

Faculty advisor: Konstantin Kornev

**MATERIALS SCIENCE &
ENGINEERING**

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Project description.

We are seeking a motivated and qualified Postdoctoral Researcher specializing in advanced 3D X-ray imaging to study materials. The Postdoctoral Fellow will take the leadership role in operating, developing, and maintaining our X-ray imaging suite in the new Advanced Materials Innovation Complex (AMIC). AMIC's imaging facility will feature cutting-edge X-ray technologies, including nanomechanical, optoelectronic, and three-dimensional X-ray imaging. These techniques will be developed with machine learning and automation to help researchers analyze and manipulate materials in ways that were previously not possible. The successful candidate will play a crucial role in ensuring the optimal performance of our state-of-the-art imaging facility and providing technical expertise to researchers. This position offers exciting opportunities to engage in multi-university collaborative research and work with the industry.

Key Responsibilities, including but not limited to:

- Use advanced X-ray imaging techniques to study materials phenomena operando/in situ for extreme environments.
- Perform management duties for the X-ray imaging suite, to ensure efficient and effective lab access, routine maintenance, calibration, and troubleshooting to ensure the reliability and longevity of the equipment.
- Offer user support in setting up and optimizing imaging conditions for research needs.
- Provide training and guidance to graduate students, postdocs, and faculty on the proper operation and data analysis.
- Participate in the preparation of research proposals and grant applications.
- Perform data analysis, write and publish research findings in high-profile peer-reviewed journals, and present results at major society conferences.
- Perform collaborative research with other research groups

Qualifications

- Deep knowledge of X-ray Imaging and experience with 3D X-ray imaging instruments
- Experience with operando/in situ characterizations
- Strong background in image analysis and data processing using machine learning and artificial intelligence. Familiarity with Dragonfly or Amira-Avizo software is a big plus
- Familiarity with programming languages (e.g., Python, MATLAB) for custom data analysis and automation.
- Strong publication record and experience in general laboratory equipment operation and maintenance.

If interested, please email Prof. Konstantin G. Kornev at kkornev@clmson.edu with a statement of interest and your curriculum vitae.