

# CANADIAN SYNCHROTRON RADIATION FACILITY

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The Canadian Synchrotron Radiation Facility (CSRF) is a national research facility that is owned and managed by NRC-CNRC (National Research Council Canada) and NSERCC (Natural Sciences and Engineering Research Council of Canada). It is located at the Synchrotron Radiation Center (SRC), University of Wisconsin-Madison, and is operated by the University of Western Ontario since 1982. CSRF provides three beamlines to the Canadian user community: a Grasshopper (20 to 250 eV), an SGM (240 to 700 eV) and a DCM (1500 to ~5000 eV). The SGM is moving to the Canadian Light Source (CLS) in October of 2003.

These beamlines are regularly used for XANES and EXAFS analysis of solids with simultaneous collection of the Total Electron Yield (TEY) and Fluorescence Yield (FY) signals. This allows the determination of surface structure (TEY) and bulk structure (FY) of the sample. Other experiments performed at CSRF beamlines include X-ray Excitation Optical Luminescence (XEOL), Magnetic Circular Dichroism (MCD) and Photoemission Electron Energy Microscopy (PEEM) of solids, and PhotoElectron-PhotoIon-CoIncidence (PEPICO) spectroscopy of gases.

The research done at CSRF spans over a broad range of disciplines including: materials science (semiconductors and nanoparticles), biology (plants and bacteria), environmental studies (soils and solid particles from lakewater), tribology (anti-wear oil films), agriculture (manure) and geology (rocks and minerals). Most users of the CSRF beamlines are from Canada. A few are from New Zealand and the United States. On average, over 25 papers containing work done at CSRF are published annually.