

# ARC LIFE SCIENCES STOCKROOM

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arc stockroom@colostate.edu



Our online catalog and information: research.colostate.edu/bio/freezer-program/



ANALYTICAL RESOURCES CORE COLORADO STATE UNIVERSITY

#### VISION

We aim to foster a collaborative and inclusive learning and service environment where researchers can obtain valuable data and insights, driving

scientific progress and new discoveries.

#### Follow us on social media:



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Analytical Resources Core at CSU

o arc\_csu

arc\_csu@colostate.edu



Scan the QR code or follow the link to learn more:

### research.colostate.edu/arc/



VICE PRESIDENT FOR RESEARCH COLORADO STATE UNIVERSITY

COLORADO STATE UNIVERSITY

## ANALYTICAL RESOURCES CORE



Enabling cutting-edge STEM research and development programs by providing access to analytical instrumentation, expert guidance, research training and services to CSU and the broader community.

research.colostate.edu/arc/

# **APPLICATIONS & EDUCATION**

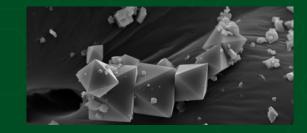


#### **MOLECULAR ANALYSIS**

- purity analysis
- black carbon quantification
- spin/radical characterization
- small molecule structure elucidation
- macromolecular characterization (polymers, glycans, glycolipids, proteins, oligonucleotides, etc.)
- chromatographic separations and fraction collection of mixtures
- chemistry of dissolved natural organic matter
- metabolic isotope tracing and metabolic flux
- analysis of metals and non-metals, isotopes and metals speciation
- time-resolved fluorescence measurements
- excited state lifetime determination
- optical analysis in the infra-red, visible, or ultraviolet light range

### SURFACE ANALYSIS

- composition and chemical state information of surfaces
- thin film optical properties and thickness
- surface roughness, hydrophilicity, and feature profiling



#### **ELECTRON MICROSCOPY**

- atomic-level imaging of structure and morphology
- nanoscale elemental detection and mapping of surfaces and thin specimens
- electron diffraction and strain analysis
- semi-automated data collection and electron tomography
- biological and soft material preparation: fixation, staining, and ultra-thin sectioning
- room temperature single particle analysis



#### MATERIALS ANALYSIS

- stress and strain of thin films
- purity, composition and thermal stability of materials
- variable temperature magnetic and electrical properties
- quantitative and qualitative phase analysis



### OMICS

 metabolomics and lipidomics: quantitative and qualitative profiling of small molecules,



metabolites, and biomarkers in wastewater, soils, biological tissues and fluids, etc.

- proteomic analyses including:
  - post-translational modifications
  - protein identification
  - peptide sequencing
  - protein crosslinking for structure analysis
  - metaproteomics (community and microbiome proteomics)
  - top-down proteomics
  - glycoproteomics
  - bacterial identification of isolates
- adductomics
- ionomics (elemental composition of organisms)

#### **EDUCATION & TRAINING**

The ARC offers students and researchers valuable exposure to high-end instrumentation and data collection through hands-on training, self-operation of instruments, method development assistance, specialized workshops, and student and postdoctoral training fellowships. We assist in academic coursework and offer broad technology education through the ARC monthly seminar series.

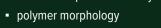


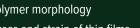
Don't see what you need on this list? Contact us at arc\_csu@colostate.edu for inquiries and consultations.



colloidal dispersion stability









nanoparticle size and charge