

P. M. RAJ, PH.D. expertise is in packaging of electronic and bioelectronic systems, with emphasis on RF, power and bioelectronic components, and active and passive integration in ultra-thin embedded modules. He is an Associate Professor in Biomedical Engineering and Electrical and Computer Engineering at Florida International University. He demonstrated several advanced electronic packaging technologies related to integrated power and RF modules, working with electronic ecosystem, which include several semiconductor, packaging and material, tool, and end-user companies. His research led to 340 publications. His research received more than 25 best-paper awards. He co-advised more than 30 MS and PhD students who are current leaders and technology pioneers in the electronic packaging industry. He is the Chair of Nanopackaging Technical Committee, EPS Representative of IEEE Nanotechnology Council, IEEE Distinguished Lecturer in Nanotechnology for 2020, Associate Editor for IEEE Nanotechnology Magazine and Transactions of Components, Packaging and Manufacturing Technologies (T-CPMT). He earned his PhD from Rutgers University in 1999 in Ceramic Engineering, ME from the Indian Institute of Science, Bangalore and BS from the Indian Institute of Technology, Kanpur (1993).



DR. P. M. RAJ

Associate Professor, Department of Biomedical Engineering
Florida International University

FRIDAY, SEPTEMBER 10 / 9:00 AM
Room EC 2300

HETEROGENEOUS PACKAGE INTEGRATION FOR HEALTH-MONITORING

ABSTRACT: Advances in packaging drives miniaturization, lower power and reliability of future health-monitoring systems. These advances are the key for low-cost and continuous health monitoring. Packaging is enhanced through device or component-level innovations or through integration of such advanced devices and components for functional density, performance and reliability. This talk will highlight recent advances in both components and device-component-flex co-packaging to realize wearable and implantable neural recording and biophotonic systems. The first part of this talk describes embedded multiferroic flexible films or

tiny multiferroic chipllets to advance power and data telemetry beyond current inductive and antenna links for both neural recording and also neurostimulation applications. The second part reviews embedding devices in miniaturized flex packages for future wearable wireless ECG systems. The third part describes heterogeneous package integration of power, RF and biophotonic components to realize future multimodal sensing systems. Advances in device embedding and 3D rigid-flex integration and associated material, tool and process advances in collaboration with the industry partners at FIU will be highlighted.



Through the generous support of the Wallace H. Coulter Foundation, the Department of Biomedical Engineering facilitates weekly lectures each year during academic terms. Experts in all areas of Biomedical Engineering are invited to provide a research seminar and to meet with faculty and students to discuss the latest developments and research in Biomedical Engineering.

Friday, September 10, 2021
9:00AM-10:00AM | <https://bme.fiu.edu/seminars>