Curriculum Vitae

**PERSONAL**

**Name** Ni, Jun

**Degrees**

Ph.D., University of Wisconsin-Madison, 1987

M.S., University of Wisconsin-Madison, 1984

B.S., Shanghai Jiaotong University, China, 1982

**Positions at the University of Michigan, Ann Arbor**

Academic Positions:

Shien-Ming (Sam) Wu Collegiate Professor of Manufacturing Science, 2006 - present

Professor of Mechanical Engineering, 1997 - present

Associate Professor of Mechanical Engineering, 1993 - 1997

Assistant Research Scientist, 1989 - 1992

Research Fellow, 1987 - 1989

Administrative Positions:

Dean, UM-SJTU Joint Institute, 2006 - 2014

Director, S. M. Wu Manufacturing Research Center (1992 - present)

Co-Director, Multi-Campus National Science Foundation Center for Intelligent Maintenance Systems (2001-present)

Deputy Director, US-China Clean Energy Research Consortium-Clean Vehicles Center (2010 – present)

Deputy Director, NSF-Engineering Research Center for Reconfigurable Manufacturing Systems (2003- 2006, 2013- present)

Director of Laboratory and Space, Mechanical Engineering, (2003- 2006)

Graduate Program Chair, Mechanical Engineering (2002/2003)

Chair, International Program Committee, College of Engineering, (2002-2003)

Director, National Science Foundation funded Center for Dimensional Measurement and Control in Manufacturing (1993 - 1998)

Associate Director, NSF-Engineering Research Center for Reconfigurable Machining Systems, (1996 - 2002)

**Positions at Other Institutions or Organizations**

University Distinguished Professor, Shanghai Jiao Tong University, 2011-2013

“1000” Scholar, Ministry of Organization Development, China, 2009-2012

Special Counsel to President, Shanghai Jiao Tong University, 2009-2013

Distinguished Endowed Visiting Professorship, Ministry of Education, China, 2003- 2005

Endowed Professorship, Ministry of Education, China, 1999 – 2002,

Distinguished Visiting Chair Professor, Hong Kong Polytechnic University, 2001-2002, 2003-2004

DaimlerChrysler Summer Professorship, 2002, 2003, 2005

Research Assistant, University of Wisconsin-Madison, 1983-1987

Assistant Lecturer, Shanghai Jiaotong University, China, 1982-1983

**Honors and Awards**

* Stephen S. Attwood Excellence in Engineering Award, 2015, the highest honor awarded by the College of Engineering, the University of Michigan
* Best Paper Award, 2014, American Society of Mechanical Engineers Manufacturing Science and Engineering Conference (MSEC).
* Best Paper Award, 2014, International Conference on Frontiers of Design and Manufacturing.
* 2014 IIE Andrew Heiskell Award for Innovation in International Education, Institute of International Education.
* 2014 Alexander Schwarzkopf Award for Technology Innovation, by NSF IUCRC Association
* 2013 International Science and Technology Cooperation Award, by the President of the People’s Republic of China
* 2013 SME Gold Medal Award, by Society of Manufacturing Engineers
* 2013 S. M. Wu Research Implementation Award, by Society of Manufacturing Engineers and North American Manufacturing Research Institute
* 2013 International Science and Technology Cooperation Award, by Shanghai Municipal Government
* Fellow, elected in 2012 by International Society of Engineering Asset Management (ISEAM)
* Fellow, elected in 2011 by International Society for Nanomanufacturing (ISNM)
* University Distinguished Professor, Shanghai Jiao Tong University, 2011-2013
* Distinguished Service Award, 2010, Chinese Institute of Engineers-USA
* Magnolia Gold Medal, 2010, awarded by Shanghai Municipal Government for Outstanding Contribution by Oversea Scientist
* Outstanding Achievement Award, 2010, Oversea Chinese Office, State Council, People’s Republic of China
* Best Paper Award, 2010, International Conference on Frontiers of Design and Manufacturing
* First Prize of National Higher Education Award, 2009, Ministry of Education, People’s Republic of China.
* Best Paper Award, 2009, American Society of Mechanical Engineering Manufacturing Science and Engineering Conference (MSEC).
* William T. Ennor Manufacturing Technology Award, American Society of Mechanical Engineering and Society of Manufacturing Engineering, 2009
* “1000 Talent” Award, Chinese Government, 2008
* Best Paper Award, 2007 SRC TECHCON
* 2006-2007 Education Excellence Award, College of Engineering, The University of Michigan
* Shien-Ming (Sam) Wu Collegiate Professor of Manufacturing Science, University of Michigan, 2006 – present
* Best Paper Award, 2005 SRC TECHCON
* Best Paper Award, 2004, International Conference on Frontiers of Design and Manufacturing
* Fellow, Elected in 2004 by the American Society of Mechanical Engineering
* Magnolia Silver Medal, awarded by Shanghai Municipal Government for Outstanding Contribution by Oversea Scientist, 2003
* Elected Member of Advisory Board, Ministry of Science & Technology, China, 2003 – present
* Member of External Review Board, Chinese Academy of Sciences, 2002 - present
* Best Paper Award, 2002, International Conference on Frontiers of Design and Manufacturing
* Fellow, Elected in 2002 by the Society of Manufacturing Engineers
* 2001-02 Research Excellence Award, College of Engineering, The University of Michigan
* Best Paper Award, 2001 North American Manufacturing Research Conference, NAMRI/SME
* Best Paper Award Finalist, 2000 North American Manufacturing Research Conference, NAMRI/SME
* Distinguished Visiting Chair Professor, Hong Kong Polytechnic University, 2001-2002
* 2000-01 Robert M. Caddell Memorial Award for Outstanding Faculty Achievement, Department of Mechanical Engineering, The University of Michigan
* Advisory Professor, Xi’an Jiao Tong University, 2000 – 2003
* Advisory Professor, Dalian University of Technology, 1999 - 2002
* Changjiang Endowed Chair Professorship, Ministry of Education, China, 1999-2002
* 1999 Outstanding Oversea Scientist Award with a discretionary grant of RMB ¥400,000, National Natural Science Foundation, China
* Advisory Member, Shanghai Pudong Science and Technology Commission, 1998 - 2003
* Member, Advisory Board, Mechanical Industrial Research Lab (MIRL), Industrial Technology Research Institute (ITRI), Taiwan, 1995 – 1998, 2004 - 2011
* Advisory Professor, Tsinghua University, 1998 – 2001, 2003 - 2006
* Advisory Professor, Shanghai Jiao Tong University, China, 1996 – present
* Advisory Professor, Jilin University of Technology, China, 1995- 1998
* Advisory Professor, Huazhong University of Science and Technology, China, 1994 – 1997
* Guest Research Scientist, Chinese Academy of Machinery Science and Technology, Ministry of Machinery Industry, 1995 – 1999, 2003 - present
* 1995 Excellence in Research Award, Department of Mechanical Engineering and Applied Mechanics, University of Michigan
* 1994 Presidential Faculty Fellow Awards with $500,000 grant, named by President W. J. Clinton, funded through the National Science Foundation
* 1991 Outstanding Young Manufacturing Engineer Award, Society of Manufacturing Engineers

**TEACHING**

**New Courses Introduced at U of M**

Developed a new course MFG502/ME499 on “Manufacturing Systems Design”, which was initially offered in Fall 2000.

Substantially revised ME 563/IOE 565. Added many case studies of time series analysis applications and introduced student term projects that have received very favorable evaluations from students.

Developed a new course on “Dimensional Metrology in Manufacturing” (ME599), which was initially offered in Winter 1997.

