

Technical Vitality Seminar

PHASE CHANGE MEMORY AS A UNIVERSAL MEMORY

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Tuesday, April 21, 2009

2:00 pm - 3:00 pm EST

Abstract - The ultimate goal of emerging memory technology researchers and developers is to devise a universal memory to replace all memories in complex hierarchies of memory systems in modern computers. These memory hierarchies, employing different types of semiconductor memories at different levels of the hierarchies, are designed to bridge the performance gap between the central processing units and the memories while keeping the cost down. In this paper we shall examine the tasks to replace four types of memories, namely SRAM (Static), DRAM (Dynamic), NOR and NAND Flash in the memory hierarchy with Phase-change Random Access Memory (PRAM).

Chung received his B.Sc. in Electrical Engineering at Polytechnic University of New York in 1978. He joined IBM General Technology Division in Burlington in 1978 as a memory circuit designer. In 1984 he was awarded the IBM Resident Study Fellowship and received his M.Sc. and Ph.D., both in Electrical Engineering, at Rensselaer Polytechnic Institute in 1987 and 1988 respectively. Upon returning from Resident Study, Chung had taken responsibilities in various disciplines of semiconductor research and development including circuit and device designs as well as process integrations for memory and logic applications in IBM Microelectronic Division. In 2003, Chung transferred to IBM Research Division at T.J. Watson Research Center. In 2007, Chung was named IBM Distinguished Engineers. Currently, Chung manages Phase Change Memory Research Joint Project. He has more than 70 granted US patents and published more than 40 papers. He is a member of the Technical Committee of the IEEE Non-Volatile Memory Workshop since 2001.



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