**CAMCOR**

A large portion of the University of Oregon’s major research equipment is organized in a shared facility—the **Center for Advanced Materials Characterization in Oregon (CAMCOR**), which functions as a service center under the auspices of the UO Vice President for Research and Innovation (VPRI) office. CAMCOR is supported by a combination of internal and external user fees, grants from the Oregon Nanoscience and Microtechnologies Institute (ONAMI), NSF, Oregon BEST, and other sources. *The goal of CAMCOR is to maximize usage of state-of-the- art characterization equipment through 1) open access, 2) highly qualified, Ph.D.-level staff to assist users, and 3) attractive user charges.* Its primary services include:

* High-resolution electronic microscopy and microanalysis
* Focused Ion beam microscopy
* Surface analysis
* Small molecule and polymer characterization
* X-ray analysis

The CAMCOR model has proven highly effective in raising the quality and diversity of research infrastructure that is available to all researchers in the region. The principle UO users include groups focused on the analysis of organic, inorganic, and biological samples. The facility also attracts a broad spectrum of the research and education community, including K-12, college, and university educators; college and university researchers; and industrial and national lab collaborators. In addition to the above user groups, open-access CAMCOR facilities are used routinely by a broad spectrum of external users from other institutions (e.g., Oregon State University, Willamette University) as well as local commercial clients (e.g. Organic Consultants, Setareh Biotech, etc.) and established regional/national/international companies (Arclin, Life Technologies, Abcam, etc.).

These open-access facilities provide research training and support for undergraduate students, graduate students, postdoctoral researchers, staff scientists, and external researchers. Additionally, such services are often routinely used by multiple undergraduate and graduate courses within the Department of Chemistry & Biochemistry, Graduate Internship Program (GIP), and community outreach programs. The CAMCOR facilities also provide critical core instrumentation access and support for many UO spin-off or UO-related enterprises. Such access is integral in the University’s stated goal to serve as an incubator and catalyst for innovation in the basic sciences that lead to successful commercial ventures impacting residents in Oregon and beyond.

*Key instrumentation in the open-access CAMCOR facility include:*

**Chemistry Research Instrumentation:** JA LC9101 Recycling Preparative HPLC. Perkin-Elmer 1320 GC with 1022 mini-PC controller; PAR 173/175 for electrochemical studies; Seagull reflectance and Vari-GATR; HP 8453 Diode array UV/vis absorption spectrophotometer; Waters Gel Permeation Chromatography systems equipped with MALLS and reflective index detectors for molecular weight characterization, Quantum Design 5 Tesla SQUID Magnetometer; Hewlett Packard 8453 UV-Vis Spectrophotometer; Agilent Cary60 UV-Vis Spectrophotometer; Agilent 11 Series LC/MSD; Thermo Finnigan LC QDECAXP-Plus; Horiba Jovin Yvon FluoroMax-4P NIR with Fluorescense Lifetime system, integrating sphere & Fluorohub single photon counter, MicroCal ITC200 Isothermal Titration Calorimeter for measuring solution thermodynamic parameters for supramolecular/host-guest interactions; Horiba Scientific FluoroMax Plus-C spectrofluorometer with Quanta-Phi 6” integrating sphere for QY measurements.

# Focused Ion-Beam and Scanning Electron Microscopy Facility (FIB-SEM): FEI Helios 600i Dual Beam – Focused Ion Beam (DB- FIB) with EDS; FEI Helios 600 DB-FIB; ThermoFisher Helios Hydra G4 Plasma FIB with EDS and EBSD; ZEISS Ultra-55 Thermal Field Emission SEM w/JC NPGS lithography control system.

**High Resolution and Analytical TEM Facility:** FEI Titan Transmission Electron Microscope (80-300 kV) with Cs spherical aberration correction, EDX, and EELS; FEI Tecnai G2 Spirit TEM with EDS.

**Microanalytical Facility:** FEI Quanta 200 ESEM/VPSEM Microscope with EDS and CL; CAMECA SX100 5-spectrometer Electron Microprobe with EDS

**NMR/EPR Spectroscopy Facility:** 600 MHz Bruker Avance III HD, 2-channel, multinuclear cryoprobe & CP/MAS solids magnet; 500 MHz Bruker Avance III HD, 2-channel, multinuclear cryoprobe; 500 MHz Varian Inova, 3-channel; Varian VNMRS 500 MHz NMR with Phoenix 1.6 mm HXY Solid-State NMR probe; Bruker EleXsys E-500A EPR

**Polymer Characterization and Thermal Analysis Facility:** TA Instruments TGA Q500 Thermogravimetric Analyzer; TA Instruments DMA Q800 Dynamic Mechanical Analyzer, TA Instruments DHR-2 rheometer, TA Instruments DSC, Thermo Scientific Nicolet 6700 FTIR spectrometer with ATR, Wyatt Mobius dynamic light scattering, Dimatix DMP 2381 Precision Inkjet Materials Printer

**SuNRISE Microfabrication and Photovoltaics Characterization Facility:** Zygo NewView 7300 optical 3D profilometer; Dektak 6M stylus profilometer; Perkin Elmer Lambda-1050 UV/Vis/NIR spectrophotometer; Solar cell I-V characterization system; Angstrom Instruments E-Beam / Thermal Deposition System; Angstrom Instruments Sputter deposition system, Ultratech Savannah ALD system; Woollam M2000 VASE ellipsometer; Microtech LW405 direct write lithography; Suss Microtec MBJ-4 mask aligner.

**Surface Analytical Facility:**ION-TOF Model IV Time-of-Flight Secondary Ion Mass Spectrometer (ToF-SIMS); ThermoScientific ESCALAB 250 X-ray Photoelectron Spectrometer (XPS); WITEC alpha300S Scanning Near-field Optical/Confocal Raman Microscope; Woollam M44 Spectroscopic Ellipsometer; Bruker Dimension FastScan AFM, JEOL JAMP 7830F Field Emission Auger Microprobe.

**X-Ray Diffraction Laboratory:**Single crystal Bruker SMART APEX CCD Area Detector System; Single crystal Bruker SMART APEX2 CCD Area Detector DUO System; Bruker D8 Discover Thin-Film & Powder XRD; Philips X'Pert PW 3040 – optimized for the study of ultrathin films. Rigaku SmartLab Thin-Film & Powder XRD.