**Ph. D. Committees Chaired**

**Thesis Completed**

1. Sung Ho Chang, PhD, 1991, "Statistical Evaluation and Analysis of Form and Profile Errors Based on Discrete Measurement Data", Co-chair with G. Herrin (IOE)   
   Current Position: Research Professor, Seoul National University, Korea
2. Yudong Chen, PhD, 1991, "Free Form Curve and Surface Measurement Modeling and Machining", Co-chair with S. M. Wu  
   Current Position: President, Bosch (China).
3. Engelbert Lu, PhD, 1991, "Improvement of CMM Throughput Using Path Planning, Dynamic Lobing Error Compensation, and Structural Vibration Control", Co-chair with S. M. Wu  
   Current Position: Global Engineering Director, TRW
4. Tay-Chang Wu, PhD, 1992, "Error Compensation for the Coordinate Measuring Machine based on Flexibody Volumetric Error Model", Co-chair with S. M. Wu  
   Current Position: Senior Research Staff, LK Tools, England
5. Peisen Huang, PhD, 1993, "Laser Optical Measurement Systems and Their Application to the On-line Error Compensation of Coordinate Measuring Machines," Chair[[1]](#footnote-1)\*   
   Current Position: Professor, SUNY-Stony Brook and Dean, UM-SJTU Joint Institute
6. Jane-lin Wang, PhD, 1994, "Computer-aided drill analysis and manufacturing," Chair[[2]](#footnote-2)\*  
   Current Position: Senior Engineer, Chrysler
7. Chih-hao Lo, PhD, 1994, "A systematic approach of combining analytical and empirical methods for machine tool thermal error compensation," Chair[[3]](#footnote-3)\*  
   Current Position: CEO, Nippecraft, Singapore
8. Ke-Ming Yeh, PhD, 1994, "Conformable Evaluation of Geometric Dimensioning and Tolerancing Using Discrete Measurement Data," Chair[[4]](#footnote-4)\*  
   Current Position: Manager, Chrysler
9. Neiyuan Hai, PhD, 1995, "Machine Tool Accuracy Enhancement by Inverse Kinematic Analysis and Real Time Error Compensation" Chair[[5]](#footnote-5)\*  
   Current Position: Senior Manufacturing Engineer, General Motors Corporation
10. Chenggang Che, PhD, 1995, "Multi-Axis, Structured Light, Laser Scanning System: Modeling, Calibration, and Uncertainty Assessment," Chair  
    Current Position: Professor, Geneva College, Pennsylvania
11. Christopher Kok-Hwee Koh, PhD, 1995, "Tonnage Signature Analysis for Stamping Process Monitoring and Control," Co-chair with J. J. Shi  
    Current Position: Senior Lecturer, Nanyang Technological University, Singapore
12. Seung-Han Yang, PhD, 1996, "Real-time compensation of time-variant volumetric error on a 5-axis machining center," Chair,   
    Current Position: Professor, Kyungpook National University, Korea
13. Haiyan Zhang, PhD, 1996, "Machine tool chatter modeling, analysis and control for CNC machining systems," Chair  
    Current Position: Associate Professor, Purdue University
14. David Khorzad, PhD, 1996, "Model-based Optimization for Auto Body Dimensional Control in Design and Assembly ", Co-chair with J. J. Shi (IOE)  
    Current Position: Program Manager, Abbott Laboratories
15. Shuxin Gu, PhD, 1996, "Stationary and Nonstationary Process Condition Monitoring and Diagnosis and Its Application to Drilling Processes," Chair  
    Current Position: Senior Engineer, Chrysler
16. Dan Apley, PhD, 1997, “Supervisory Adaptive Control: Monitoring, Diagnostics and Model Uncertainty,” Co-chair with J. J. Shi (IOE)  
    Current Position: Associate Professor, Northwestern University
17. Jian He (Applied Physics Program), PhD, 1997, "Development of a Six Degree-of-Freedom Laser Measurement System for Machine Geometric Error Measurement," Chair  
    Current Position: Independent Consultant
18. Wei Li, PhD, 1998, “Monitoring and Diagnosis for Resistance Spot Welding Processes,” Co-chair with J. Hu (MEAM)  
    Current Position: Professor, University of Texas, Austin
19. Jian Guo Yang, PhD, 1998, “Error Synthetic Compensation Technique and Application for NC Machine Tools,” Co-chair with B. Y. Xue (Shanghai Jiaotong University)  
    Current Position: Professor, Shanghai Jiao Tong University, China
20. Stephen Dyer, PhD, 1999, “Adaptive Optimal Control of Active Balancing Systems for High-Speed Rotating Machinery,” Co-chair with J. Shi (IOE)   
    Current Position: Partner, Bain & Company
21. Ye Chen, PhD, 1999, “Drilling Process Modeling for New Drill Process Development,” Chair  
    Current Position: Vice President, Key Safety Systems
22. Roy Schimmel, PhD, 1999, “A Coupled Force Displacement Model for Reaming, ”Co-chair with W. Endres (MEAM)  
    Current Position: Staff Engineer, General Motors Corporation
23. Yi Sun, PhD, 1999, “Modeling and analysis of drill geometry and automatic drill grinding path generation,” Chair  
    Current Position: Senior Manager, Fanuc Robotics
24. Emad Al-Regib, PhD, 2000, “Machining Systems Stability Analysis for Chatter Suppression and Prediction,” Co-chair with J. Yuan (MEAM)  
    Current Position: Senior Engineer, Ford Motor Company
25. Chunhe Gong, PhD, 2000, “Robotic Measurement System: Self Calibration, Real-Time Error Compensation, and Path Planning,” Co-Chair (w/ J. Yuan)  
    Current Position: Vice President, CITIC Private Equity Funds Management, China
26. Guiquan Chen, PhD, 2000, “Thermal Volumetric Error Mapping by Inverse Kinematics for 3//5 Axis Machine Tools,” Co-chair with J. Yuan (MEAM)  
    Current Position: Senior Engineer, Ford Motor Company
27. Kudijiang Mijit, PhD, 2000, “Design, Analysis and Experimentation of a Micro Internal Combustion Swing Engine,” Chair  
    Current Position: Staff Researcher, Siemens
28. Bai Zhang, PhD, 2000, “Design Methodologies for the Dimensional Integrity of the Automobile Body,” Chair  
    Current Position: Senior Engineer, Ford Motor Company
29. Kwang-Keun Shin, PhD, 2000, “Adaptive Balancing Control of High-Speed Rotor During Acceleration,” Chair   
    Current Position: Staff Researcher, GM R&D Center
30. Youji Ma, PhD, 2000, “Thermal Sensor Location Optimization for Error Compensation,” Co-Chair (w/ J. Yuan)  
    Current Position: Senior Engineer, Delphi Automotive Systems
31. Matthew Bono, PhD, 2001, “Experimental and Analytical Issues in Drilling,” Chair  
    Current Position: Staff Researcher, Lawrence Livermore National Laboratory
32. Li-Wei Pan, PhD, 2001, “Design, Fabrication and Testing of a Micro Hot Embossed Plastic Pump,” Co-Chair (w/ Li-wei Lin)  
    Current Position: Program Manager, PerkinElmer
33. Jinhyuk Jung, PhD, 2001, “Optimal Drill Point Design and Grinding for High Throughput and Deep Hole Making,” Chair  
    Current Position: Senior Manager, Samsung, Korea
34. Hong Yang, PhD, 2002, “Dynamic Modeling of Machine Tool Thermal Errors – A Systems Approach,” Chair  
    Current Position: Director, Battery Management System Software and Control, Chrysler
35. Dragan Djurdjanovic, PhD, 2002, “Stream of Variation (SOV) Modeling of Machining Errors and Its Applications,” Chair  
    Current Position: Associate Professor, University of Texas - Austin
36. Lin Zhang, PhD, 2002, "Development of Drill Force and Temperature Models by a Coupled Mechanics and Thermal Analysis," Chair   
    Current Position: Vice President, Geely Motors Corporation, China
37. Feng Ke, PhD, 2003, “Modeling of Chip Formation and Evacuation in Small Deep Hole Drilling,” Chair  
    Current Position: Director, Vehicle Integration, Fiat Chrysler, China
38. Yizhu Zhang, PhD, 2003, “Autobody Structure Concept Design and Decision Making Based on Graph Theory and Homogeneous Transformation,” Co-chair with Z. Q. Lin (Shanghai Jiaotong University)  
    Current Position: Lecturer, Shanghai Jiao Tong University
39. Chang-ju Kim, PhD, 2004, “Cutting Mechanics and Surface Generation of Micro End-Milling Process,” Chair  
    Current Position: Senior Research Staff, Korean Institute of Materials and Machinery
40. Sangwon Lee, PhD, 2004, “Design and Characterization of Meso-Scale Machine Tool Systems,” Chair  
    Current Position: Associate Professor, SungKyunKwan University, Korea
41. Max (Zimin) Yang, PhD, 2005, ”Dynamic Maintenance Scheduling Using Online Information About System Condition,” Chair  
    Current Position: Senior Engineer, Microsoft
42. Henry Chen, Dr.-Eng., 2005, “Generation and Evaluation of Meso-scale Machine Tool Designs for Micro-Machining Applications,” Chair  
    Current Position: Senior Engineer, Boeing Aircraft Company
43. Hong Seok Kim, PhD, 2005, “Investigations for Warm Forming of Lightweight Sheet Materials: Process Optimization,” Co-Chair with M. Koc  
    Current Position: Assistant Professor, Seoul National University of Technology, Korean
44. Gap-yong Kim, PhD, 2005, “Microreactor Design and Fabrication of Micro/Meso-Features for Onboard Fuel Processing System,” Chair  
    Current Position: Associate Professor, Iowa State University
45. Qing (Cindy) Chang, Dr.-Eng., 2005, “Supervisory Production Process Control Using Real-Time Data,” Chair  
    Current Position: Assistant Professor, Stony Brook University
46. Amir Kamouneh, Dr.-Eng., 2006, “Feasibility of Cold Roll-Forming of External Involute-Helical Gears for Automatic Transmission,” Chair   
    Current Position: Senior Engineer, General Motors
47. Ho Choi, Ph.D., 2006, “Warm Hydroforming of Lightweight Materials: Formability and Quality Issues,” Co-Chair (w/ M. Koc)  
    Current Position: Senior Research Engineer, Hyundai Motors
48. Honghai Zhu, Ph.D., 2006, “Design, Modeling and Control of Micro Internal Combustion Swing Engine (MICSE)-based Hybrid Power System,” Chair  
    Current Position: Analyst, JPMorgan
49. Zhenghua Huang, Ph.D., 2006, “3D Laser Holographic Interferometry Measurements,” Co-chair (with Albert Shih)  
    Current Position: Chief Technologies and Vice President, Coherix, Inc.
50. Jianbo Liu, PhD., 2007, “Autonomous Anomaly Detection and Fault Diagnosis,” Co-Chair (w/D. Djurdjanovic)  
    Current Position: Senior Research Engineer, General Motors R&D Center
51. Min Zhang, Ph.D., 2007, “Measurement Scheme and Classification Methods for the Development of a ‘Product DNA’ Concept in Manufacturing,” Co-Chair (w/D. Djurdjanovic)  
    Current Position: Senior Vice President, Sr. Quantitative Finance Analyst, Bank of America
52. Rui He, Ph.D., 2007, “Modeling, Analysis and Experimental Investigation on Root Canal Instrumentation Process,” Chair  
    Current Position: Senior Research Engineer, Guidant
53. Yong Lei, Ph.D., 2007, “Intelligent Maintenance in Networked Industrial Automation Systems,” Chair  
    Current Position: Associate Professor, Zhejiang University
54. Jing Zhou, Ph.D., 2007, “Joint Decision Making on Reconfiguration and Preventive Maintenance in Reconfigurable Manufacturing Systems,” Co-chair (with Julie Ivy)
55. Lin Li, Ph.D., 2007, “Short-Term Supervisory Control of Manufacturing Systems,” Chair  
    Current Position: Assistant Professor, University of Illinois at Chicago
56. Melody L. Baglione, Ph.D, 2007, “Development of System Analysis Methodologies and Tools for Modeling and Optimizing Vehicle System Efficiency, Co-chair (with D. Assanis)  
    Current Position: Associate Professor, Cooper Union College
57. Linfa Peng, PhD, 2007, “Modeling, Analysis and Experimental Study of Micro/Meso Scale Sheet Forming,” Co-chair (w/X. Lai of Shanghai Jiao Tong University)  
    Current Position: Associate Professor, Shanghai Jiao Tong University, China
58. Chengfeng Li, PhD, 2008, “Study on Force and Surface Topography Modeling and Process Optimization of Meso-scale End Milling,” Co-chair (w/X. Lai of Shanghai Jiao Tong University)  
    Current Position: Assistant to CTO, Sanyi Heavy Machineary Co.
59. Sasawat Mahabunphachai, PhD, 2008, “A Hybrid Hydroforming and Mechanical Bonding Process for Fuel Cells Bipolar Plates,” Chair  
    Current Position: Senior Researcher, MTEC – National Metal and Materials Technology Center, Thailand
60. Peng Chen, PhD, 2008, “Manufacturing of Porous Surfaces with Micro-Scale Features for Advanced Heat Transfer,” Chair  
    Current Position: Senior Engineer, American Axle and Manufacturing, Inc.
61. Yang Liu, PhD, 2008, “Predictive Modeling for Intelligent Maintenance in Complex Semiconductor Manufacturing Processes,” Chair  
    Current Position: Senior Vice President, Quantitative Operations Manager, Bank of America
62. Jie Zhu, PhD, 2008, “Robust Thermal Error Modeling and Compensation of CNC Machine Tools,” Co-Chair (with A. Shih)  
    Current Position: Senior Staff, A. T. Kearney
63. Jia Tao, PhD, 2008, “Dry and Near-Dry EDM Processes,” Co-Chair (with A. Shih)  
    Current Position: Senior Engineer, Schlumberger
64. Hongtao Li, PhD, 2008, “Materials Modeling and Process Optimization in Micro/Meso Scale Milling Process,” Co-chair (w/X. Lai of Shanghai Jiao Tong University)  
    Current Position: Senior Researcher, GE China R&D
65. Kwanghyun Park, PhD, 2009, “Development and Analysis of Ultrasonic Assisted Friction Stir Welding Process,” Chair  
    Current Position: Senior Staff, Samsung, Korea
66. Yongqing Li, PhD, 2009, “Development of Functional CAD Model for the Concept of Product DNA,” Chair  
    Current Position: Analyst, Bloomberg
67. Masahiro Fujiki, PhD, 2009, “Analysis and Strategies for Five-Axis Near-Dry EDM Milling,” (with A. Shih)  
    Current Position: Research Engineer, Mori Seiki
68. Jie Feng, Ph.D, 2009, “Microgrinding of Ceramic Materials,” Chair  
    Current Position: Technical Specialist, Dow Chemical
69. Dongan Liu, Ph.D, 2010, “Study on Assembly Modeling and Assembly Process for PEMFC of Metallic Bipolar Plate,” (w X. Lai of Shanghai Jiao Tong University)  
    Current Position: Senior Researcher, State Nuclear Engineering, China
70. Seung Chul Lee, Ph.D, 2010, “Maintenance Strategies for Manufacturing Systems using Markov Models,” Chair  
    Current Position: Assistant Professor, Ulsan National Institute of Science and Technology
71. Yi Liao, Ph.D, 2010, “Machined Surface Feature Extraction and Application,” Chair  
    Current Position: Research Staff, GE Global Research Center
72. Hsinyu Kuo, Ph.D, 2011, “Model-based Cutter Analysis and Evaluation in Milling Titanium Alloys,” Chair  
    Current Position: Senior Engineer, Cummins Engines
73. Saumil Ambani, Ph.D, 2011, “Analytical Estimation of Throughput Distribution for Serial Manufacturing Systems with Multi-State Machines and Its Application,” Co-Chair (with Lin Li)  
    Current Position: Technical Analyst, Bloomberg
74. Shuhuai Lan, Ph.D, 2011, “A of the Micro Thermal Imprint Process based on Amorphous Polymer,” Co-Chair (with Moon Gu Lee)  
    Current Position: Post Doctoral Fellow, University of Michigan
75. Adam Brzezinski, Ph.D, 2011, “Output-Only Techniques for Fault Detection,” Co-Chair (with Dennis Bernstein)  
    Current Position: Staff Engineer, Rockwell-Collins
76. Shimin Duan, Ph.D, 2011, “Stability of Piecewise Affine Systems and Application to Automotive Clutch Systems,” Co-Chair (with Galip Ulsoy)  
    Current Position: Senior Engineer, Magna Powertrain
77. Li Jiang, Ph.D, 2011, “Sensor Degradation Detection and Isolation Using System Dynamics Identification Techniques,” Co-Chair (with Dragan Durdjanovic)  
    Current Position: Senior Research Manager, Bosch
78. Li Xu, Ph.D, 2012, “High Quality 3D Shape Reconstruction via Digital Refocusing and Pupil Apodization in Multi-wavelength Holographic Interferometry,” Chair  
    Current Position: Research Engineer, Coherix
79. Hao Yu, Ph.D, 2012, “A Multiple Height-Transfer Interferometric Technique and Its Applications,” Chair   
    Current Position: Technical Research Staff, Faro
80. Peiyun Yi, Ph.D, 2012, “A Bipolar Plate-less PEM Fuel Cell Design and Manufacturing,” Co-Chair (with Xinmin Lai)  
    Current Position: Senior Lecturer, Shanghai Jiao Tong University
81. Xiaoning Jin, Ph.D, 2012, “Modeling and Analysis of Remanufacturing Systems with Stochastic Return and Quality Variation,” Chair (Co-Chair: J. Hu)  
    Current Position: Assistant Research Scientist, University of Michigan
82. Jae Wook Oh, PhD, 2013, “Experimental Investigation and Analaysis of Chip Rebonding Phenomenon in Turning Superalloys,” Chair  
    Current Position: Senior Engineer, Schlumberger
83. Chaoye Pan, PhD, 2013, “Modeling and Optimization of Multi-Dolly Material Handling System in General Assembly Lines,” Chair  
    Current Position: Senior Engineer, Schlumberger
84. Ahmad Almuhtady, PhD, 2013, “Degradation-Based Swapping Optimization Policy Application to: Fleet-Level Battery Utilization,” Chair  
    Current Position: Assistant Professor, Jordan-Germany University

