

**The Canadian Light Source (CLS):
Finding Solutions with Synchrotron Techniques**

Joel Reid, Industrial Senior Scientist

Canadian Light Source, 44 Innovation Boulevard, Saskatoon, SK, Canada

The Canadian Light Source (CLS), Canada's national synchrotron facility, is located in Saskatoon, SK. The CLS is a 3rd generation synchrotron source, providing intense light spanning the spectrum from far infrared to hard X-rays. Synchrotrons can perform many analytical techniques found in the laboratory with shorter data collection times, smaller spot sizes, improved spectral resolution and better detection limits. Additional techniques are also available that are unique to synchrotron sources, providing powerful spectroscopic tools for understanding chemical and electronic structure. Many of these benefits make the synchrotron ideal for *in situ* and *operando* experiments. This talk will introduce the CLS and discuss multiple categories of synchrotron techniques including diffraction, spectroscopy and imaging. Applied examples will illustrate their utility for solving problems from a variety of disciplines including chemistry, physics, materials, environmental and life sciences.