

## **Bio-sketch – Umberto Celano**

Umberto Celano is an associate professor with Ira A. Fulton Schools of Engineering at Arizona State University. His research interests lie at the intersection of condensed matter physics, semiconductor technology, and materials analysis, with a focus on nanoelectronics. His group is currently engaged in studying fundamental processes that govern the operation of emerging devices, using nanoscale analytical instruments to achieve device reliability, failure analysis, and correlative metrology. With a multidisciplinary approach, his research work combines device physics and reliability, materials science, and metrology.

Prior to joining ASU, Umberto accumulated over a decade of expertise in semiconductor process characterization, materials analysis, and devices failure analysis. He has worked at international research centers such as imec in Belgium and Stanford University, while also providing consultancy services to major semiconductor foundries and equipment manufacturers. His extensive research endeavors have focused on comprehending the operational and failure mechanisms of logic and memory devices, as well as developing novel instrumentation and techniques for fault isolation. Umberto completed his Ph.D. at the University of Leuven - KU Leuven and imec (Belgium) and holds a master's degree from Sapienza University of Rome.