**Ph.D. Candidate (Passed Preliminary Exam)**

1. Xin Weng, PhD, candidate, “Multi-scale Surface Measurement and Characterization based on Digital Holographic Data,”
2. Xinran Liang, PhD candidate, “Forecasting and Mitigation of Supply and Demand Fluctuation in Remanufacturing Systems”
3. Xi Gu, PhD candidate, “Modeling and Analysis of Manufacturing Systems Resilience”
4. Xun Liu, PhD candidate, “Modeling and Experimental Investigation of Electro-plasticity Assisted Friction Stir Welding of Dissimilar Materials”

**Ph.D. Pre-Candidate (Passed Qualifying Exam)**

1. Yangbin Lou, PhD, pre-candidate student
2. Baoyang Jiang, PhD., pre-candidate student

**Ph.D. Pre-Qualify (Need to Pass Qualifying Exam)**

1. Kai Chen, PhD., pre-qualifying student
2. Huanyi Sui, PhD., pre-qualifying student
3. Bo Wang, PhD, pre-qualifying student
4. Hao Lei, PhD, pre-qualifying student
5. Kevin Wilt, Ph.D., pre-qualifying student

**M. S. Committees Chaired**

1. James Peters, 1989, Co-chair with S. M. Wu
2. Steven Jones, 1989, Co-chair with S. M. Wu
3. Anthony Lamantia, 1989, (now President of Lamantia Machine Company)
4. Foued Ben Amara, 1990, Co-chair with S. M. Wu
5. Hui Zhang, 1992, Co-chair with S. M. Wu
6. Ted Messerly, 1993, Chair
7. Zhou Cao, 1995, Chair
8. Yan (Chris) Feng, 2995, Chair (currently, President of Fuyao Automotive N. A., Inc.)
9. Tamar Liebermann, 1995, Co-chair with J. S. Hu
10. Shun Chen, 1996, Chair
11. Michael Staniszewski, 1996, Chair
12. Andrew Filips, 1997, Chair
13. Dong-dong Li, 1998, Chair
14. Sam Sprik, 1998, Chair
15. Peter Ehmann, 1998, Chair
16. Baoxin Xie, 1999, Chair
17. Matthew Bono, 1999, Chair
18. Kevin Storch, 2000, Chair
19. Nicolas Brennetot, 2000, Chair
20. Brick (H. Z. ) Yang, 2000, Chair
21. Kian-siong Lim, 2001, Chair
22. Yong Lei, 2002, Chair
23. Nicolas Casoetto, 2002, Chair
24. Weiran Lin, 2003, Chair
25. Lin Li, 2003, “Non-contact Laser Measurement System for Complex 3D Drill Surfaces,” Chair
26. Lei Zhang, 2003, “Time-Series Based Predictive Algorithms for Intelligent Maintenance Systems,” Chair
27. Jianboo Liu, 2003, Chair
28. Jing Zhou, 2003, Chair
29. Thomas Gruget, 2003, “Stream of Variation Modeling with Applications,” Chair
30. Brock Partee, 2003, “Drilling Process Optimization,” Chair
31. Rui He, 2004
32. Melody Papke, 2004
33. Atin Tandon, 2004, “Development of Micro-Internal Combustion Engine,” Chair
34. Nia Harrison, 2005, “Warm-Forming of Lightweight Materials,” Chair
35. Katie Johnson, 2005, “Research and Integration of Watchdog Agent Tool Box,” Chair
36. Peng Chen, 2005
37. Oykum Artagun Yesildere, 2006
38. Yang Liu, 2006
39. Jie Zhu, 2006
40. Jia Tao, 2006
41. Kevin Meyer, 2006
42. Rifet Muminovic, 2006
43. Roberto Torres, 2006
44. Sue Dean, 2006
45. Joseph Piazza, 2007
46. Jie Feng, 2007
47. Hsinyu Kuo, 2008
48. Saumil Ambani, 2008
49. Shimin Duan, 2008
50. Chaoye Pan, 2008
51. Li Jiang, 2008
52. Adam Brzezinski, 2009
53. Ahmat Almuhdady, 2009
54. Xiaoning Jin, 2010
55. Xin Weng, 2011
56. Xi Gu, 2011
57. Xun Liu, 2012
58. Yi Liu, 2012
59. Yangbin Lou, 2012
60. Kai Chen, 2012

**Post-Doctoral Fellows Supervised:**

1. Xiaoning Jin,  
   Current Position: Assistant Research Scientist, University of Michigan
2. Shuhuai Lan,  
   Current Position: Senior Research Fellow, University of Michigan
3. Yang Li,  
   Current Position: Research Fellow, University of Michigan
4. Peiyun Yi  
   Current Position: Lecture, Shanghai Jiao Tong University, China
5. Seungchul Lee,  
   Current Position: Assistant Professor, Ulsan National Institute of Science and Technology, S. Korea
6. Lin Li,  
   Current Position: Assistant Professor, University of Illinois at Chicago
7. Sangwon Lee  
   Current Position: Associate Professor, Sungkyunkwan University, S. Korea
8. Dragan Djurdjanovic  
   Current Position: Associate Professor, University of Texas at Austin
9. Rhett Mayor  
   Current Position: Associate Professor, Georgia Institute of Technology
10. Mummar Koc  
    Current Position: Professor, Istanbul Sehir University, and an elected member of Turkish Academy of Sciences
11. Gap Yong Kim  
    Current Position: Associate Professor, Iowa State University
12. Yong Lei  
    Current Position: Associate Professor, Zhejiang University, China
13. Deqin Mei  
    Current Position: Associate Professor, Zhejiang University, China
14. Linfa Peng  
    Current Position: Associate Professor, Shanghai Jiao Tong University
15. DongAn Liu  
    Current Position: Senior Engineer, China Nuclear Research Institute, Shanghai
16. Shimin Duan  
    Current Position: Senior Researcher, GM R&D
17. Wei Li  
    Current Position: Professor, University of Texas at Austin
18. Zhongguo Huang  
    Current Position: Business entrepreneur, China
19. Seunghan Yang  
    Current Position: Professor, Kyungpook National University
20. K. C. Ren  
    Current Position: Business entrepreneur, China
21. Matt Bono  
    Current Position: Unknown
22. Zhiliang Zhou  
    Current Position: Professor, a small university in California
23. J. C. Liang  
    Current Position: Senior Technical Specialist, Federal Mogul
24. Y. Guo  
    Current Position: Senior Engineer, Perceptron
25. K. G. Ahn  
    Current Position: Unknown
26. Boonsuk Kim  
    Current Position: LS Corporation, S. Korea
27. K. M. Yeh  
    Current Position: Unknown

**Undergraduate Special Projects Directed**

**(e.g., ME490)**

Sandeep J. Shah, ME491 Fall 93 & Winter 94

Janet S. Luellen, ME 490 Fall 93 & Winter 94

David Edington, ME 490 Fall 94 & Winter 95

Boon Meng Yong, ME 490 Fall 94 &Winter 95,

Jon Maddux, ME 490, "Preliminary Investigation of Intelligent Material Temperature Compensation for Laser Interferometry Systems and Large CNC Machine Tools," Winter 95

Matt Zimmerman, ME 490, “Drill Point Modeling and Grinding,” Fall 95

Luciana Antonelli, ME 490, “Independant Study on the Applications of MEMS Technology,” Winter 97

Fernando Jimenez, ME 490, “Machine Tool Chatters,” Fall 97

Luciana Antonelli, ME 491, “Statistical Process Control Methods for Automotive Painting Process,” Fall 97

Vince Ilagan, ME 490, “Measurement Principles and Systems for Complex Drill Geometries”, Winter 98

Kevin Storch, ME 490, “Study on Dry Drilling of Aluminum Alloys,” Winter 98

Fernando Jimenez, Vince Ilagan, Kevin Storch, Tim Hidley, ME 450 Project, “Development of a Drill Measurement System,” Winter 98

Elaine Wu, ME490, “Experimental evaluation of dry drilling of Aluminum,” Fall 98

Elaine Wu, ME491, “Research on drilling process modeling,” Winter 99

Justina Cho, ME490, “Design for a Reconfigurable Material Handling Systems,” Winter 99

Irina Feldman, ME490, “Design for a Reconfigurable Fixture,” Winter 99

Patrick McNally, ME490, “Configuration Design for a Manufacturing System,” Winter 02

Brock Partee, ME490, “Configuration Design for a Manufacturing System,” Winter 02

Yingzhen Zhu, ME490, “Tool Registration in Meso-scale Milling Process,” Fall 03

Li Jiang, ME490, “Sensor Validity Estimation and Evaluation,” Fall 03

Jie Zhu, ME491, “SoV Modeling and Compensatory Control for Multi-stage Processes,” Winter 04

**Graduate Special Projects Directed**

**(e. g., ME590)**

Alan Van Zeeland, ME 590, “Study on Automated Wiring Processes”, Winter 93

Falko Kuester, ME 590, “Virtue Reality Applications,” Winter 94, Fall 94

James J. Korotney, ME 590, Fall 94

Junki Choi, ME 590, “Mechanism of Dry Drilling of Aluminum,” Fall 97

Supat Ieamsupapong, ME590, “The Study on Dynamic of Stick-and-Slip Friction Drive Systems,” Fall 01

Kawiya Naovaprateep, MFG 590, “System Modeling on Cost-Based Optimization for Maintenance System,” Fall 01

Lin Li, ME590, “Calibration Techniques for 3D Drill Measurement,” Fall 02

Lei Xia, ME590, “Heated Die Design and Optimization,” Fall 03

Peng Chen, ME590, “FEA Modeling of Warm Forming Processes,” Fall 03

Jingdong Wang, ME590, “Flexible Robotic Gripper Design,” Winter 04

Peng Chen, ME591, “FEA Modeling and Optimization of Warm Forming Processes,” Winter 04

Jie Zhu, ME590, “SoV Based Error Compensation Scheme,” Fall 04

Yingzhen Zhu, ME590, “Development of Dry Die-Sinking EDM System,” Winter 2005

Li Jiang, ME590, “Submodel based Sensor Performance Assessment,” Winter 2005

Wenqian Hu, ME590, “Five-Axis Meso-scale Machine Tool Development,” Winter 2005

Hoon Lee, ME590, “Modeling of Multimodel Systems,” Winter 2006, Fall 2007

Xiaoning Jin, ME590, “Option Model for Joint Production and Maintenance System,” Fall 2007

**Short Courses and Workshops**

1. "Monitoring, Diagnosis, and Adaptive Control of Machine Tools," short course offered at General Motors Technical Center, Feb. — May, 1987, 20 students Lectured one of three days class (with Drs. S. Spiewak and Y. B. Chen).
2. "Precision Machining without Ultra-Precision Machinery," workshop given at NSF Young Faculty Improvement Program, UM-Dearborn, July 1988, 35 faculty, invited lecture on the above research topic.
3. "Enhancement of CMM Performance by On-line Measurement & Compensation", short course given for Precision Metrology with Coordinate Measurement Systems Clinic sponsored by SME, June 11-13, 1991, keynote speaker for the above topic.
4. "Body-in-white Conference", workshop organized by the University of Michigan, April, 1994, co-organizer and lectured in the workshop on the topic of “Measurement Strategies for Automotive Sheet Metal Manufacturing.”
5. "First Automotive Metrology Congress," Turin, Italy, organized by Brown & Sharpe/DEA, May 1995, invited keynote speaker on the subject of “Automotive Dimensional Variation Measurement and Control.”
6. “Laser Gaging Methods and Technologies,” short course organized by SME, Dearborn, Michigan, December 5-6, 1995, lectured on “Machine Performance Enhancement Through the Use of Laser Measurements and Compensation Methods.”
7. “Advanced Manufacturing Technology,” short course organized by Tsinghua University, Beijing, August 16-22, 1999, invited key lecturer.
8. “Automotive Body Design and Manufacturing,” workshop organized by Shanghai Jiao Tong University, November 4-5, 1999, Shanghai, China, invited keynote speaker.
9. “Precision Machine Tools and Error Compensation Techniques,” workshop organized by National Taiwan University and Chiang Industrial Charity Foundation, December 4-6, 2000, Taipei, invited principal lecturer.
10. “Advanced Drilling Process and Drill Design,” short course for DaimlerChrysler engineers, February 2003, August 2003

