemistry, supramolecular chemistry, and metal-based molecular functional materials for sensing, organic optoelectronics and energy research.