Panel Discussion 2

AUTOMATION: INDUSTRY APPLICATIONS

Moderator:
Dr. Mike Tao Zhang, IEEE CASE 2007 Program Chair
Spansion Inc., USA

Panelist:
Eric Englhardt, Sr. Director, Systems Engineering & Automation Products, Applied Materials, Inc., USA
John R. Behnke, Vice President, Process Development and Transfer, Spansion, Inc.
Dr. Chen-Fu Chien, Deputy Director, Industrial Engineering Division, Taiwan Semiconductor Mfg. Company Ltd.
Dr. Stephan Biller, Lab Manager, Plant Floor Systems, Controls and Strategy, General Motors Corporation, USA
Nawal Parwal, Senior Solution Architect, Manufacturing Practice, Hewlett Packard, USA
Chandra Mouli, Director, Automated Manufacturing Technology, Intel Corporation, USA
Dave Gross, Director, Global Manufacturing Systems Technology, AMD, USA
Dr. Bin Sai, CTO, Enraf B.V., Netherlands

Monday, September 24, 2007  
5:30-7:00 p.m. (17:30-19:00), Room D

Objective:
To have people from different industries talk about their experiences with Automation and where they see the field going. Each panelist will present for 10 minutes and then field questions from the moderator and audiences. The definition of Automation is very broad: methods and technologies that improve efficiency, productivity, quality, and reliability will be discussed.

Panelist Biographies:

Eric Englhardt is the Senior Director of Systems Engineering and Automation Products for Applied Materials. He has been an engineer and executive in the semiconductor industry for over 20 years with experience in automated inspection, plasma etch, CVD processing, thermal processing and automation solutions. His team is responsible for developing the overall system level architecture across all of Applied’s wafer processing equipment. He is also responsible for developing advanced equipment-to-fab and fab-level automation solutions with particular emphasis on improving wafer processing cycle time and equipment productivity.

John Behnke, a 24-year veteran of the semiconductor industry, has leveraged partnerships throughout his career. He began his career in wafer fab and was later fab operations director of Spansion’s Fab 25 in Austin, Texas. He managed the fab’s transition from Logic to Flash in 2002, as well as the insertion of multiple new Flash technology nodes. In January 2005 he was asked to focus his partnering and team building skills internally, which led to dramatic improvements in support of Spansion’s aggressive technology/product roadmap.

Recently Mr. Behnke was given responsibility for Spansion’s World Wide Process Development and Transfer organization. Spansion’s SDC (Sub-Micron Development Center) is key to this role as it has recently been converted to full flow 300mm in support of Spansion’s new “copy exact” transfer model. The SDC has the only advanced technology production worthy full flow 300mm tool set in Silicon Valley. Mr. Behnke is leveraging this to establish many partnerships aimed at 32nm readiness.

Prior to AMD/Spansion, Mr. Behnke spent seven years at the Hughes Research Labs in Malibu, Calif., and two years at GE/RCA, West Palm Beach Gardens, Fla. He has a BSME from Marquette University.

Chen-Fu Chien was born in 1966 in Taiwan. He received B.S. with double majors in Industrial Engineering and Electrical Engineering (with Phi Tao Phi Honor) from the National Tsing Hua University (NTHU) in 1990. He received M.S. in Industrial Engineering and Ph.D. in Decision Sciences and Operations Research with two minors in Statistics and Business from UW-Madison in 1994 and 1996, respectively. Dr. Chien is a Professor of Industrial Engineering and Engineering Management and EMBA Professor in NTHU. Since 2005, he has been on-leave to serve as the Deputy Director of Industrial Engineering Division in Taiwan Semiconductor Manufacturing Company. He is a Fullbright Scholar in UC Berkeley (2002-2003), a Visiting Professor in Beijing Tsinghua University (2003, sponsored by Chinese Development Foundation), a Co-Principal Investigator and Visiting Professor in Cambridge University (2003-2005, sponsored by Royal Society and NSC), and a Visiting Scholar in Waseda University (2005, sponsored by Japan Interchange Association Young Scholar Fellowship). He is a Steering Committee of Industrial Engineering Division in National Science Council, Taiwan. He is a member of IEEE, IIE, and INFORMS. He is now a Board Member of the Chinese Institute of Decision Sciences and Chinese Institute of Industrial Engineers (CIIE) and Associate Editor of IEEE Transactions on Automation Science and Engineering. He has published more than 60 journal papers and two books and received four invention patents. He received the Distinguished University-Industry Collaborative Research Award from the Ministry of Education, Distinguished Young Industrial Engineer Award, Distinguished Young Faculty Research Award from NTHU, Best Paper Award from CIIE, Best Research Awards from the NSC, Best Engineering Paper Award by Chinese Institute of Engineers, and Tier 1 Principal Investigator (Top 3%) of National Science Council (2005-2008), Taiwan. His research and development efforts center on decision analysis, data mining, modeling and analysis for semiconductor manufacturing, and manufacturing strategy.