**Courses Taught at U of M**

|  |  |  |  |
| --- | --- | --- | --- |
| **Semester** | **Course Description** | **Student Evaluation**  **Q1/Q2** | **Enrollment** |
| Fall 89 | ME 340, Introduction to System Dynamics | 4.12/ 4.69 | 48 |
| Fall 90 | ME461, Automatic Control Systems | 3.81/ 3.78 | 50 |
| Winter 91 | ME 360 , Introduction to System Dynamics | 3.57/ 4.10 | 75 |
| Winter 92 | ME 360 , Introduction to System Dynamics | 4.27/ 4.21 | 24 |
| Fall 93 | ME461, Automatic Control Systems | 3.38/ 3.88 | 45 |
| Winter 94 | ME 563, Time Series and System Analysis with Applications | 4.50/ 4.07 | 14 |
|  | IOE 565, Statistical Forecasting | 4.00/ 4.04 | 26 |
| Fall 94 | ME 360, Introduction to System Dynamics | 3.84/ 4.00 | 60 |
| Winter 95 | ME 563, Time Series and System Analysis with Applications | 4.33/ 4.65 | 19 |
|  | IOE 565, Statistical Forecasting | 4.64/ 4.33 | 18 |
| Fall 95 | ME 790, Mechanical Science Seminar | 4.38/ 4.08 | 9 |
| Winter 96 | ME 563, Time Series and System Analysis with Applications | 4.17/ 4.70 | 14 |
| Fall 96 | ME 360, Introduction to System Dynamics | 3.95/ 3.98 | 65 |
| Winter 97 | ME 599, Dimensional Metrology in Manufacturing | 3.80/ 4.50 | 18 |
| Fall 97 | ME 563, Time Series and System Analysis with Applications | 4.25/ 4.50 | 15 |
|  | IOE 565, Statistical Forecasting | 4.00/4.33 | 14 |
| Winter 98 | ME381, Manufacturing Processes | 3.35/3.73 | 56 |
| Fall 98 | ME450, Design/Manufacturing III | 4.30/4.10 | 80 |
| Winter 99 | ME401, Engineering Statistics for Manufacturing Systems | 4.13/4.31 | 54 |
| Fall 99 | ME563, Time Series and System Analysis with Applications | 4.19/4.78 | 28 |
| Winter 00 | ME401, Engineering Statistics for Manufacturing Systems | 4.11/4.35 | 55 |
| Fall 2000 | ME499, Manufacturing Systems Design | 4.20/4.71 | 12 |
| Fall 2001 | ME499, Manufacturing Systems Design | 4.50/4.90 | 7 |
|  | ME563, Time Series and System Analysis with Applications | 4.90/4.90 | 6 |
|  | IOE565, Time Series and System Analysis with Applications | 4.23/4.18 | 23 |
| Winter 2002 | ME401, Engineering Statistics for Manufacturing Systems | 4.22/4.85 | 13 |
| Fall 2003 | ME563, Time Series and System Analysis with Applications | 4.0/4.06 | 26 |
|  | IOE565, Time Series and System Analysis with Applications | 4.06/4.14 | 13 |
|  | ME499, Manufacturing Systems Design | 3.63/3.75 | 12 |
| Fall 2004 | ME450, Design and Manufacturing III | 3.44/3.86 | 20 |
| Winter 2005 | ME401, Engineering Statistics for Manufacturing Systems | 3.86/3.96 | 23 |
| Fall 2005 | ME563, Time Series and System Analysis with Applications | 4.5/4.5 | 6 |
|  | IOE565, Time Series and System Analysis with Applications | 4.25/4.71 | 13 |
| Winter 2006 | ME401, Engineering Statistics for Manufacturing Systems | 4.23/4.23 | 19 |

**RESEARCH**

**Research Programs Underway and Planned**

* “Modeling and Experimental Investigation of Friction Stir Resistance Spot Welding of Dissimilar Materials,” NSF, $300,000, 9/1/2015-8/31/2018
* “A Customized Consultation System for Remote Fault Diagnosis,” China State Shipbuilding Corporation, $166,000, 5/1/2014-8/31/2015,
* “Intelligent Maintenance Systems,” Samsung, $40,000, 10/1/2014-9/30, 2015
* “Development and Implementation of Multi-Stage Modeling, Analysis and Validation for P&G Diaper Production Systems,” P&G, $100,000, 1/1/2015-12/31/2015
* “Developing a Framework for Intelligent Maintenance Systems for Manufacturing Equipment and Processes – Methodology, Metrics, and Best Practices,” National Institute of Standards and Technology (NIST), $52,000, 9/1/2014-8/31/2015
* “Collaborative Research on Event-based Analytics for Enhancing Prognostics Design in a Big Data Environment,” NSF, $99,310, 8/1/2013-7/31/2015
* “Investigation of Electro-Plastic Effect on Advanced High Strength Steels and Its Application in Friction Stir Joining of Dissimilar Materials,” NSF, $199,662, 9/1/2013-8/31/2016
* “Virtual Climate Control Simulation,” Perh, Inc., $300,000, 5/1/2013-4/30/2016
* “NSF-Industry/University Cooperative Research Center on Intelligent Maintenance Systems,” National Science Foundation (EEC-0639468), $75,000, 10/1/11-9/30/2016
* “NSF-Industry/University Cooperative Research Center,” $100,000, 9/1/2014-8/31/2015, Zhejiang Yunxia Ltd.
* “NSF-Industry/University Cooperative Research Center,” $70,000, 1/1/2015 – 12/31/2015, Lippo Group
* “NSF-Industry/University Cooperative Research Center, $40,000, 9/1/2014-8/31/2015, Shenzhou Aerospace Software Company
* “US-China Clean Energy Research Consortium-CVC,” Department of Energy, $12,500,000 (PI- Assanis, Co-PI: Ni, Peng, and 10 others), 10/1/2010-9/30/2015
* “Research Collaboration and Technical Training”, Sany, $230,400, 12/1/2011 – open ended

# Proposals Pending

* Several to NSF.
* “Development of Optimal Maintenance Strategies,” Chrysler, $115,000, 5/1/2013-4/30/2014

