

# ISMC - In Situ Microscopy Congress

2-3 March, 2020 | Raleigh, North Carolina

Join us for the first In Situ Microscopy Congress at the Analytical Instrumentation Facility of North Carolina State University. During this exciting two-day workshop, you will have the opportunity to learn about liquid phase and gaseous phase in situ TEM capabilities throughout the duration of the Congress. Featuring live product demonstrations by Protochips and Thermo Fisher Scientific on Day 2, attendees will gain firsthand experience with advanced in situ TEM techniques.

**Register here: <https://www.eventbrite.com/e/in-situ-microscopy-congress-tickets-83202188987>**

*\*Once registered, authors will have the option of submitting an abstract to be considered for an oral or poster presentation.\**

## Session I: In Situ Liquid Cell TEM/STEM

Only a few decades ago, imaging liquids in the TEM was thought to be impossible. Now, researchers are routinely using in situ liquid cell TEM (LCTEM) techniques to conduct experiments in realistic wet environments for applications in disciplines ranging from Material Science to Life Science. These symposia will highlight many aspects of LCTEM, from cutting-edge results and future research directions to new techniques and improved equipment designs.

Topics to include: quantitative electrochemistry, liquid heating, EDS and EELS in liquids, innovation in liquid cells and holder designs, high resolution microscopy and spectroscopy, low dose imaging, nucleation and growth phenomenon, biological sample imaging, data analysis and interpretation.

## Session II: In Situ Gas Cell TEM/STEM

The high-vacuum environment within electron microscopes significantly inhibits, or even completely removes, chemical sample dynamics that occur in realistic, extreme environments. With the advent of closed-cell holder designs it is now possible to precisely introduce high pressure gases to the sample environment. This allows researchers to mimic the hot, caustic environments relevant to real-world applications. These symposia will showcase new results and applications for environmental TEM techniques, as well as cover new equipment capabilities and in situ techniques related to the field.

Topics to include: heterogeneous catalysis, corrosion in extreme environments, EDS and EELS in gas phase experiments, integrated Mass Spec RGA measurements, sample preparation and experimental methods, innovations in hardware and software, and approaches for data analysis and data management.

TIME	DAY 1
8:30-9:00	Registration and Check-In
9:00-9:15	Opening remarks from AIF, Thermo Fisher Scientific, and Protochips
9:15-12:00	Technical Session: In Situ Gas Cell TEM/STEM
9:15-10:15	Plenary Speaker: Xiaoqing Pan, UC Irvine
10:15-10:30	Coffee Break
10:30-12:00	Oral Presentations
12:00-1:00	Lunch – Included with Registration
1:00-3:45	Technical Session: In Situ Liquid Cell TEM/STEM
1:00-2:00	Plenary Speaker: Haimei Zheng, Lawrence Berkeley National Lab
2:00 - 2:30	Oral Presentations
2:30-2:45	Coffee Break
3:15-3:45	Oral Presentations
4:00-5:15	Poster Session and Happy Hour
TIME	DAY 2
9:30-11:00	Introductory Presentations by Thermo Fisher Scientific and Protochips
11:00-11:15	Coffee Break
11:15-12:15	Panel Discussion on In Situ TEM/STEM
12:15-1:15	Lunch - Included with Registration
1:15-2:45	Hands-on Product Demonstrations
	Imaging liquid Samples Using the Aberration Corrected Titan 80-300 STEM
	Studying Catalysts in Atmospheric Environments with the Talos F200X G2 TEM/STEM
	Capabilities and Applications using Focused Ion Beam (FIB) Techniques
2:45-3:15	Coffee Break and Transition to Next Demo
3:15-4:45	Continued Product Demonstrations Outlined Above
4:45-5:00	Wrap Up and Conclusions