In-situ Transmission Electron Microscopy: a MEMS-based route to explore untapped research possibilities at the nanoscale

Speaker: Dr. Hugo Pérez, CTO, DENSSolutions BV

Abstract:

In Situ TEM technology combines the imaging capabilities of transmission electron microscopy with the power and versatility of MEMS devices, in order to observe real-time dynamics at the nanoscale as a function of different stimuli. This is therefore transforming the way we understand things at the atomic scale. In this presentation, we´ll explain the unique architecture of our MEMS devices, which are equipped with different nano-sensors and/or nano-actuators. And how, in combination with our gas and liquid supply systems, they allow you to introduce and control the environment around your sample. We will show the unique benefits of our solutions and specific application examples of high impact research that has been made possible by our technology.

Biography:

Dr. Hugo Pérez serves as the Chief Technology Officer at DENSsolutions. He has prior experience as Product Architect, Product Manager and Microsystems Engineer. His core expertise is on MEMS development for various applications, ranging from Life Sciences to Chemistry and Semiconductors. He holds a PhD degree in Nanoengineering, MSc in Molecular Bioengineering, MSc in Nanotechnology and an MBA. During his career, Dr. Pérez has been recognized in multiple international conferences with the best scientific paper/presentation award: 2012 (China), 2014 (The Netherlands), 2016 (Japan) and 2019 (Argentina). Last year, he brought the Microscopy Today Innovation Award from the Microscopy Society of America for the development of an in-situ system for Liquid Phase Electron Microscopy. In April of this year, Dr. Pérez Garza was included by the magazine "Expansion" as one of the 30 business promises of 2021.