



## WEBINAR ANNOUNCEMENT

### In-situ heating experiments in TEM/STEM

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**Date: June 25, 2020**

**Time: 11:00 AM – 12:00 PM (EDT)**

**Abstract:** In-situ heating experiment performed in the scanning/ transmission electron microscopes (STEM/TEM) allows us to directly observe the dynamic behaviors of the materials with sizes ranging from micron- to atomic level in real time. The Materials Characterization Facilities (MCF) at IEN currently has two microscopes (FEI Tecnai F30 and Hitachi HD2700) with in-situ heating capabilities. The TEM techniques including (large-scale or atomic) imaging, phase/elemental analysis and diffraction that we could perform in those facilities for in-situ heating will be introduced briefly. A few examples made by the users and manufactures will be given to show how useful the in-situ heating experiments can help us to understand the structural evolution of materials fundamentally. Finally, it will be discussed a strategy to deal with preparation of TEM samples for high temperature heating.

**Bio: Dr. Mengkun Tian** received his Ph.D. degree in the department of Materials Science and Engineering at University of Tennessee, Knoxville (UTK) in 2015, supervised by Prof. Duscher (UTK) and Dr. Geohegan (Oak Ridge National Laboratory). His dissertation is related to structural evolution of photocatalytic TiO<sub>2</sub> made by ultra-small amorphous building blocks. During 2015 and 2018, he worked as a post-doc research associate in Dr. Zawodzinski's group at UTK to fabricate and investigate the corrosion resistant cathode materials for solid acid fuel cell. He was a visiting scientist at Oak Ridge National Laboratory from 2011 to 2018. He joined Georgia Tech as a post-doc in May, 2018 and was promoted to research scientist II last October. His current research interests include in-situ corrosion testing on metals, electron beam induced phase transformation, and phase transformation of high entropy alloys.

**Who should attend:** Faculty, scientists, engineers, researchers, and technical staff from university, company, or government labs who use, or are interested in learning about material characterization toolset, in particular, SEM/TEM as part of their research efforts.

Join the Online Event June 25<sup>th</sup> at this link: <https://bluejeans.com/949737327>