Cal Poly: Process Development & Reliability Evaluation of Assembling Ultra-Thin Silicon Integrated Circuits onto Textiles for Human Monitoring Systems

Abstract: The objective of this project is to develop an assembly process for attaching ultra-thin silicon chips onto printed flexible substrates that can provide better performance and comfort for wearable medical/human monitoring systems. We will design tooling, characterize and optimize assembly processes, and evaluate various assembly methods' viability for a pilot build that is transferable from the laboratory to the manufacturing floor. By developing assembly technology useful for other applications and growing the expert base, while driving toward a commercially available solution, the project aims to benefit the FHE community overall. Cal Poly will partner with Jabil Circuit, DuPont, and NovaCentrix to complete this project.