

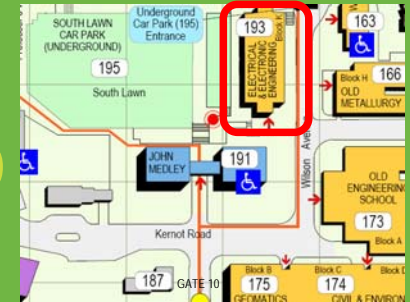
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# National ICT Australia invites you to the Victoria Research Laboratory Big Picture Seminar Series Wednesday, 10 February 2010

The talk will be followed by light refreshments and an opportunity to meet the speaker.

REGISTRATION IS ESSENTIAL FOR THIS FREE EVENT  
RSVP to [vr1ss@nicta.com.au](mailto:vr1ss@nicta.com.au) by COB, Monday 8 February, 2010

Public Parking is available at an hourly rate at the University Square car park. Enter via Bouverie Street. Local street parking is also available.



**When:** 5-6pm, Wednesday, 10 February 2010 **Where:** Brown Theatre, Electrical & Electronic Engineering (Building 193), University of Melbourne, Parkville

Dr Tilak Agerwala, Vice President, Systems, IBM Research (USA)

## Exascale Computing: Challenges and opportunities in the next decade.

**ABSTRACT:** Supercomputing systems have made great strides in recent years as the extensive computing needs of cutting-edge engineering work and scientific discovery have driven the development of more powerful systems. In 2008, the first petaflop machine was released, and historic trends indicate that in ten years, we should be at the exascale level. Indeed, various agencies are targeting a computer system capable of 1 Exaop ( $10^{18}$  ops) of computation within the next decade. We believe that applications in many industries will be materially transformed by exascale computers. Meeting the exascale challenge will require significant innovation in technology, architecture and programmability. Power is a fundamental problem at all levels; traditional memory cost and performance are not keeping pace with compute potential; the storage hierarchy will have to be re-architected; networks will be a much bigger part of the system cost; reliability at exascale levels will require a holistic approach to architecture design, and programmability and ease-of-use will be an essential component to extract the promised performance at the exascale level.

**BIOGRAPHY:** Dr. Tilak Agerwala is vice president, Systems, at IBM Research. He is responsible for developing the next-generation technologies for IBM's systems, from microprocessor architecture and design to commercial systems and supercomputers, as well as novel Supercomputing algorithms, systems software and applications. Tilak joined IBM in 1979 at the T.J. Watson Research Center and has held executive positions at IBM in research, advanced development, development, marketing and business development. His research interests are in the area of high performance computer architectures and systems. Tilak received the W. Wallace McDowell Award from the IEEE Computer Society in 1998 for "outstanding contributions to the development of high performance computers." He is a founding member of the IBM Academy of Technology, and a Fellow of the Institute of Electrical and Electronics Engineers. He has given over 100 invited technical presentations and Keynote talks at conferences, universities, and National Laboratories worldwide. He received his B. Tech. in electrical engineering from the Indian Institute of Technology, Kanpur, India, and his Ph.D. in electrical engineering from Johns Hopkins University, Baltimore, Maryland