**Grants and Contracts Completed**

* “NSF-Industry/University Cooperative Research Center, $40,000, 9/1/2013-8/31/2014, Samsung
* “NSF-Industry/University Cooperative Research Center,” $100,000, 9/1/2013-8/31/2014, Zhejiang Yunxia Ltd.
* “NSF-Industry/University Cooperative Research Center,” $70,000, 1/1/2014 – 12/31/2014, Lippo Group
* “NSF-Industry/University Cooperative Research Center, $40,000, 9/1/2013-8/31/2014, Shenzhou Aerospace Software Company
* “Collaborative Research on Coupled Models for Prognostics and Health Management for Complex Systems,” NSF, $50,000, 9/1/2012-8/31/2014
* “High-Performance Micromachining of Glass using Electrochemical Discharge Machining (ECDM) for MEMS Application,” National Science Foundation, $319,655, 9/01/2011-8/31/2014
* “NSF-Industry/University Cooperative Research Center, $40,000, 9/1/2012-8/31/2013, Samsung
* “NSF-Industry/University Cooperative Research Center,” $100,000, 9/1/2012-8/31/2013, Zhejiang Yunxia Ltd.
* “NSF-Industry/University Cooperative Research Center,” $70,000, 1/1/2013 – 12/31/2013, Lippo Group
* “NSF-Industry/University Cooperative Research Center, $40,000, 9/1/2012-8/31/2013, Shenzhou Aerospace Software Company
* “Remote Vehicle Intelligent Fault Diagnosis,” $400,000, Ministry of Science and Technology, 9/1/2011-8/31/2013
* “Development of Mathematical Algorithms and Implementation for BIW Datum Scheme Optimization and Virtual Gage Repeatability and Reproducibility Analysis,” Chrysler, $174, 042, 9/1/2012-8/31/2013
* “NSF-Industry/University Cooperative Research Center,” $70,000, 9/1/2011-8/31/2012, Zhejiang Yunxia Ltd.
* “NSF-Industry/University Cooperative Research Center,” $70,000, 1/1/2012 – 12/31/2012, Lippo Group
* “NSF-Industry/University Cooperative Research Center,” $40,000, 9/1/2011-8/31/2012, General Motors
* “NSF-Industry/University Cooperative Research Center, $40,000, 9/1/2011-8/31/2012, Ford Motors Company
* “NSF-Industry/University Cooperative Research Center, $40,000, 9/1/2011-8/31/2012, Shenzhou Aerospace Software Company
* “Converge Manufacturing Technology Development of Bio-Medical Application of Network-Embedded Patch System,” Korean Institute of Industrial Technology, $70,000, 4/1/2010-3/31/2012
* “Short-Term Joint Maintenance and Production Decision Support Tool of Manufacturing Systems,” NSF, $278,743, 1/1/2009-12/31/2012
* “High Definition Metrology and Processes – 2 micron manufacturing,” NIST-ATP, $3,600,000, 11/1/2007-6/30/2012, PI from UM (co-PIs: Hu, Shih).
* “Development and Implementation of Optimal Maintenance Strategies,” Ford, $80,000, 10/1/2010-12/31/2011
* “Dimensional Quality Improvement,” Ford, $100,000, 10/1/2010-12/31/2011
* “Design and Manufacturing for Hydrogen Storage Devices,” Ford, $100,000, 5/1/2010-4/30/2011
* “Multistage Diagnosis for Battery Remanufacturing”, General Motors, $166,000, 9/1/2009-8/31/2010
* “Real Time Error Compensation for Micro-Factory by Machine Vision,” Korean Institute of Materials and Machinery, $80,000, 9/1/2009-8/31/2011
* “NSF-Industry/University Cooperative Research Center on Intelligent Maintenance Systems,” National Science Foundation (EEC-0639468), $150,000, 9/15/06-8/31/2011
* “Advanced Manufacturing Process Modeling and Tooling Optimization,” General Electrical Aircraft Engines, $1,250,000, 5/1/05-4/30/2010 (Co-PIs: A. Shih, and J. Hu)
* “GOALI: Multi-Disciplinary Research – Development of a Thermo-Mechanical Particulate Fabrication Technology for Mass Production of Integrated Microstructure Porous Surfaces with Controlled Pattern,” National Science Foundation, $359,632, 5/1/06 – 4/30/09 (Co-PI with M. Koc, M. Keviany, S. Wayne)
* “Supplemental Funding: Developing an Engineering Immune System for Performance Recovery of Continuous Manufacturing Processes,” NSF, $50,000, 9/1/2008-8/31/2009
* “Multi-model System Modeling,” BorgWarner, $35,000, 9/1/2008-4/1/2009
* “Exploratory Research on High Performance Drilling of Sandwich Materials for Aerospace Application,” Boeing, $20,000, Gift
* “Intelligent Maintenance Systems,” $75,000, General Motors, 2/16/07 – 2/15/08
* “Intelligent Maintenance Systems,” $12,000, Coherix, 6/1/08 – 5/31/08
* “Intelligent Maintenance Systems,” $40,000, BaoSteel, 10/1/07 – 9/30/08
* “Intelligent Maintenance Systems,” $40,000, BorgWarner, 7/16/07 – 7/15/08
* “Intelligent Maintenance Systems,” $40,000, Robert Bosch, 11/1/07 – 10/31/08
* “Modeling of Automotive Clutch Systems,” $70,000, BorgWarner, 9/1/07-8/31/08
* “Modeling and Simulation of Complex Manufacturing Systems,” $30,000, Borg Warner, 9/1/07-5/1/08
* “GOALI: Immune System Engineering for Automotive Engine Systems,” National Science Foundation, $99,797, 5/15/06 – 4/30/08 (Co-PI with D. Djurdjanovic)
* “Rapid, Ultra Precision Direct Metal Deposition Technology,” NIST-ATP, amount: $5,000,000, 6/1/2004 – 5/31/08, PI from UM
* “Throughput Increase Through Predictive Intelligent Maintenance,” $41,508, American Axle & Manufacturing, 9/1/2006-8/31/2007
* “Intelligent Maintenance of Complex Systems Using an Integrated Cumulative Damage Model and Distributed Agent-Based Maintenance Decision-Making,” National Science Foundation, $150,000, 10/1/05 – 8/31/06
* “Intelligent Prognostic Tools for Next Generation Semiconductor Fabs,” Semiconductor Research Corporation (SRC), $400,000, 9/1/04-8/31/07
* “Throughput Improvement Through Smart Maintenance,” $120,000, 11/1/2005 – 12/31/2006, DaimlerChrysler
* “Intelligent Maintenance Systems,” $40,000, BorgWarner, 7/14/06-7/13/07
* “Simulation, Analysis and Optimization in General Assembly,” $63,059, General Motors, 9/1/06-8/31/07
* "Collaborative Research:  Predictive Infotronics Agent for Integrated Product Life Cycle Support," National Science Foundation (EEC-0331629), $192,200, 9/1/03-8/31/06
* “NSF-Industry/University Cooperative Research Center on Intelligent Maintenance Systems,” National Science Foundation (EEC-0132521), $250,000, 8/1/01-7/31/06 (Center Director from UM), in collaboration with the University of Wisconsin-Milwaukee
* “Fundamental Aspects of Micro Internal Combustion Swing Engine (MICSE) Portable Power Generation Systems,” DARPA, $600,000, 9/1/04-8/31/06
* “Development of a Novel Process for Manufacturing of Fuel Cell Bipolar Plates – A Hybrid Internal Pressure Assisted Embossing Process Combined with Mechanical Joining,” National Science Foundation, $75,000, 5/1/05 – 5/31/06 (Co-PI with M. Koc)
* “Center for Intelligent Maintenance Systems,” Various Industrial Memberships, $450,000 per year, 8/1/01-7/31/06, (Center Director from UM), in collaboration with the University of Wisconsin-Milwaukee
* “AWARE -- International Linkages of Center for Intelligent Maintenance Systems on Web-Enabled and Tether-free Technologies,” National Science Foundation (INT-0220488), $100,000, 8/1/03-7/31/06
* “Engineering Research Center for Reconfigurable Manufacturing Systems,” National Science Foundation (EEC-9529125), $3,600,000, 4/1/05-3/31/06 (PI: Koren, Co-PI)
* “Modeling, Analysis and Optimization of Dental Files,” Advanced Endodontics, $50,000, 1/1/05-12/31/05
* “Fuel Processors for PEM Fuel Cells,” US Department of Energy, $5,598,478, 1/1/02-12/31/05, (Co-Pis: L. Thompson, E. Gulari, J. Ni, J. Schwank, R. Yang)
* “Thermal Error Compensation for MQL Machining Processes,” Ford Motor Company, $75,000, 4/1/04-3/31/05
* “Collaborative Research: Micro/Meso-scale Machine Tool Systems” National Science Foundation (DMI-0114993), $480,000, 9/1/01-10/31/04, collaboration among UIUC, NW, UM. PI from UM
* “Micro Internal Combustion Swing Engine (MICSE) System for Portable Power” DARPA/DSO, $3,337,054, 5/1/01-6/30/2004, (Co-PIs: W. Dahm and J. Ni)
* “Thermal Distortion Analysis for MQL Drilling Processes,” Ford Motor Company, $85,000, 8/1/03-7/31/04
* “Modeling of Heat Transfer Processes in Warm Forming Processes,” National Center for Manufacturing Science (NCMS), $66,350, 11/1/02 – 5/31/04
* "Workshop on Remote Monitoring and Predictive Maintenance of Machine Tool Systems- Achieving Near-Zero Downtime Performance; Ann Arbor, Michigan; April 29, 2003." National Science Foundation (DMI-0318730), $15,000, 4/1/03-3/31/04
* “Gundrilling Process Design and Optimization,” General Motors Powertrain Operations, $100,000, 8/1/02 – 10/31/03
* “Advanced Drilling Processes and Cutter Grinding,” DaimlerChrysler, $45,000, 2/1/03-1/31/04
* “Development of Virtual Machine Tool Systems,” National Science Foundation (DMI-0004237), $450,000, 9/1/00 – 8/31/03, collaboration among UIUC, NW, UM. PI from UM.
* “Gundrilling Process Optimization,” Ford Motor Company-Advanced Manufacturing Technology Development, $70,000, 1/1/02 – 4/30/03
* “Prediction of hole quality in drilling,” National Science Foundation (DMI-9813457), subcontract amount: $120,000, 9/1/98-8/30/02, collaboration among UIUC, NW, UM. PI from UM.
* "International Conference on Frontiers of Design and Manufacturing; Dalian, China." National Science Foundation (DMI-0231076), $10,000, 10/1/02-10/31/02
* “Modeling of Chip Evacuation Mechanism in Deep Hole Drilling Processes,” Delphi Automotive R&D Center, $50,000, 1/1/02 – 12/31/02
* “Research on High Throughput Deep Hole Drilling Processes,” National Center for Manufacturing Science (NCMS), $142,500, 7/17/99 – 4/30/02,
* “Fuel Processors for PEM Fuel Cells,” IESET, University of Michigan, $150,000, 3/1/01- 2/28/02, (Co-PI with L. Thompson, E. Gulari, and J. Schwank)
* “Planning Grant for the Establishment of an Industry/University Cooperative Research Center for Intelligent e-Maintenance Systems,” ,” National Science Foundation, $10,000, November 2000
* “Presidential Faculty Fellows Awards,” National Science Foundation, $500,000, 10/1/94 - 9/30/01, Principal Investigator
* “Improvement of Drilling Processes,” Honda Motor Company & Honda American Manufacturing, $147,655, 7/1/99 – 6/30/2001, Principal Investigator
* “Small Deep Hole Drilling,” Delphi Automotive,” $50,000, 7/1/00 – 6/30/01
* “Industry/University Cooperative Research Center for Dimensional Measurement and Control in Manufacturing,” National Science Foundation (EEC-9015282**)**, annually $50,000, until 6/30/2000, plus annual industrial memberships:   
   Automated Precision Inc., $50,000  
   Boeing Commercial Aircraft Company (Wichita), $50,000  
   Boeing Commercial Aircraft Company (Seattle), $50,000  
   Chrysler Corporation, $50,000  
   Ford Motor Company, $50,000  
   General Motor Corporation, $50,000  
   Perceptron, Inc., $50,000  
   Saginaw Machine Systems, $50,000
* “Development of Meso Machine Tool Systems,” National Science Foundation (DMI-0000387), $100,000, 4/1/00 – 3/31/01, collaboration among UIUC, NW, UM. PI from UM.
* “Real-Time High-Speed Active Balancing,” NIST-Advanced Technology Programs, $1,984,113 (UM’s subcontract amount: $800,000), Principal Investigator, 11/1/97 - 10/31/2000
* “Robust Error Compensation Methods for Machine Tools,” National Science Foundation (EEC-9815687), $200,000, 10/1/98-9/30/2000, PI.
* “Research on High Performance Drill Point & a Rule-Based Knowledge System for Drill Development,” High Throughput Hole Making Consortium, $219,833, 5/1/97 - 4/30/99, Principal Investigator, extended to 6/30/00 for an additional $80,000.
* “Analysis of the Effects of Dry Drilling on the Hole Quality,” National Center for Manufacturing Science (NCMS), $92,720, 7/17/98 – 7/15/99, Extended for additional $50,000 through 6/30/00, PI.
* “Agile and Precision Sheet Metal Stamping,” Advanced Technology Program, National Institute of Standards and Technology (NIST), $8,301,000, 11/1/95 - 6/30/00 (UM’s share is around $4 million), Co-PIs from UM: J. Shi, J. Ni, J. Hu, A. Ghosh, and X. Wu
* “Research on Ultrasonically-Assisted Drilling,” National Center for Manufacturing Science (NCMS), $39,720, 7/17/99 – 5/31/00,
* “Machine Tool-Agile Manufacturing Research Institute,” National Science Foundation (NSF) and DARPA, $5,000,000, 4/1/94 - 3/31/99, UM subcontract amount: $500,000, Principal Investigator from UM (with six other universities and three institutions)
* “NSF Graduate Research Traineeship in Machine Tool Technology,” National Science Foundation (NSF) (GER-9355057), $630,785, 10/1/93 - 9/30/99, Co-PIs: Ulsoy, Ni, Koren, Kannatey-Asibu, and Stein)
* “Design for Minimizing Variation in Automotive Body Assembly,” Chrysler Corporation, $80,000, 1/1/97 - 8/30/98, renewed $49,500 until 12/31/99, Principal Investigator
* “Development of Scientific Bases for Drills,” Tecumseh Products Company, Unrestricted grant of $200,000, 1995-8, Principal Investigator
* “Stamping Subassembly Process Quality Control for Automotive Manufacturing,” Institute for Manufacturing Technology, $120,000, 11/01/97 - 10/31/99, Principal Investigator
* “Intelligent Resistance Welding,” Advanced Technology Program, National Institute of Standards and Technology (NIST), $6,393,000, 11/1/95 - 10/30/98 (UM’s share is around $2.5 million), Co-PIs from UM: J. Hu, J. Ni, E. Kannatey-Asibu, H. Peng, M. Bridges, and J. Barber.
* “Error Compensation Research for Large Structure Machine Tools,” Boeing, $50,000, 7/1/97 - 6/30/98, Principal Investigator
* “Dry drilling of aluminum alloy research,” General Motors Corporation, $95,000, 12/01/96 - 3/30/98
* “Machine-Tool Chatter Prevention Through Spindle Speed Variation,” National Science Foundation, $50,000, 6/15/95 - 5/31/98, Principal Investigator
* “Development of advanced drill points,” Tecumseh Products Company, Unrestricted grant of $100,000, 1993 - indefinite, Principal Investigator (PI)
* “Predictive and Active Chatter Suppression,” Boeing, $70,000, 10/1/96 - 9/30/97
* “Temperature Compensation,” Boeing, $80,000, 10/1/96 - 9/30/97
* “Thermal Error Reduction on CNC Crankshaft Belt Grinder,” General Motors Corporation, $34,612, 1/01/97 - 4/30/97
* “Process Capability Evaluation for Critical Automobile Body Assembly and Stamping,” Chrysler Corporation, $300,000, 1/1/97 - 12/30/97, Co-PIs: J. Ni, J. Shi, D. Ceglarek, X. Wu, and G. Herrin.
* “Deep Hole Drilling of Aluminum,” Kelsey-Hayes, $49,424, 9/15/96 - 2/28/97
* “Advanced Thermal and Geometric Error Compensation for Large Structure CNC Machining Center,” Boeing Commercial Airplane Company, $78,000, 4/1/96 - 8/31/97, Co-PIs: J. Ni, and J. Yuan
* “Renovation of the HH Dow Library for the Establishment of an Integrated Machining Systems Laboratory,” National Science Foundation, $455,000, 3/1/95 - 3/31/97, Co-PIs: G. Ulsoy, E. Kannatey-Asibu , J. Ni, Y. Koren, J. Stein, W. Endres, and D. Dutta.
* “Thermal Error Compensation System Design for Precision Machining Center,” Office of Naval Research, $35,221, 10/1/95 - 7/31/97, Co-PIs: J. Ni, and J. Yuan
* “Real-Time Thermal and Geometric Error,” Boeing Commercial Airplane Company, $83,000, 12/1/95 - 11/30/96, Principal Investigator
* “Advanced Compensation System for Quasi-static and Cutting Force-induced Errors for Turning Centers,” Advanced Research Projects Agency (ARPA), $997,620, (UM’s share was $490,000), 7/1/94 - 11/30/96, Principal Investigator
* "Variation reduction in automotive assembly and stamping processes," Chrysler Corporation, $640,000, 1/1/94/ - 12/31/95, Co-PIs: J. Hu, and J. Ni.
* "Thermal and Geometric Error Compensation on a large structure CNC machining center," Boeing Commercial Airplane Company, $68,000, 1/3/95 - 8/31/95, Co-PIs: J. Ni, and J. Yuan.
* "Investigation of the dimensional control and compensation on an agile CNC turning center," General Motors Powertrain - Windsor, $160,000, 12/1/94 - 8/31/95, Co-PIs: J. Ni, and J. Yuan.
* "Development of an Adaptive Compensation Technique for Enhancing CMM Accuracy," Advanced Technology Program, National Institute of Standards and Technology (NIST), $993,609, (UM’s share was $499,000), 3/1/93 - 2/28/95, Principal Investigator
* "Real-time error compensation techniques for retrofitted turning centers," National Center for Manufacturing Sciences (NCMS), $190,000, 3/1/93 - 2/28/95, Principal Investigator
* "Development of Advanced Technologies and Systems for Controlling Dimensional Variation in Automobile Body Manufacturing," Advanced Technology Program, National Institute of Standards and Technology (NIST), $13,867,872, (UM’s share was around $6 million) 9/1/92 - 8/30/95, Co-PIs: S. M. Wu, J. Ni, and J. Hu.
* "Development of a Science Base for Drills and Drill Grinding Processes," Strategic Manufacturing Initiative, National Science Foundation (NSF), $599,296, 9/1/92 - 8/30/95, Co-PIs: S. M. Wu, J. Ni, and T. C. Woo.
* "Variation reduction in automotive assembly and stamping processes," Chrysler Corporation, $340,000, 1/1/93/ - 12/31/94, Co-PIs: J. Ni, and J. Hu.
* "Precision flexible line-boring technology," GM and Ford, $130,000, 6/1/93 - 5/30/94, Co-PIs: G. Ulsoy, Y. Koren, and J. Ni.
* "Development of a Postprocessor for the Generation of Probing Cycles and Data Analysis for Preventive Maintenance on a Campbell Grinder," National Center for Manufacturing Sciences (NCMS), $169,001, 2/1/92 - 1/31/94, Principal Investigator
* "Development of an advanced multi-facet drill for SAE-4118 steel ring gears," General Motors Saginaw Division, $25,000, 6/1/93-12/31/93, Principal Investigator
* "Statistical Evaluation of GD&T using CMMs", GM-CPC Headquarters, $175,000, 4/1/90- 3/31/93, Principal Investigator
* "Electronic Reporting Systems for CMM Applications", GM-CPC Headquarters, $150,000, 3/1/91- 2/28/93, Principal Investigator
* "Advanced Compensation Techniques for Enhancing Machine Tool Accuracy," Advanced Technology Program, National Institute of Standards and Technology (NIST), $540,000, 4/1/91 - 3/30/93, Co-PIs: S.M. Wu, and J. Ni.
* "Development of a Modular Thermal Error Sensing and Compensation System on Machining Centers", U.S. Air Force Manufacturing Technology Program and NIST, $499,067, 11/1/91 - 10/30/93, Co-PIs: S.M. Wu, J. Ni, and J. Yuan.
* “On-line identification and enhancement of volumetric accuracy in Die Manufacturing Cell,” General Motors Technical Center, $87,000 Sept. 1987 through Aug. 1988; $54,000 Sept. 1988 through May 1989; $36,000 June 1989 through Oct. 1989, Co-PIs: S.M. Wu, and J. Ni.
* “Cost-sharing towards the purchase of a coordinate measuring machine,” National Science Foundation (NSF), $50,000, 1990, Co-PIs: S.M. Wu, and J. Ni.
* “Development of new techniques for enhancing the performance of coordinate measuring machines (CMM),” Air Force, Wright-Patterson AFB, AFWAL /MLTM, $398,643 Aug. 1989 through July 1991, Co-PIs: S.M. Wu, and J. Ni.
* "Development of real-time CNC tool path generation techniques", Tarus Products, Inc., Unrestricted grant of $50,000, 1991, Principal Investigator
* "Adhesive Processing by Electromagnetic Irradiation: Adhesive Bonding of Body Panels to the U-Van Metal Space Frame", GM-CPC Engineering, $99,937, 06/01/91- 12/31/91, Co-PIs: V. V. Liepa of EECS, R. E. Robertson of MSE, and J. Ni.