Stephan Biller is a manager for plant floor systems, controls and strategy at the General Motors R&D Center in Warren, Michigan. His research interests are the mathematical modeling of business applications including manufacturing flexibility, e-business, supply chain, and portfolio management. He currently focuses on the real-time optimized manufacturing enterprise and the digital factory. His technical accomplishments and leadership have earned him distinguished GM awards, including three "Boss" Kettering Awards, GM’s highest corporate innovation award. He holds a BS/MS. in electrical engineering from the Technical University of Aachen, Germany, a Ph.D. in Industrial Engineering and Management Science from Northwestern University and an MBA from the University of Michigan.

Mr. Nawal K Parwal is a Senior Solution Architect in the MES practice as part of HP manufacturing services. His responsibility includes providing technical solutions to all the high tech and electronics customers in the North America. He has led and architected numerous automation projects within HP and for outside customers. His current customer base includes Tyco Healthcare, Glaxo Smith Kline, Cypress Semiconductors, Qimonda semiconductors, ST Microelectronics, GM, On Semiconductors and British Petroleum.

Mr. Parwal has earned his masters degree in Automatic Control and Instrumentation at the Indian Institute of Technology, New Delhi in 1986 and has held various positions in the industry. He had contributed to various publications including a test book on digital control systems. Prior to joining HP, he worked as the Director of Automation at a leading magnetic media manufacturer. Mr. Parwal lives in Atlanta and he can be contacted via the email address nawal.parwal@hp.com.

Chandra Mouli is Director of Automated Manufacturing Technology (AMT) in Intel’s Logic Technology Development (LTD) group. He is responsible for definition and delivery of AMT that enables Intel’s 300mm research, process development and manufacturing pipeline. He has been with Intel for the past 20 years and has held a variety of senior technical and management positions in the areas of Fab Automation and supply-chain integration. During this time, he has led several strategic Automation technology initiatives with worldwide deployment responsibility. He was program manager for enabling Intel’s first 300mm fab automation systems. Chandra led the design and implementation of a next generation Manufacturing Execution System (MES) system and fully automated 300mm fab operations. Chandra is responsible for defining computing architecture directions and strategic roadmaps for AMT. He has numerous publications and 7 patents pending.
**Dave Gross** is the director of Manufacturing Technology Development at AMD. He is responsible for leading emerging manufacturing requirements development and implementation of next generation front-end and backend strategic solutions for AMD’s worldwide integrated manufacturing environments.

In a career spanning 27 years in semiconductor manufacturing, Gross has established a successful track record in leading efforts to deploy cutting edge manufacturing technologies with emphasis on automated systems and equipment controls. Prior to his current role, Gross held various engineering and management positions at AMD. Since joining the company in 1979, Gross has executed staffing and budgetary plans and participated in the startup of seven wafer fabs, focusing on deployment of current manufacturing systems strategy factory automation and equipment controls while also contributing to the creation of standards and guidelines for 300mm factory automation implementation.

Before joining AMD, Gross supported frontend and backend manufacturing operations for a research and development division of United Technologies, Essex Group Pittsburgh. He holds an associate’s degree in Electronics and Computer Technology from Pennsylvania Institute of Electronics, Pittsburgh.

**Bin Sai** received his B.Sc., M.Sc. and Ph.D. degrees on Electrical Engineering and Radar Technology from Shandong University, China Aerospace Science and Industry Corporation and Delft university of Technology, respectively. Dr. Sai has 19 years experience in system definition, design, development and integration, signal/image processing for various applications such as object classification and identification, high-resolution subsurface sensing and automatic high-precision level gauging. Since mid-2005, he has been the Chief Technology Officer for Enraf, The Netherlands. Dr. Sai is a senior member of IEEE.