

**Day 1 (Monday, August 15, 2005)****08:00-09:00 AM Registration**

Room: Barry Lam Hall, National Taiwan University

**09:00-9:40 AM Opening Speech**

General Conference Chair: Si-Chen Lee, National Taiwan University

Room: Barry Lam Hall 101

Maw-Kuen Wu, Minister, National Science Council

**9:40-10:40 AM Keynote Session I**

Chair: Yon-Hua Tzeng, Auburn University

Room: Barry Lam Hall 101

“Taiwan’s IT-Driven Growth: Success to Date and Future Prospect”

Jyuo-Min Shyu, Industrial Technology Research Institute

“Energy Nanomaterials at Argonne National Laboratory”

John Carlisle, Argonne National Laboratory

**10:40-10:50 AM 10-Min Break****10:50 AM-11:50 AM P1 – Plenary Session I: Nanotechnology/SoC**

Chair: Yu-Hen Hu, University of Wisconsin, Madison US

Room: Barry Lam Hall 101

“Development of Nano-Technology for Biomedical Applications”

Ching-Jen Chen, Florida State University

“System-on-Chip Design Foundry”

Youn-Long Lin, National Tsing Hua University

**11:50 AM-12:20 PM P2 – Plenary Session II: C4I**

Chair: Chung-Sheng Li, IBM T. J. Watson Research Center

Room: Barry Lam Hall 101

“Innovation in Software Development”

Joseph Cheng, IBM China Development Lab.

**12:20-02:00 PM Luncheon**

Room:

**02:00-03:45 PM Parallel Technical Sessions**

**T1 – Technical Session 1: Nanotechnology/MEMS (I)**

Chair: Darrin J. Young, Case Western Reserve University

Room: Barry Lam Hall 114

“Advances in Carbon Nanotubes Electronics”

Yu-Ming Lin, IBM T. J. Watson Research Center

“Quantum Dot Devices for Optoelectronics Applications”

Yan-Kuin Su, National Cheng Kung University

“Biomechanics at the Micro Scale”

William C. Tang, University of California, Irvine

**T2 – Technical Session 2: System-on-Chip (I)**

Chair: An-Yeu Wu, National Taiwan University

Room: Barry Lam Hall 113

“Trend and Challenge on System-on-Chip Technology for Multimedia System Design,”

Yen-Kuang Chen, Intel, and Sun-Yuan Kung, Princeton

“An FPGA Architectural Design of Parameter-Adaptive Real-Time Image Processing System for Edge Detection,”

Pei-Yung Hsiao, Chang Gang Univ.

“SoC Infrastructure IPs”

I. J. Huang, National Sun Yet-Sen University

“Multi-Gigabit Serial Link Transceiver: Off-Chip and On-Chip”

Shyh-Jye Jou, National Chiao Tung University

**T3 – Technical Session 3: Bioinformatics (I)**

Chair: Sue-Jane Wang, U.S. Food and Drug Administration

Room: Department of CSIE. R. 101

"Quality Assessment of Gene Expression Data"

Chen-An Tsai, University of Alabama

“Pharmacogenomics and Variation in Drug Therapy”

Steven Wong, Medical College of Wisconsin, Milwaukee

“Liquid Bead Arrays Meet Multiplexing Needs of Clinical and Research Laboratories”

Grant Gibson, Luminexcorp

**T4 – Technical Session 4 : C4I (I)**

Chair: Hui-I Hsiao, IBM Almaden Research Center

Room: Barry Lam Hall 112

“Perfect Relevance: The Next Frontier”

Hong-Jiang Zhang and Wei-Ying Ma, Microsoft Research Asia Advanced Technology

“A Unified Learning Paradigm for Large-scale Personalized Information Management”

Edward Chang, University of California, Santa Barbara

Panel: Disruptive Trends in Software Industry

Moderator: Chung-Sheng Li, IBM T. J. Watson Research Center

Panelists: Josephing Cheng, IBM China Development Lab.

Hong-Jiang Zhang, Microsoft Research Asia Advanced Technology

Edward Chang, University of California, Santa Barbara

**03:45-04:15 PM 30-Min Break****04:15-06:00 PM Parallel Technical Sessions****T5 – Technical Session 5: Nanotechnology/MEMS (II)**

Chair: Ching Fuh Lin, National Taiwan University

Room: Barry Lam Hall 114

“Nano-technology in Silicon Foundries”

Denny D. Tang, TSMC

“High-performance Fully Integrated 4 GHz CMOS LC VCO in Standard 0.18- $\mu$ m CMOS Technology”

Shey-Shi Lu, National Taiwan University

“Microchip Electrophoresis and Related Technologies”

Shu-Hui Chen, National Cheng Kung University

“Electrostatic Manipulation of Nanoparticles and Nanowires for Chemical and Biological Sensing”