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* L. Li, Q. Chang, J. Ni, G. Xiao, S. Biller, “Bottleneck Detection of Manufacturing Systems Using Data Driven Method,” ISAM’07, IEEE International Symposium on Assembly and Manufacturing, 2007
* L. Jiang, D. Djurjanovic, and J. Ni, 2007, “A New Method for Sensor Degradation Detection, Isolation and Compensation in Linear Systems,” Proceedings of ASME IMECE, Vol. 9: Mechanical Systems and Control
* G. Y. Kim, M. Koc, and J. Ni, 2007, “Modeling of Size Effects on the Flow Stress of Type 304 Stainless Steel and Application in Coining Process,” Proceedings of ASME IMECE, Vol. 13: Processing and Engineering Applications of Novel Materials
* K. Park, G. Y. Kim, and J. Ni, 2007, “Design and Analysis of Ultrasonic Assisted Friction Stir Welding,” Proceedings of ASME IMECE, Vol. 3: Design and Manufacturing
* H. Y. Kuo, K. Meyer, R. Lindle, H. Weaver, and J. Ni, “Microstructure and Material Analysis of Worn WC-Co Ball-End Mills,” ASME Manufacturing Science and Engineering Conference, October 8-10, 2008
* A. Brzezinski, Y. Wang, D. K. Choi, G. Qiao, and J. Ni, “Feature-Based Tool Condition Monitoring in a Gear Shaving Application,” ASME Manufacturing Science and Engineering Conference, October 8-10, 2008
* L. Jiang, E. Latronico, and J. Ni, 2008, “A Novel Method for Input Selection for the Modeling of Nonlinear Dynamic Systems,” ASME 2008 Dynamic Systems and Control Conference, Parts A and B.
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* A. J. Brzezinski, S. L. Kukreja, J. Ni, and D. S. Bernstein, 2010, “Sensor-only fault detection using pseudo transfer function identification,” in Proc. Amer. Control Conf. (Baltimore, MD), pp. 5433-5438, June
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* H. Y. Kuo, K. Meyer, R. Lindle, and J. Ni, 2011, “Estimation of Milling Tool Temperature Considering Coolant and Wear,” Proceedings of ASME Manufacturing Science and Engineering Conference, Oregon
* S. Lee, A. Brzezinski, and J. Ni, 2011, “Plant Layout Optimization Considering the Effect of Maintenance,” Proceedings of ASME Manufacturing Science and Engineering Conference, Oregon
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* C. Pan, G. Xiao, Q. Chang, and J. Ni, 2012, “Throughput Analysis of Multi-state Manufacturing Systems,” Proc. of ASME 2012 International Manufacturing Science and Engineering Conference, Notre Dame, IN, USA
* X. Gu, S. Lee, X. Liang, and J. Ni, 2012, “Extension of Maintenance Opportunity Windows to General Manufacturing Systems,”Proc. of ASME 2012 International Manufacturing Science and Engineering Conference, Notre Dame, IN, USA
* A. Almuhtady, S. Lee, and J. Ni, 2012, “Degradation-based Swapping Policy with Application to System-level Manufacturing Utilization,” Proc. of ASME 2012 International Manufacturing Science and Engineering Conference, Notre Dame, IN, USA
* X. Jin, and J. Ni, 2012, “Dynamic Strategies for Preventive Maintenance Scheduling with Throughput Target Variation,” Proc. of ASME 2012 International Manufacturing Science and Engineering Conference, Notre Dame, IN, USA
* X. Jin, G. Xiao, Q. Chang, S. Biller, J. Ni, and S. J. Hu, 2012, “Performance Analysis and Optimization of Remanufacturing Systems with Stochastic Returns,” Proc. of ASME 2012 International Manufacturing Science and Engineering Conference, Notre Dame, IN, USA
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* A. Almuhtady, S. Lee, E. Romeijn and J. Ni, 2013, "A Maintenance-optimal Swapping Policy for a Fleet of Electric or Hybrid-Electric Vehicles," The 2nd International Conference on Operations Research and Enterprise Systems (ICORES 2013), Barcelona, Spain
* Mohammad Reza Rafar, J. Ni, Ali Behroozfar, and S. H. Lan, 2013, “An Investigation on Electrochemical Discharge Micro-Drilling of Glass,” Proceeding of ASME International Manufacturing Science and Engineering Conference, Madison, WI
* X. Jin, J. Ni, S. J. Hu, G. Xiao, and Q. Chang, 2014, “Threshold-type Admission Policy for Remanufacturing Systems,” IEEE International Conference on Automation Science and Engineering (CASE), pp. 467-473
* X. Gu, X. Jin, and J. Ni, 2014, “Resilience Measures of Manufacturing Systems Under Disruptions,” ASME International Manufacturing Science and Engineering Conference
* X. Weng, X. Jin, and J. Ni, 2014, “Multi-Scale Surface Characterization and Control based High Density Measurements,” ASME International Manufacturing Science and Engineering Conference
* L. Peng, P. Yi, P. Hu, X. Lai, and J. Ni, 2014, “Analysis of the Micro/Meso Scale Sheet Forming by Strain Gradient Plasticity and Its Characterization of Tool Feature Size Effects,” ASME International Manufacturing Science and Engineering Conference
* B. Jiang, S. Lan, and J. Ni, 2014, “Experimental Investigation of Drilling Incorporated Electrochemical Discharge Machining,” ASME International Manufacturing Science and Engineering Conference
* Y. Xing, J. Ni, and S. Lan, 2014, “Fixture Layout Optimization Based on Social Radiation Algorithm,” ASME International Manufacturing Science and Engineering Conference
* X. Liu, S. Lan, and J. Ni, 2014, “Experimental Study on Friction Stir Welding of Dissimilar Al6061 to Trip 780/800 Steel,” ASME International Manufacturing Science and Engineering Conference
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**Books**

(None).

**Chapters in Books**

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* J. Ni, 1995, "Accessary Elements," Chapter 4 in *Coordinate Measuring Machines and Systems*, Marcel Dekker, Inc.
* J. Ni, 1995, "Environmental Control," Chapter 9 *in Coordinate Measuring Machines and Systems*, Marcel Dekker, Inc.
* H. Kunzmann, J. Ni, and F. Wäldele, 1995, "Accuracy Enhancement," Chapter 10 in *Coordinate Measuring Machines and Systems*, Marcel Dekker, Inc.
* M. Koc, J. Ni, J. Lee, and P. Bandyopadyay, 2004, “Introduction to e-Manufacturing,” Industrial Information Technology Handbook, CRC Press
* J. Lee, J. Ni, H. Wang, and D. Djurdjanovic, 2007, “Intelligent Maintenance Systems,” Chapter 7.2 in *Sustainability in Manufacturing – Recovery of Resources in Product and Materials Cycles*, Springer House, pp. 354-365
* H. Zhang, J. Ni, and M. J. Jackson, 2009, “Machining Stability,” Machining with Nanomaterials, Springer
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* D. Djurdjanovic, J. Liu, K. A. Marko and J. Ni, “Immune Systems Inspired Approach to Anomaly Detection, Fault Localization and Diagnosis in Automotive Engines,” Applications of Neural Networks in High Assurance Systems, Springer, 2010

#### Book Reviews

(None).

**Government, University or Industrial Reports (non-refereed)**

* "Machine Diagnostic Monitoring, Tool Condition Monitoring, Volumetric Error Analysis and Control", (w/Chen and Wu), quarterly and annual reports to Advanced Engineering Staff, General Motor Technical Center, 1987, 1988
* "Volumetric Error Identification of Die Manufacturing Cell", Annual report to Advanced Engineering Staff, General Motor Technical Center, 1989
* "Compensation of Thermal Spindle Growth", Preliminary report to Advanced Engineering Staff and Saginaw Vanguard Plant of General Motors Corporation, 1990
* "Electronic Report and Data Transfer", Annual report to Chevolet-Pontiac-Canada Group Headquarters, General Motors Corporation, 1991
* "Statistical Evaluation of Sheet Metal Conformance to GD&T", Annual report to Chevolet-Pontiac-Canada Group Headquarters, General Motors Corporation, 1991
* "Development of New Techniques for Enhancing the Performance of Coordinate Measuring Machines", Final report to the U.S. Air Force, Wright-Patterson Base, 1991
* "Variation Reduction, 2mm Program," (w/Hu, et al) Final report to Chrysler Corporation, 1993
* "Advanced Compensation Techniques for Enhancing Machine-Tool Accuracy," Final report to Advanced Technology Program, National Institute of Standards and Technology, 1993
* "Development of Advanced Technologies and Systems for Controlling Dimensional Variation in Automobile Body Manufacturing," (w/Hu, et al) First year report to NIST, 1993
* "Adaptive Compensation Technique for Enhancing CMM Accuracy", Technical Report, No.1, June 1993
* "Adaptive Compensation Technique for Enhancing CMM Accuracy", Technical Report, No.2, September 1993
* "Adaptive Compensation Technique for Enhancing CMM Accuracy", Technical Report, No.3, December 1993
* "The Development of a Modular Thermal Error Sensing and Compensation System on a 3-Axis Machining Center," Final report to the U.S. Air Force, and NIST, 1994.
* "Adaptive Compensation Technique for Enhancing CMM Accuracy", Technical Report, No.4, March 1994

### Abstracts in Non-refereed Conference Proceedings

* J. Ni, J. Sha, and, T. C. Woo, 1994, "Development of a Science Base for Drills and Drill Grinding Processes," *Proceedings of NSF Grantee Conference*, M.I.T., Boston
* J. Ni, 1994, "Computer Enhanced Machine Accuracy for CNC Machine Tools and Coordinate Measuring Machines -- Current Status and Related Issues," *Proceedings of Fifteenth Modern Engineering & Technology Seminar*, Taipei, Taiwan, December
* J. Ni, J. Wang, L. Zhang, and X. Lin, 1995, "Development of a Science Base for Drills and Drill Grinding Process," *Proceedings of The 1995 NSF Design and Manufacturing Grantees Conference*, San Diego, CA, pp.463 - 465
* J. Ni, 1995, “Review of Current Status of Automotive Manufacturing Research,” *Proceedings of Symposium on Advanced Manufacturing Technology Strategy*, April, Beijing, China
* J. Ni, 1997, “Machine Tool Performance Enhancement,” *Proceedings of The 1997 NSF Design and Manufacturing Grantees Conference*, Seattle, WA, pp.199-200
* J. Ni, 1998,”Research on Machine Tool and Machining Performance Enhancement,” *Proceedings of The 1998 NSF Design and Manufacturing Grantees Conference*, Monterrey, Mexico, pp.345 - 346

