

Next generation nanoelectronics for logic and memory are based on devices increasingly smaller, more three-dimensional in shape and containing even more types of materials. Therefore, the evaluation of nanometre-scale materials properties, including carrier profiling, strain, electrical and chemical sensing, becomes essential for a deep interpretation of device's functionalities. Here, I will present the broad role played by scanning probe microscopies for the characterization of state-of-the-art CMOS devices with emphasis on dopant and carrier profiling.