S. Gwo, National Tsing Hua University,

**T6 – Technical Session 6: System-on-Chip (II)**

Room: Barry Lam Hall 113

Panel: Next Stage of NSOC Program

Moderator: Wei Hwang, National Chiao Tung University

Panelists: Sun-Yuan Kung, Princeton University

Yu-Hen Hu, University of Wisconsin, Madison

Edwin Sha, University of Texas, Dallas

Chau-Chin Su, Shyh-Jye Chou, National Chiao Tung University

Tzi-Dar Chiueh, National Taiwan University

Jhing-Fa Wang, National Cheng Kung University

**T7 – Technical Session 7: Bioinformatics (II)**

Chair: Cheng-Yen Kao, National Taiwan University

Room: Department of CSIE. R. 101

“Consensus Scoring Criteria in Structure-based Virtual Screening”

Jinn-Moon Yang, National Chiao Tung University

“A Biological Data Warehousing System for Identifying Transcriptional Regulatory Sites from Gene Expressions of Microarray Data”

Jorng-Tzong Horng, National Central University

“Constructing a SMBL-Based S-System Simulation Platform”

Cheng-Yan Kao, National Taiwan University

“InfoTech Algorithms for Optimizing BioTech Practice on High-Throughput Differential Detection Among Symptom/Syndrome-Related Pathogens”

Chun-Fan Chang, Chinese Culture University

**T8 – Technical Session 8: C4I (II)**

Chair: Ming-Syan Chen, National Taiwan University

Room: Barry Lam Hall 112

“An Overview of Technology Trends and Innovation Potential in Recording, Storing, Dissemination, Presentation, Application and Creation of Knowledge”

Wei-Hsing Wang, NicheUSA, LLC

“Advanced Technology for Managing XML Document Collection”

Hui-I Hsiao, IBM Almaden Research Center

“Real-time Event Driven Architecture for Activity Monitoring and Early Warning”

Chung-Sheng Li, IBM T. J. Watson Research Center

**Panel: Developing Insight from Data Overload**

Moderator: Ming-Syan Chen, National Taiwan University

Panelists: Wei-Hsing Wang, NicheUSA, LLC

Hui-I Hsiao, IBM Almaden Research Center

Chung-Sheng Li, IBM T. J. Watson Research Center

**Day 2 (Tuesday, August 16, 2005)**

**08:00-09:00 AM Registration**

**09:00-10:40 AM K2 - Keynote Session II**

General Conference Chair: Sun-Yuan Kung

Co-Chair: Sue-Jane Wang, U.S. Food and Drug Administration

Room: Barry Lam Hall 101

Keynote Speeches:

“Manufacturing of Low-Cost Enzymatic Biosensors Using Thick Film Processing”  
Chung-Chiun Liu, Case Western Reserve University

“Parallel Embedded Systems: Optimizations and Challenges”  
Edwin Sha, University of Texas, Dallas

“Computation Biology: Biology for the Future”  
Michael Gribskov, Purdue University

**10:40-10:50 AM 10-Min Break**

**10:50-11:50 AM P3 - Plenary Session III: Bioinformatics/SoC**

Chair: Ming Ouhyoung, National Taiwan University

Room: Barry Lam Hall 101

“Utility of High Dimensional Genomic Composite Biomarkers in Therapeutic and/or Diagnostic Development”  
Sue-Jane Wang, U.S. Food and Drug Administration

“SoC IP Design for Multimedia and Communications”  
Myung Hoon Sunwoo, Ajou University, Korea

**11:50 AM-12:20 PM P4 – Plenary Session IV: MEMS**

Chair: Fan-Gang Tsen, National Tsing Hua University

Room: Barry Lam Hall 101

“Wireless Strain Sensing Microsystem”  
Darrin J. Young, Case Western Reserve University

**12:20-2:00 PM Luncheon**

Room:

**02:00-03:45 PM Parallel Technical Sessions**

**T9 – Technical Session 9: Nanotechnology/MEMS (III)**

Chair: Yu-Cheng Lin, National Cheng Kung University

Room: Barry Lam Hall 114

“Nano-Materials for Optoelectronic Devices”

Wei-Fang Su, National Taiwan University,

“Photonic Performance of Si Nanocluster Grown by Laser Assistance”

C. T. Lee, National Cheng Kung University

“Surface Tension Dominated Powerless Nano/Micro Fluidic Systems”

Fan-Gang Tseng, National Tsing Hua University

**T10 – Technical Session 10: System-on-Chip (III)**

Chair: Howard H. Chen, IBM Research Division

Room: Barry Lam Hall 113

“On Three-Stage Interconnection Networks for Group Communications”

Yu-Liang Wu, Chinese University of Hong Kong

“High-Precision Frequency Synthesizers for UWB Applications”