### Patents

* "Multi-Degree-of-Freedom Geometric Error Measurement System," (with co-inventor: P. S. Huang), US Patent Number: 5,418,611, (Filed June 14, 1993), Date of Patent: May 23, 1995
* “A Novel Machining Chatter Prevention Technique Through Random Multi-Level Spindle Speed Variation,” (with co-inventors: Alpay Yilmaz, and Emad Al-Regib), disclosure filed, 4/1996
* “A Roll Measurement Principle and System,” (with co-inventor: Jian He), disclosure filed, 4/1996
* “High-Speed, Ultra Precision Manufacturing Station That Combines Direct Metal Deposition and EDM,” (with co-inventors: J. Mazumder, and A. Shih), US Patent Number: US2007/0205184 (September 6, 2007)
* “A Novel Design of an Integrated Bipolar Plate for PEM Fuel Cells,” (co-inventors: Xinmin Lai, Shuhuai Lan, Jun Ni, Zhong-Qin Lin, Linfa Peng, Dongan Liu), Chinese Patent Number: CN 100392895, Filed on July 27, 2006 and Approved on June 4, 2008
* “A Novel Fabrication Method for PEM Fuel Cell Metal Bipolar Plate Based on Roll Forming,” (co-inventors: Jun Ni, Xinmin Lai, Shuhuai Lan, Zhong-Qin Lin, Linfa Peng, Dongan Liu), Chinese Patent Number: CN 200610118899.2, Filed on Nov 30, 2006 and Approved on Oct 1, 2008
* “Fabrication of PEM Fuel Cell Bipolar Plates Using Precision Thin-Sheet Forming,” (co-inventors: Xinmin Lai, Jun Ni, Linfa Peng, Peng Hu, Zhong-Qin Lin, Guanlong Chen), Chinese Patent Number: CN 200710044479.9, Filed on Aug 2, 2007 and Approved on Mar 4, 2009
* “A Novel Fabrication Method for PEM Fuel Cell Stacks,” (co-inventors: Xinmin Lai, Peiyun Yi, Jun Ni, Zhong-Qin Lin, Linfa Peng, Dongan Liu, Shuhuai Lan, Peng Hu), Chinese Patent Application Number: CN101079494, Filed on July 5, 2007 and Approved on May 27, 2009
* “Stamped Metal Bipolar Plates for PEM Fuel Cells,” (co-inventors: Jun Ni, Dongan Liu, Linfa Peng, Xinmin Lai, Zhong-Qin Lin, Peng Hu, Jianmin Mai), Chinese Patent Application Number: CN101183723, Filed on Dec 13, 2007 and Approved on March 24, 2010
* “A Novel Serpentine Flow Channel Design for PEM Fuel Cells,” (co-inventors: Jun Ni, Linfa Peng, Xinmin Lai, Zhong-Qin Lin, Jianmin Mai), Chinese Patent Application Number: CN101465435, Filed on Jan 15, 2009 and Approved on Nov 3, 2010
* “Electrolytic Electric Spark Cutting Composite Micromachining Device and Method,” (co-inventors: Chengjun Wei, Jun Ni, Kaizhou Xu, Dejin Hu, and Limin Xu), Chinese Patent Application Number: CN201010289524, Filed on Sep 22, 2010, and Approved on Aug 22, 2012
* “Miniature Metal-Based Grinding Wheel On-Line Electrolytic Electric Spark Dressing Device and Method,” (co-inventors: Chengjun Wei, Jun Ni, Dejin Hu, Kaizhou Xu, and Limin Xu), Chinese Patent Application Number: CN 201010510121, Filed on Oct 15, 2010, and Approved on Aug 22, 2012
* “Method of Compositely Manufacturing Proton Exchange Membrance Fuel Cell Bipolar Plate and Membrane Electrode Assembly,” (co-inventors: Jun Ni, Linfa Peng, Peiyun Yi, Ximin Lai, and Zhong-qin Lin), Chinese Patent Application Number: CN101552342, Filed on April 9, 2009 and Approved on Dec 29, 2010
* “Metal Gas Diffusion Layer Used for Fuel Cell and Preparation Method Thereof,” (co-inventors: Peiyun Yi, Xinmin Lai, Linfa Peng, Diankai Qiu, and Jun Ni), Chinese Patent Application Number: CN102082277, Filed on Dec 24, 2010 and Approved on Jun 19, 2013
* “Fuel Cell Auxiliary Current Ultra Thin Metal Bipolar Plate Bonding Device and Method,” (co-inventors: Xinmin Lai, Zhutian Xu, Linfa Peng, Zhongqin Lin, and Jun Ni), Chinese Patent Application Number CN201010525736, Filed on Oct 30, 2010, Approved on July 2, 2014
* “Full-hydraulic Driving Roll Fin Impress Device,” (co-inventors: Linfa Peng, Zhaoyang Gao, Peiyun Yi, Jun Ni, and Xinmin Lai), Chinese Patent Application Number CN 201210049165, Filed on Feb 28, 2012 and Published on July 25, 2012
* “Device and Method for Processing Polymer Film Surface Microstructure Based on Roll-to-Roll Hot Rolling,” (co-inventors: Yujun Deng, Peiyun Yi, Linfa Peng, Xinmin Lai and Jun Ni), Chinese Patent Application Number: CN102806660, Filed on Aug 16, 2012, and Published on Dec 5, 20124
* “Hybrid Friction Stir Welding for Dissimilar Materials Through Electro-Plastic Effect,” (co-inventors: Xun Liu, Shuhuai Lan, and Jun Ni), Invention Disclosure, filed to UM on December 2012.

**SERVICE**

**Major Committee Assignments at U of M**

• Dean, UM-SJTU Joint Institute 2006 – present

• Chair, Academic Program Group, UM-SJTU Joint Institute 2007 – present

• Member, UM-SJTU Joint Institute Board of Directors 2005 – 2006

• Member, International Program Committee, CoE, Sep. 1999 – 2007

• Member, UM China Delegation, March 2005 – July 2005

• Chair, Space Strategy Planning Committee, ME, June 2005 – 2006

• Director, Laboratory and Space, ME, June 2003 – 2006

• Chair, ME Grad Program, May 2002 – December 2002

• Chair, ME Faculty Search Committee, Sep. 2001 – June 2002

• Member, ME Graduate Study Committees, Sep. 2001– May 2003

• Chair, CoE International Program Committee, Sep. 2002 – May 2004

• Member, International Program Committee, CoE, Sep. 1999 – Aug. 2002

• Member, Senate Assembly, Sep. 2000 – Aug. 2003

• Member, Management Committee, NSF-Engineering Research Center for Reconfigurable Machining Systems, 1996 – 2006

• Member, Promotion Review Committee for Albert Shih, July 2005

• Member, Reappointment Review Committee for Steve Skerlos, January 2003

• Member, ME Chair Search Committee, Jan. 2001 – December 2001

• Area Coordinator, MEAM Design and Manufacturing Area, July 1997 – Dec. 2000

• Chair, Promotion Review Committee for Johann Borenstein to SPRS, July 2000 – December 2000

• Member, Manufacturing Council, Program in Manufacturing, July 1996- Dec. 1998

• Program Advisor, Program in Manufacturing, July 1996- Dec. 1998

(About 60 to 70% of PIM students are with ME background and their admission and program counseling are all assigned to me as a program advisor from Mechanical Engineering.)

• Member, Safety Committee, Dept. of MEAM, 1996 - 1999

• Member, Executive Committee, Machine Tool - Agile Manufacturing Research Institute, July 1993 - 1999

(representing the University of Michigan)

• Faculty Recruitment Committee, MEAM, September 1998 – June 1999

• Faculty Mentor, undergraduate mentor program, 94/95, 95/96, 96/97, 97/98, 98/99

• Member, Promotion/Tenure Review Committee for Bill Endres, July 1999-November 1999

• Chair, Promotion Review Committee for Johann Borenstein to RS, September 1998 – February 1999

• Member, Promotion/Tenure Review Committee for Huei Peng, July 1998-November 1998

• Member, Reappointment Review Committee for Mehrdad Haghi, January 1995

• Member, Promotion/Tenure Review Committee for Rida Farouki, July 1997-November 1997

• Curriculum Committee, Member, Focus:HOPE, NSF Greenfield Coalition for Manufacturing Education, June 1993 - July 1995

(Representing the University of Michigan on Curriculum committee)

• MEAM Departmental Review Committee, Member, 1998 (meet weekly or twice a week for more than 6 months)

• Organizer, College of Engineering Manufacturing Seminar Series, July 1997 - June 1998 (host weekly one external seminar speaker)

• Laboratory Committee, Member, Dept. of MEAM, September 1994 - 1996

• Examiner, Ph.D. Qualifying Examinations (MEAM, IOE, and PIM)

- Systems and Control

- Manufacturing and Materials

- Time Series Analysis

**Administrative Duties at U of M**

• Dean, (August 2006 – present), UM-SJTU Joint Institute

• Director, (October 1992 – present), S. M. Wu Manufacturing Research Center

(The Wu Manufacturing Research Center has over 50 research staff and graduate students, and maintains an annual research funding of approximately $3 to 4 million dollars.)

• Co-Director, (July 2001 – present), National Science Foundation - Industry/University Cooperative Research Center for Intelligent Maintenance Systems (IMS)

(The IMS is a multi-campus NSF-I/UCRC established in July 2001 in partnership with the University of Wisconsin-Milwaukee and over 40 industrial members.)

• Deputy Director (2003- 2006) and Associate Director for Testbed, (August 1996 – 2002), National Science Foundation - Engineering Research Center for Reconfigurable Machining Systems

• Director, (July 1994 – September 1998), National Science Foundation - Industry/University Cooperative Research Center for Dimensional Measurement and Control in Manufacturing

(The NSF-I/UCRC had 8 industrial members with annual industrial membership fees of over $400,000. Faculty members from four different departments in the College of Engineering participated in the Center.)

**Service to Government Agencies and Professional Organization**

***Service to Government***

• Panel member, National Science Foundation, Research Initiation Grant review, March 1993

• Panel member, National Science Foundation, Division of Design and Integration Engineering, proposals review, December 1993

• Panel member, National Science Foundation, Division of Manufacturing Processes and Machinery, proposals review, March 1994

• Member, Mechanical Engineering Advisory Committee, MIRL/ITRI, Taiwan, to advise on MITL’s long term R&D plans, 1995 - 2011

• Advisory Panel, Ministry of Machinery Industry, China, April 1995

• Invited participant of National Academy of Engineers’ New Frontiers of Engineering, California, September, 1995

• Panel member, National Science Foundation, Division of Manufacturing Processes and Machinery, proposals review, November 1995

• Invited participant of National Academy of Engineers’ New Frontiers of Engineering, California, September, 1997

• Organizing Committee, National Academy of Engineers’ New Frontiers of Engineering, California, September, 1998

• Panel member, National Science Foundation, Division of Design, Manufacturing, and Industrial Innovation, Major Research Instrumentation panel, April, 1998

• Invited participants of an advisory panel, National Natural Science Foundation, China, August 1999

• Panel member, National Science Foundation, Division of Design, Manufacturing, and Industrial Innovation, CAREER panel, November 2001

• Panel member, National Science Foundation, Division of Design, Manufacturing, and Industrial Innovation, ERC pre-proposal panel, July 2002

• Invited participants of an advisory panel, Ministry of Science and Technology, China, December 2002

• Member of Advisory Group, Mid- to Long-term Planning of Science and Technology Strategies, Ministry of Science and Technology, China, November 2003

• Member of Advisory Group, MicroFactory Program, Korean Institute of Materials and Machinery, Korea, 2004-2010

• External Advisor, Advanced Production Roadmap, Department of Science and Technology, South Africa, 2007

• Member of Advisory Group, Michigan Economic Development Corporation, State of Michigan, 2012/2013

• Vice Chairman, Global Agenda Council on Advanced Manufacturing, World Economic Forum, Switzerland, 2010/2011, 2012/2014

• Panel member, National Science Foundation, Division of Civil, Mechanical and Industrial Innovation, Proposal Review, July 2013

• Panel member, National Science Foundation, Division of Civil, Mechanical and Industrial Innovation, CAREER Proposal Review, Sep 2013

***Service to Professional Organizations***

**(1) Editorial Functions**

• Associate Editor, Journal of Manufacturing Review, 2013 – present

• Co-Editors-in-Chief, International Journal of Precision Engineering and Manufacturing, 2014 – present

• Guest Co-Editor, Special Issue, International Journal of Innovative Computing, Information and Control, September 2006

• Guest Co-Editor, Special Issue, Advanced Engineering Infrotronics, November 2005

• Guest Co-Editor, Special Issue, Journal of Manufacturing Science and Engineering, ASME Transaction, November 2004

• Guest Co-Editor, Special Issue, International Journal of Manufacturing Technology and Management, September 2004

• Associate Editor, Journal of Manufacturing Systems, November 1994 – 2003

• Newsletter Editor, Manufacturing Engineering Division, ASME, November In1995- August 2000

• Member, International Editorial Board for the Book, “Coordinate Measuring Machines and Systems,” Marcel Dekker, 1995

• Member, Scientific Committee, "1995 NAMRI/SME Twenty-Third North American Manufacturing Research Conference," 1995

• Member, Scientific Committee, "1996 NAMRI/SME Twenty-Fourth North American Manufacturing Research Conference," 1996

• Member, Scientific Committee, “1997 NAMRI/SME Twenty-Fifth North American Manufacturing Research Conference," 1997

• Member, Scientific Committee, “1998 NAMRI/SME Twenty-Sixth North American Manufacturing Research Conference," 1998

• Reviewers for various technical journals and conferences including

- ASME Journal of Dynamic Systems, Measurement, and Control

- ASME Journal of Engineering for Industry

- International Journal of Machine Tools and Manufacturing

- International Journal of Production Research

- Journal of Manufacturing Systems

- Mechatronics

- ASME Winter Annual Meetings

- American Control Conference

- Transaction of North American Manufacturing Research Institution

- USA-Japan Symposium on Flexible Automation

- International Mechanical Engineering Congress

• Served as the Expert Opponent in a Doctoral Public Defense at the Royal Institute of Technology in Stockholm, Sweden, June 1991.

