Facilities

PI Casanova's facilities at UF for sensor development and testing include magnetic shielding, circuit testing instrumentation (power supplies, oscillscopes, function generators, vector network analyzer). Co-PI Yong-Kyu Yoon is a member of the Interdisciplinary Microsystems Group (IMG) laboratories at UF that consist of 11 newly renovated laboratories with 5800 ft 2 of lab space used for microsystems design, fabrication, packaging, and characterization. Seven lab spaces (computer, machine shop, electrical testing, mechanical testing, optics, packaging, and wet processing) are considered to be communal lab spaces and the remaining four labs contain more specialized equipment for specific areas of research. Also, an additional simulation lab in the ECE department is located in New Engineering Building (NEB) 500. Available software includes following: PSpice (OrCAD Inc.), Multiphysics simulation tool COMSOL package (COMSOL Inc.), and High frequency structure simulator (HFSS, Ansys, Inc.), among others. The electronic characterization facility contains an impedance Analyzer (HP4194), spectrum analyzer, vector network analyzer (Agilent, E5071E) (3 kHz 20 GHz), and a probe station (Cascade Microtech).

The UF Nanoscale Research Facility (NRF) is a multi-user oriented class 100-1000 cleanroom facility that provides nanofabrication and characterization equipment to the scientific community at the University of Florida. The cleanroom features a bay-and-chase layout with seven different research bays, including e-beam lithography, photolithography, wet processing, hot processing, thin film deposition, and dry etching bays. Additionally, electroplating systems for copper and ferro-magnetic materials and high temperature furnace (Linderburg) are available in BEN 230 and 237C. Major device fabrication equipment includes: Raith-150 electron beam direct write lithography system, deep UV photolithography system, EVG 620 back-side aligner/wafer bonder, Karl Suss MA6, MJB3 aligners, EVG501 wafer bonder, STS 310PC PECVD, KJL multi-target sputtering system, E-beam and thermal evaporators Tystar LPCVD, oxidation, polysilicon, and diffusion furnaces, STS ASE deep reactive ion etcher, Unaxis RIE-ICP, dicing saws, wire-bonders, and die bonding apparatus, as well as metrology instrumentation.