

Power Electronics for Next-Gen Computing: Topologies and Device Needs

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Power electronics can be found in everything from cellphones and laptops to gasoline/electric vehicles, industrial motors and inverters that connect solar panels to the electric grid. With close to 80% of electrical energy consumption in the US expected to flow through a power converter by 2030, innovative circuit topology and device solutions are required to tackle key issues related to conversion efficiency, power density and cost. This talk will look at the trends in power electronics for computing applications, describe the ongoing R&D efforts and highlight the challenges ahead.

Biography: Yogesh Ramadass received his B. Tech. degree from IIT-Kharagpur and the S. M. and Ph.D. degrees from MIT all in Electrical Engineering. He is currently the director of power management R&D at Kilby Labs, Texas Instruments, where he is involved in research and product development efforts looking into high power density and low-EMI automotive and industrial switching converters, small form-factor converters for consumer electronics, nano-power IoT designs and high voltage power systems.

Dr. Ramadass was awarded the President of India Gold Medal in 2004, the EETimes ‘Innovator of the Year’ award in 2013 and the ‘Young Alumni Achiever’ award by IIT-Kharagpur in 2018. He was a co-recipient of the best paper awards at CICC 2018, ISSCC 2009 and ISSCC 2007. He is a senior member of the IEEE and serves as the chair of the ‘Power Management’ sub-committee at ISSCC and as a ‘Distinguished Lecturer’ for the IEEE Solid-State Circuits Society. He served as an associate editor of the IEEE Journal of Solid-State Circuits from 2015-2018 and on the Technical Program Committee for the IEEE Symposium on VLSI Circuits from 2016-2018.