

**Distinguished Speaker Series**  
Friday, September 18 at 11:30am, NTDP F223

## **Big Data Management in Advanced Semiconductor High Volume Manufacturing (HVM) Operations**

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### **Abstract**

The goal in semiconductor manufacturing is always the same: producing Faster, Better, Cheaper integrated circuit chips every time, all the time. Behind these three words is a labyrinth of very complex mix of systems in a typical HVM fab. These systems are product design, process technology, automation, information control, factory operations and people. All these systems have to be orchestrated to run efficiently to manufacture chips and ship them to customers with high yield, quality, in desired quantities and on time. Data is what connects all these systems – from design rules to sensors in equipment to customer returns. This talk gives an inside view of HVM operations and looks at how, what, why and when large amounts of data are generated. The challenge of data collection, analyses and visualization for an effective decision making to make the Fab run smoothly and meet its targets is also explained.

### **Bio**

Gopal Rao is currently the U.S. Chair for the Intelligent Manufacturing working group under the auspices of FUMEC (Fundación México Estados Unidos Para la Ciencia/The United States-Mexico Foundation for Science). This is a part of a joint effort between US and Mexican governments to realize the economic potential of the US-Mexico border region. He is also on the advisory board of the Industrial, Manufacturing and Systems Engineering at The University of Texas at El Paso. Gopal was previously SEMATECH's Senior Director of Business Development, responsible for strategic membership growth and integrated marketing & technology initiatives. Prior to joining SEMATECH, Gopal served as Director of High Volume Manufacturing Research at Intel, where he led a strategic portfolio of advanced manufacturing projects in partnership with universities. A 24-year veteran of Intel, Gopal progressed through a variety of assignments in senior engineering and management roles, and is the recipient of the Intel Achievement Award for reducing cycle times for fab qualifications and accelerating product time to market. Gopal holds Masters degrees in Physics and Solid State Materials. He has authored two technical books, along with many other publications to his credit.