The Department of Electrical and Computer Engineering
co-hosted by the EDS UCR Chapter presents:

A DISTINGUISHED SEMINAR

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SELF HEATING IN SEMICONDUCTOR DEVICES

ABSTRACT

Self heating, which implies generation of heat when current that flows through a conductor, is well known since 18th century and we encounter it in almost every walk of our life. This physical phenomena directly influenced many of the technological innovations in semiconductor process technology development in the past 3+ decades and it continues to be a concern. These challenges are further compounded by the interaction of system design and application space/needs driving more innovations while uncovering more challenges. In this talk, after reviewing some basic concepts, various technological advances made in the past few decades in the broad area of semiconductor device process and design, and the current challenges are presented. Simple and logical analogies from common phenomena we daily encounter are used to simplify this already very simple problem which is being addressed by very complex (read costly) solutions.

BIOGRAPHY

Mahadeva Iyer Natarajan received his Ph.D for his work on ESD induced failure mechanisms in Semiconductor devices from University of Kerala, India. Prior to joining GLOBALFOUNDRIES, he worked at IME, Singapore; IMEC, Belgium and Silterra, Malaysia. Currently, he is the Director of 300mm Reliability engineering department, GLOBALFOUNDRIES INC at Malta, NY. He is a Senior Member of IEEE and member of ESDA, and published more than 80 papers and has been granted/pending more than 30 patents.

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