



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

**Cryo-EM Sr. Research Associate - Engineer**  
**Center for Electron Microscopy and Microanalysis**  
**College of Engineering**

## **The University**

More than 40,000 faculty and staff members play important roles in advancing the mission of Ohio State. Whether you teach students, care for patients, perform research or provide professional services, Ohio State offers something for nearly everyone to make a meaningful difference. As a member of the Buckeye community, you are poised for an exciting future at an outstanding institution that is rich in tradition.

The Ohio State University is committed to establishing a culturally and intellectually diverse environment, encouraging all members of our learning community to reach their full potential. We are responsive to dual-career families and strongly promote work-life balance to support our community members through a suite of institutionalized policies. We are an NSF Advance Institution and a member of the Ohio/Western Pennsylvania/West Virginia Higher Education Recruitment Consortium (HERC).

## **The College**

Ohio State's College of Engineering and Knowlton School of Architecture strive to foster a learning culture that prepares students to be key contributors to society through their technological, professional and personal skills. Our faculty and our students thrive in an environment of new ideas and concepts that expand the understanding of science, engineering and architecture.

In addition to being an innovative leader in engineering and architecture education, we endeavor to fulfill our university's land-grant mission of advancing Ohio's economic mobility, competitiveness and standard of living through our contributions toward technology and creativity, continuous improvement, a diverse workforce and lifelong learning. The college also is firmly committed to and a catalyst for the University's Discovery Themes - Energy and Environment, Food Production and Security and Health and Wellness.

## **Department Information**

The Center for Electron Microscopy and Analysis (CEMAS) is one of the largest concentrations of electron and ion beam analytical microscopy instruments in any North American institution. CEMAS brings together multidisciplinary expertise to drive synergy, amplify characterization capabilities, and challenge what is possible in analytical electron microscopy. Our world-class multidisciplinary approach enables academic and business partners to "see more" than ever before. CEMAS is a full-service research facility - from extensive sample preparation laboratories to image-processing tools and support, and allows researchers to carry out their entire microscopy and analysis program at CEMAS. Located in a custom designed facility on The Ohio State University's West Campus, every instrument in the facility meets or exceeds manufacturer performance specifications.

In 2018, CEMAS will install a Thermo Fisher Scientific Glacios cryo-TEM with a direct electron detector as well as a Titan Krios fitted with a K3 Bioquantum phase plates, and a spherical aberration corrector. At CEMAS, we are invested in the convergence of physical and life sciences and are seeking enthusiastic scientists to join our team.

## **Position Overview**

CEMAS has an opening for a Cryo-EM Senior Research Associate - Engineer to initiate and lead Transmission Electron Microscopy (TEM) research and development efforts in the area of cryo-electron microscopy. This position will coordinate, design, and conduct experiments for various research projects and CEMAS microscopy users and services. This position will collaborate with a multi-disciplinary team of faculty and scientists within CEMAS, at The Ohio State University, and within external research institutions to meet objectives and reporting requirements. This person will function as a subject matter expert or technical consultant on one or more phases of related project(s) including but not limited to sample preparation, data collection, and data analysis. This position will interact with users to ensure the setup of data collection is according to project needs, evaluates quality of data obtained by users, prepares TEM specimens, operates transmission electron microscopes of cryo-specimens, and screens cryo-TEM specimens for suitability in structure research. This position will conduct assessment prior to data collections, including but not limited to performing preliminary image data quality, loading samples, and tuning microscopes. In addition, this position will oversee and maintain cryo-transmission electron microscopes and ancillary related equipment at highest performance levels, which requires interfacing with Engineering Technology Services (ETS) for support to ensure optimal data collection, storage and data processing as needed. This position will develop workflows for efficient and high end data collection, as well as perform research in single particle and tomography studies, in particular contributing to technique developments using advanced technologies including phase plates and image aberration correction. This position will supervise research support staff. This position will provide guidance on new scientific directions that could have an impact on improving services provided by the facility, as well as contribute to technique developments using advanced technologies including phase plates and image aberration correction. In addition, this position will contribute to increasing the structural biology scientific expertise of the Center by publishing high-impact research papers and establishing academic collaborations, including writing or editing and approving progress reports, technical reports and/or journal articles.

### **Performance Objectives**

Success in this role will require enthusiasm for advanced electron microscopy and a desire and aptitude to learn quickly and continue to grow technically, as well as an appreciation for both fundamental and applied research.

### **Experience Requirements**

*Required:* PhD in a relevant field of science or engineering or an equivalent combination of education and experience; extensive experience in cryo-TEM including sample preparation, single particle cryo-TEM workflow and/or cryo electron tomography; extensive experience in an engineering research capacity; experience in a progressively responsible administrative capacity; ability to manage multiple projects simultaneously; excellent written and verbal communication skills; ability to work dynamically in a diverse team environment; experience supervising technical support personnel.

*Desired:* Hands on experience operating FEI Titan Krios microscope and FEI Glacios microscope (or equivalent); experience with computational image processing and analysis of cryo-EM images.

### **Application Instructions**

**To be considered, apply online at <https://hr.osu.edu/careers/>, job opening number:439690. This posting will be active from June 9, 2018 through July 15, 2018.**

To be considered, please submit your application electronically via the Careers at Ohio State jobs website. Application materials must include a curriculum vita.

The Ohio State University campus is located in Columbus, the capital city of Ohio. Columbus is the center of a rapidly growing and diverse metropolitan area with a population of over 1.5 million. The area offers a wide range of affordable housing, many cultural and recreational opportunities, excellent schools, and a strong economy based on government as well as service, transportation and technology industries. Additional information about the Columbus area is available at [visit.osu.edu/experience](http://visit.osu.edu/experience).