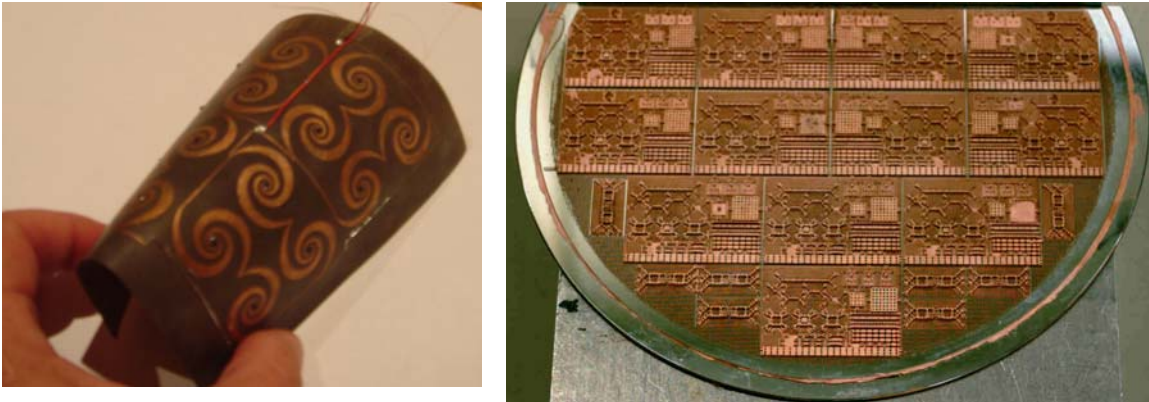


High-Performance Microwave and Millimeter-Wave Circuits

An overview of research at the University of Colorado, Boulder

Prof. Zoya Popovic

This talk will present an overview of the activities in the microwave group at the University of Colorado, Boulder, followed by a more detailed discussion of a few of the projects, specifically: (1) passive micro-coaxial circuits designed to operate in the millimeter-wave region through W-band; (2) low-phase noise VCOs for chip-scale atomic clocks; (3) passive millimeter-wave and THz imaging for concealed weapon detection; (4) wireless powering for low-power sensors; and (5) analog optical processing for real-time blind-signal separation of broadband RF signals.



A rectenna array on a flexible substrate, designed to power a wireless sensor in the 2.45GHz ISM band (left) and a 6-inch Si wafer with microfabricated air-filled micro-coaxial components (right)

Zoya Popovic is the Hudson Moore Jr. Professor of Electrical Engineering at the University of Colorado. She obtained her Dipl.Ing. degree at the University of Belgrade, Serbia, and her Ph.D. at Caltech in 1990. She has graduated 24 PhD students at the University of Colorado at Boulder and currently advises 16 students in areas of high-efficiency and low-noise microwave circuits, microfabricated millimeter-wave components and circuits, THz imaging, rf optical techniques, wireless powering of low-power sensors and active antenna arrays. She has received two IEEE MTT Microwave Prizes for best journal papers, and she is also proud of the White House NSF Presidential Faculty Fellow award, the URSI Issac Koga Gold Medal, the ASEE/HP Terman Medal and the German Alexander von Humboldt Research Award.