Title: Research in the Reifsnyder Hickey Group: Investigating Atomic and Nanoscale Structures

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Abstract:

Research in the Reifsnyder Hickey group focuses on investigating the atomic and nanoscale structures of materials using principles from chemistry, physics, and materials science. We are interested in understanding the origin of nanoscale features, controlling them, and correlating them with intriguing properties at larger length scales. For this, we use aberration-corrected scanning and transmission electron microscopy (S/TEM) as a key analytical technique, alongside other structural and chemical probes, simulations, and machine learning. We seek to advance the capabilities of S/TEM to study a wide range of complex systems, such as nanomaterials, devices, and biomaterials, while exploring in situ transformations and nanoscale electronic and optoelectronic properties.