

Flexible RF Electronics

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Future medical, consumer, and communication devices—from wearable electronics to spaceborne appliances—are expected to conform seamlessly onto the surfaces of objects and to human bodies. While enormous advancements have already been made in this respect in applications that operate from DC to sub-GHz frequencies, flexible radio frequency (RF) electronics is still in its infancy. Simple radio transceivers are already being implemented in flexible systems, but technical and theoretical challenges still hinder the adoption of exclusively flexible substrates in fully contained, complex systems, like phased arrays, interferometers, or biosensors. Being at the leading edge of RF research, flexible RF electronics offers several exciting research opportunities in the development of flexible devices (e.g., transistors, diodes, and antennas) and substrates, in the design of miniature and low-mass integrated circuits, and in the formulation of novel dynamic calibration and re-focusing algorithms.