

## Dynamics at the Nanoscale by Ultrafast Electron Microscopy

The research program is intrinsically interdisciplinary and requires complementary skills and expertise. The combined expertise of three principal team members (Profs. Bradley Siwick, Jean-Claude Kieffer and Federico Rosei) creates a *special opportunity* for collaborative research on the development of a Dynamic Transmission Electron Microscope (DTEM) to investigate dynamic processes such as nucleation and growth at the nanoscale. The Team is reinforced by the unique opportunity to collaborate with the UEM/DTEM Group at Lawrence Livermore National Lab (LLNL). We are looking for a suitable post-doctoral candidate to lead this effort. The project will provide a range of opportunities for independent, world-class research. The ideal candidate will be:

1. A Ph.D in Physics/Chemistry/Materials Science with strong experience in Transmission electron microscopy with an interest in studying dynamic processes at the nanoscale with novel probes. Some background/interest in optics is preferred, but not necessary.

Or alternatively

2. A Ph.D in Physics/Chemistry/Materials Science with strong experience in ultrafast laser technology and an interest in ultrafast materials science with non-spectroscopic probes.

To apply, send a cover letter with description of research interests, personal goals and interest in this particular project, together with a CV and full publication list and the contact information for 3 references to the attention of Prof. Federico Rosei ([rosei@emt.inrs.ca](mailto:rosei@emt.inrs.ca)) with CC to Prof.s Jean Claude Kieffer ([kieffer@emt.inrs.ca](mailto:kieffer@emt.inrs.ca)) and Bradley Siwick ([bradley.siwick@mcgill.ca](mailto:bradley.siwick@mcgill.ca)).

Applicants with multiple post-doc experiences or with more than 4 years of post-PhD experience will not be considered.

### References:

1. W. E. King, G. H. Campbell, A. M. Frank, B. W. Reed, J. Schmerge, **B. J. Siwick**, B. C. Stuart, P. M. Weber, *Ultrafast Electron Microscopy in Material Science, Biology and Chemistry*, J. Appl. Phys. **97** (2005), Art. No. 111101.
2. Judy S. Kim, Thomas LaGrange, Bryan W. Reed, Mitra L. Taheri, Michael R. Armstrong, Wayne E. King, Nigel D. Browning, and Geoffrey H. Campbell, *Imaging of Transient Structures Using Nanosecond in Situ TEM*, Science **321** (2008) 1472.