



USC University of
Southern California

USC Viterbi

Ming Hsieh Department
of Electrical Engineering

Munushian Visiting Seminar Series

Ali Hajimiri

California Institute of Technology

Title: 1, 2, 3, infinity: The Power of Groups

Friday, September 28, 2018

2:00 - 3:30 pm, EEB 132

Refreshments will be served

Abstract: Many of today's technological marvels have emerged from putting apparently unrelated ideas together and creating something more than the sum of the parts. There is a tremendous still-to-be-realized potential in a large number of units operating as a collective, be it in a human society or on a silicon chip. Silicon integrated chips have come a long way from the days of first transistors. Nowadays, we can design using practically unlimited number of components, which leads to a plethora of new opportunities of applications and system, previously unimaginable. In this talk, we will discuss a holistic design approach to electronic and photonic integrated circuits leading to further proliferation of such technologies into our daily lives. We will discuss some of its exciting results, including low-cost tera-hertz imagers, optical gyroscopes, nano-photonic coherent cameras capable of forming 3D images, optical phased arrays, and space-based solar power transfer to name a few.



Professor Hajimiri's group does research on electronics and photonics integrated circuits and their applications in various disciplines, including high-frequency and high-speed communications, sensing, imaging, and bio-sensing. His research group engages in both the theoretical analysis of the problems in integrated circuits as well as practical implementations of new systems.

Prof. Ali Hajimiri received his B.S. degree in Electronics Engineering from the Sharif University of Technology, and M.S. and Ph.D. degrees in electrical engineering from the Stanford University.

Before joining the Faculty of Caltech, he worked at Philips Semiconductors, where he worked on a BiCMOS chipset for GSM and cellular units, at Sun Microsystems working on the UltraSPARC microprocessor's cache RAM design methodology, and with Lucent Technologies (Bell Labs), Murray Hill, NJ, where he investigated low-phase-noise integrated oscillators. In 1998, he joined the Faculty of the California Institute of Technology, Pasadena, where he is Bren Professor of Electrical Engineering and Medical Engineering, Director of Caltech Holistic Integrated Circuit Laboratory, and co-Director of the Space-based Solar Power Project. His research interests are high-speed and high-frequency electronics and photonics integrated circuits for applications in sensors, biomedical devices, photonics, and communication systems.