T. C. Lee, National Taiwan University

“A Spread-Spectrum Clock Generator Using a Capacitor Multiplication Technique”

S. I. Liu, National Taiwan University

“General Purpose RFICs Using 0.35 um SiGe BiCMOS Technology “

C. C. Meng, National Chiao Tung University

**T11 – Technical Session 11: Bioinformatics (III)**

Chair: Sue-Jane Wang, U.S. Food and Drug Administration

Room: Department of CSIE. R. 101

“Gene Annotation and Network in Cancer Research”

Hsueh-Fen Juan, National Taiwan University

“Identification of RNA-Binding Protein Residues Using Machine Learning Approaches”

Hsuen-Cheng Huang, National Yang Ming University

“Detecting Homogeneity in Protein Sequence Clusters for Automatic Functional Annotation and Noise Detection”

Chien-Yu Chen, National Taiwan University

“Study on Fast Rough Alignment for Two-Stage Protein Structure Comparison Algorithm”

Chien-Kang Huang, National Taiwan University

**T12 - Technical Session 12: C4I (III)**

Chair: Simon Sheu, National Tsing Hua University

Room: Barry Lam Hall 112

“On the Potential of Sensor-Enhanced Active RFIDs”

Ju-Peng Chen, Tsung-Han Lin, and Polly Huang, National Taiwan University

“IP Datacasting and Channel Error Handling with DVB-H”

Jason Yao, Weifeng Huang, and Ming-Syan Chen, National Taiwan University

“Web Information Hierarchy and Importance Mining based on DOM Information Distillation”

Tseng-Yi Feng, Hung-Yu Kao, National Cheng Kung University

“KACU: K-means with Hardware Centroid-Updating”

Wei-Chuan Liu, Jiun-Long Huang\*, and Ming-Syan Chen,  
National Taiwan University and \*National Chiao Tung University

“Bandwidth-Efficient Multicast in Heterogeneous Wireless Networks”

De-Nian Yang, National Taiwan University

**03:45-04:15 PM 30-Min Break****04:15-06:00 PM Parallel Technical Sessions****T13 – Technical Session 13: Nanotechnology/MEMS (IV)**

Chair: William C. Tang, University of California, Irvine

Room: Barry Lam Hall 114

“Enhanced luminescence by second-harmonic surface plasmon resonance”

Yang-Fang Chen, National Taiwan University

“Electroporation Microchips for Gene Transfection”

Yu-Cheng Lin, National Cheng Kung University

“Force Measurement of Specific Antibody-Antigen Interactions in pH-varied Liquid Environment”

Long-Sun Huang, National Taiwan University

**T14 – Technical Session 14: System-on-Chip (IV)**

Chair: Yu-Liang Wu, Chinese University of Hong Kong

Room: Barry Lam Hall 113

“Hierarchical Built-in Self-test for System-on-Chip Design”

Howard H. Chen, IBM Research Division

“Accurate RTL Power Estimation for a Security Processor”

Shi-Yu Huang, National Tsing Hua University

“Placement for Modern FPGAs”

Wai-Kei Mak of National Tsing Hua University

“Energy-Efficient Cache Architecture for Multimedia Applications”

Chia-Lin Yang, National Taiwan University

“Code Design and Decoder Implementation of Low Density Parity Check Code”

M. K. Ku, National Taiwan University

### **T15 – Technical Session 15: Bioinformatics (IV)**

Chair: Ming Ouhyoung, Kun-Mao Chao, National Taiwan University

Room: Department of CSIE. R. 101

“A Bayesian Approach to Virus-Gene Expression Time Course Data”

I-Shou Chang, National Health Research Institutes

“Bioinformatics Analysis for Genome Design & Synthetic Biology”

Chuan-Hsiung Chang, National Yang Ming University

“Approximation Algorithms for the Optimization Problems of SNPs and Haplotypes”

Kun-Mao Chao, National Taiwan University

“A Web-based Protein Retrieval System by Matching Visual Similarity”

Ming Ouhyoung, National Taiwan University

### **T16 – Technical Session 16: C4I (IV)**

Chair: Polly Huang, National Taiwan University

Room: Barry Lam Hall 112

“Concurrent Multiple-Patterns Snooping for Intrusion Detection Systems”

Simon Sheu, Alan Chang, Chang-Zhuo Chen, National Tsing Hua University

“Research Challenges and Perspectives of Voice over Wireless LAN”

Shiao-Li Tsao, National Chiao Tung University

“An Effective Broadcast Program Generation Algorithm for Dependent Data”

Jiun-Long Huang, and Wen-Chih Peng, National Chiao Tung University

“Information Fusion for Self-Organizing Sensor Networks”

Wei-Guang Teng, National Cheng Kung University