Soft X-Ray Excited Optical Luminescence: Some Recent Applications
Y. F. Hu\textsuperscript{a}, P. S. Kim\textsuperscript{b}, P. Zhang\textsuperscript{b}, S. J. Naftel\textsuperscript{b}, B. W. Yates\textsuperscript{a}, K. H. Tan\textsuperscript{a}, and T. K. Sham\textsuperscript{b}

\textsuperscript{a}Canadian Synchrotron Radiation Facility, Synchrotron Radiation Center, University of Wisconsin-Madison, 3731 Schneider Drive, Stoughton, WI 53589, USA
\textsuperscript{b}Department of Chemistry, University of Western Ontario, London, Ontario, N6A 5B7, Canada

A survey of x-ray excited optical luminescence (XEOL) study of several classes of light emitting materials (nanostructures, organic light emitting materials, etc.) excited using soft x-rays (photon energy ranging from tens to thousands of eV) will be presented. The optical yield, in addition to the commonly used total electron and fluorescence yields, was used to obtain X-ray Absorption Fine Structures (XAFS). We show that XEOL with soft x-rays (short penetration depths) is often site specific and is ideally suited for the study of light emitting thin films and devices. Several examples including silicon and CdS based nanostructures as well as organic light emitting diode materials will be used to illustrate the unique properties of XEOL and its applications in the soft x-ray energy region.

Submitting author: Y. F. Hu, e-mail: yfhu@facstaff.wisc.edu