



Seminar Announcement

Organized within the B. Sc. Degree Course in Electronic and Digital Technologies Engineering and the M. Sc. Degree Course in Electronic Engineering

March 26, 2025, 11:30 – 13:30, Engineering building, room 155/d1

Accelerating electronic and optical research with FPGA-based tools

Jessica Patterson

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Liquid Instruments San Diego, CA

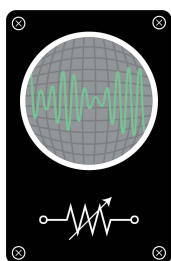
Developing complex technologies requires increasingly sophisticated test systems, but the uniqueness of most applications demands adaptable, customized configurations. Liquid Instruments' reconfigurable Moku is the only integrated test solution engineered for seamless customization whether for simple tests or intricate multi-instrument environments. Used in hundreds of labs worldwide, Moku accelerates the journey from idea to implementation by an order of magnitude, cutting the time and cost of advanced research and development. Designed by researchers for researchers, Moku delivers unparalleled efficiency in today's most complex test scenarios while adapting to your evolving needs in the future.

The topics covered during the seminar will be: learn how **FPGA-based lock-in amplifiers**, equipped with multiple demodulators, enable precise signal extraction in complex environments; use FPGA-based **neural networks** for real-time processing; connect **machine learning** algorithms to the physical world for enhanced inference; explore how to leverage **digital phase-locked loops (PLLs)** to achieve highly accurate phase measurements; simplify **complex optical test setups** and replace analog locking electronics for improved efficiency and performance.

Jessica Patterson is a Technical Marketing Engineer at Liquid Instruments, where she collaborates with users across industries, including optics and photonics, electronic component test, and engineering education. She has demonstrated experience working in the test and measurement sector by providing critical hands-on support to telecommunications customers. Jessica graduated with a Bachelor of Science in Electrical Engineering from Cal Poly, San Luis Obispo.

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ME2S Lab