**(2) Conference Organization**

• Chair, “Wu Symposium on Manufacturing Competitiveness,” Detroit, Michigan, June 12, 2014

• Conference Vice-Chair, and Member, Program Committee, “11th International Conference on Frontiers of Design and Manufacturing,” and “The Eleventh S. M. Wu Symposium on Manufacturing Science,” Nanjing, China, May 2014

• Conference Vice-Chair, and Member, Program Committee, “10th International Conference on Frontiers of Design and Manufacturing,” and “The Tenth S. M. Wu Symposium on Manufacturing Science,” Chongqin, China, July 2012

• Conference Vice-Chair, and Member, Program Committee, “9th International Conference on Frontiers of Design and Manufacturing,” and “The Nineth S. M. Wu Symposium on Manufacturing Science,” Changsha, China, July 2010

• Member, International Advisory Committee, IPAS Conference Feb 14th-17th, 2010, France

* Oversea Advisor, 13th International Machine Tool Engineers’ Conference, Oct 31st and Nov 1st, 2008, Tokyo, Japan
* Conference Vice-Chair, and Member, Program Committee, “8th International Conference on Frontiers of Design and Manufacturing,” and “The Eighth S. M. Wu Symposium on Manufacturing Science,” Tianjin, China, Sep 2008

• Member, International Advisory Committee, IPAS Conference Feb 10th-13th, 2008, France

• Co-Chair, Automotive Innovation Forum, China, December 9-11, 2007

• Conference Co-Chair, inaugural ASME “International Manufacturing Science and Engineering Conference,” Ypsilanti, October 2006

• Conference Vice-Chair, and Member, Program Committee, “7th International Conference on Frontiers of Design and Manufacturing,” and “The Seventh S. M. Wu Symposium on Manufacturing Science,” Guangzhou, China, June 2006

• Conference Advisor, SME Micro Manufacturing Conference, Society of Manufacturing Engineers, May 2005

• Conference Vice-Chair, and Member, Program Committee, “6th International Conference on Frontiers of Design and Manufacturing,” and “The Sixth S. M. Wu Symposium on Manufacturing Science,” Xi’an, China, June 2004

• Conference Advisor, SME Micro Manufacturing Conference, Society of Manufacturing Engineers, May 2004

* Member, Organizing Committee, “7th International Conference on Manufacturing Technology,” Chiang Industrial Charity Foundation, December 2003

• Conference Advisor, SME Micro Manufacturing Conference, Society of Manufacturing Engineers, May 2003

• Program Executive, ASME Manufacturing Engineering Division, IMECE Programs, 2003

• Conference Co-Chair, “5th International Conference on Managing Innovative Manufacturing (MIM 2002)”, Wisconsin, September 2002

• Conference Vice-Chair, and Member, Program Committee, “5th International Conference on Frontiers of Design and Manufacturing,” and “The Fifth S. M. Wu Symposium on Manufacturing Science,” Dalian, China, July 2002

• Member, Organizing Committee, “6th International Conference on Manufacturing Technology,” Chiang Industrial Charity Foundation, December 2001

• Workshop Co-Chair, “NSF Workshop on Wireless Technologies in e-manufacturing and e-service ,” National Science Foundation, October 2001

• Chair, Scientific Committee, “1st CIRP International Conference on Agile and Reconfigurable Manufacturing,” the University of Michigan, May 2001

• Member, International Scientific Program Committee, “International Conference on Competitive Manufacturing,” Stellenbosch, S. Africa, January 2001

• Conference Vice-Chair, and Member, Program Committee, “4th International Conference on Frontiers of Design and Manufacturing,” and “The Fourth S. M. Wu Symposium on Manufacturing Science,” Zhejiang, China, June 2000

• Member, International Program Committee, “International Conference on Advanced Manufacturing Systems and Manufacturing Automation,” Guangzhou, P. R. China, June 2000

• Member, International Organizing Committee, “7th Mechatronics Forum – International Conference,” Atlanta, GA, September 2000

• Member, Organizing Committee, “5th International Conference on Manufacturing Technology,” Chiang Industrial Charity Foundation, October 1999

• Co-Chair, Organizing/Program Committee, “International Conference on Advanced Manufacturing Technology (ICAMT’99),” Xi’an, P. R. China, June 1999

• Co-Chair, Organizing Committee, “1999 US-China Advanced Machine Tool Research Workshop,” University of Southern California, January 1999

• Member, Organizing Committee, “1998 National Academy of Engineering - Frontiers of Engineering Symposium”, 1997/1998

• Member, Steering Committee and, Co-Chairman, Program Committee, “Design and Manufacturing Grantee Conference of National Natural Science Foundation of China” and “The Third S. M. Wu Symposium on Manufacturing Science,” Wuhan, China, June 1998

• Co-organizer, Session on “Engineering Research Centers,” National Manufacturing Week, March, 1998, Chicago, IL.

• Co-Chairmen, “97 US-China Automotive Component and Equipment Suppliers Conference,” Detroit, MI, 1997

• Member, International Program Committee, "1996 USA-Japan Symposium on Flexible Automation", Sponsored by ASME, MED, 1996

• Chairman, Program Committee, joint “International Workshop on Automotive Manufacturing Science and Technology” and “The Second S. M. Wu Symposium on Manufacturing Science: Far East Program”, Shanghai, China June 1996

• Chairman, Organizing Committee, The Second S. M. Wu Symposium on Manufacturing Science: U.S. Program, Ann Arbor, MI, May 1996

• Co-Organizer, Session on “Modern Computer-aided Maintenance and Diagnosis in Manufacturing,” International Mechanical Engineer Congress (IMEC), 1996

• Member, Organizing Committee, 1996 North American Manufacturing Research Conference, Ann Arbor, MI

• Member, International Program Committee and Advisors, "1995 International Conference on Intelligent, Knowledge and Integration for Manufacturing", at Southwestern University, Nanjing, China, 1995

• Member, Organizing Committee, 27th CIRP International Seminar on Manufacturing Systems, Ann Arbor, MI, 1995

• Organizer, sessions at Second Spring Research Conference on Statistics in Industry and Technology, jointly sponsored by American Statistical Association and American Society of Mechanical Engineers, June 1995

“Manufacturing Process and System Monitoring and Diagnosis”, and

“Control of Manufacturing Processes and Systems”

• Chairman, Organizing Committee, First S. M. Wu Symposium for Manufacturing Sciences - Far East venue, Beijing, China, Sponsored by ASME, PED, 1994

• Member, Organizing Committee, First S. M. Wu Symposium for Manufacturing Sciences - US venue, at Northwestern University, Sponsored by Society of Manufacturing Engineers, 1994

• Co-organizer and session chair, First Annual Stamping and Body-in-White Conference, April 1994, Troy, MI

• Co-organizer, Agile Manufacturing Research Institute Workshop on Machine Tool Technology, April 1994, Ann Arbor, MI

• Session co-chairman for a number of technical conferences

- "Sensors, Controls, and Quality Issues in Manufacturing", 1991 ASME winter annual meeting, Atlanta, GA

- "Sensors, and Signal Processing for Manufacturing", 1992 ASME winter annual meeting, Anaheim, CA

- "Manufacturing Science and Engineering", 1993 ASME winter annual meeting, New Orleans, LA

- 1994 North American Manufacturing Research Conference, Evanston, IL

- 1995 North American Manufacturing Research Conference, Houghton, MI

**(3) Professional Society Committee**

• Vice Chair, Global Agenda Council on Advanced Manufacturing, World Economic Forum, 2011/2012, 2012/2014

• Invited Participant, Future of Manufacturing Roundtable, Ditchley Foundation, London, UK, January 2014

• Invited Participant, Global Agenda Council Summit, Abu Dhabi, UAE, November 2013

• Invited Participant, Strategic Shifts in Manufacturing Ecosystem Session, World Economic Forum Summer Davos Meeting, Dalian, China, September 2013

• Invited Participant, Advanced Manufacturing Roundtable, World Economic Forum, Tokyo, Japan, May 2013

• Invited Participant, Global Agenda Council Summit, Dubai, UAE, November 2012

• Invited Participant, Advanced Manufacturing Roundtable, World Economic Forum, Berlin, Germany, October 2012

• Invited Participant, World Economic Forum General Meeting, Davos, Switzerland, January 2012

• Invited Member, Task Force on Future of Manufacturing, World Economic Forum, 2010/2011

• Invited Participant, Global Agenda Council Summit, Abu Dhabi, UAE, October 2011

• Invited Participant, World Economic Forum General Meeting, Davos, Switzerland, January 2011

• Invited Participant, Advanced Manufacturing Session, World Economic Forum Summer Davos Meeting, Tianjin, China, September 2010

• Chair, ASME, Manufacturing Engineering Division, 2003/2004

• Member, Executive Committee, ASME, Manufacturing Engineering Division, 9/1/2000 – 8/31/2005

• Memeber, Technical Planning Committee, ASME Manufacturing Technical Group, 7/1/1997 - 6/30/2000

**Service to Community**

• Invited by Messrs. Robert Eaton and Dennis Pawley (Chairman/CEO and Exe. VP for Mfg. of Chrysler Corporation, respectively) to give a technical presentation to top 40 Chrysler executives, January 1994

• Volunteered for four years to help Focus:HOPE’s Center for Advanced Technology on various activities, including:  
- organizing a graduate student volunteer team every semester to tutor Focus:HOPE’s CAT candidates on their science courses;  
- implementing an advanced error compensation research system at Focus:HOPE’s CAT facility to demonstrate to their student candidates how advanced research can impact manufacturing;  
- helping CAT’s candidates and engineers to address their technical problems related to machining applications; and  
- offering a series of seminars to CAT’s candidates and engineers.

**Consulting Arrangements**

I have worked closely with the following industrial companies and other organizations on contract research projects:

- Auto Body Consortium

- Automated Precision, Inc.

- Boeing

- BaoSteel

- China Space Science Corporation

- China State Shipbuilding Corporation

- Chrysler Corporation

- CBMM, Brazil

- Coherix, Inc.

- Electro Scientific Industries

- Focus:HOPE

- Ford Motor Company

- General Motors Corporation

- General Electric

- Giddings & Lewis Measurement Systems

- Greenfield Industries

- Honda Motor Company

- Medar, Inc.

- Modern Engineering

- National Center for Manufacturing Sciences

- Perceptron, Inc.

- Pratt-Whitney

- Progressive Tools & Industries, Inc. (PICO)

- Saginaw Machine Systems

- Sanyi

- Semitech,

- Samsung Electro-Mechanical Corporation

- Softbank China Venture Capital

- Tarus Products, Inc.

- Tecumseh Products Company

**OTHER**

**Collaborative Activities with Other Faculty and Institutions**

Professor Ni has had collaborative activities with the following faculty and institutions:

1. Professor Y. Koren, Dept. of Mech. Engr., University of Michigan
2. Professor S. J. Hu, Dept. of Mech. Engr., University of Michigan
3. Professor A. Shih, Dept. of Mech. Engr., Univ. of Michigan
4. Professor A. G. Ulsoy, Dept. of Mech. Engr., University of Michigan
5. Professor R. E. DeVor, Dept. of Indust & Mech. Engr., Univ. of Illinois-Urbana-Champaign
6. Professor S. Kapoor, Dept. of Indust & Mech. Engr., Univ. of Illinois-Urbana-Champaign
7. Professor K. Ehmann, Dept. of Mech. Engr., Northwestern University
8. Professor Jay Lee, Dept. of Industrial and Systems Engineering, Univ. of Cincinnati
9. Professor Werner Dahm, Dept. of Aerospace Engineering, Univ. of Michigan
10. Professor Levi Thomson, Dept. of Chemical Engineering, Univ. of Michigan
11. Professor E. Gulari, Dept.of Chemical Engineering, Univ. of Michigan
12. Professor J. Schwank, Dept. of Chemical Engineering, