**Postdoctoral Position in Silicon Photonic Interconnects in Advanced CMOS**

A postdoc position is available, with immediate start date, on a $15M, DARPA-funded project to demonstrate energy efficient photonic interconnects in advanced CMOS, including native CPU to memory photonic links. The position is for 2 years with a possibility of extension. You will join the program's photonics team at the University of Colorado Boulder, to take a leadership role in the design of brutally efficient silicon photonic devices including modulators, switches, wavelength multiplexers, couplers, and detectors; to enable the integration of energy efficient WDM photonic links with advanced electronics on chip for future CPU and memory interfaces. If successful, this will be a major breakthrough with impact for microelectronics and the continued Moore's Law scaling of computational power. We are bringing about the first family of photonic devices that are integrable in true state-of-the-art CMOS and DRAM fabrication processes used in modern microelectronics. The position includes work with advanced CMOS fabrication processes, and tight collaboration within a multi-university/industry team (Colorado,MIT,Berkeley,Micron) that includes photonics researchers, electronics designers, semiconductor processing experts and fab personnel, and computer architects. Responsibilities include leadership on a design effort for photonic and optoelectronic devices, experimental device characterization, and tight collaboration with electronics designers and CMOS foundry experts.

The successful candidate will have a strong background in silicon micro/nanophotonics through theoretical design and modeling (FDTD, Matlab, …), and/or experimental work. Additional candidate strengths are a solid foundation in electromagnetism and semiconductor physics, including solid state devices (p-n junctions, MOSFETs, BJTs, etc.), familiarity with CMOS processes, and experience with numerical simulations including multiphysics (e.g. COMSOL) and semiconductor tools (e.g. Sentaurus TCAD).

University of Colorado Boulder is host to a very active research environment in optics and photonics, including over 40 research groups on campus, 4 national labs in the area that do photonics-related research, and 4 optics-related Nobel Prizes in the past decade. Postdocs are considered research faculty and receive generous benefits.

For more information or to express interest in a position, please see our webpage http://plab.colorado.edu and contact Prof. Milos Popovic by email: milos.popovic@colorado.edu (to have the application seen faster, please put [POEM] at the start of the subject line).

**Keywords:** silicon nanophotonics and photonics in state-of-the-art CMOS, microring resonators, modulators, detectors, photonic interconnects.

Colorado
University of Colorado at Boulder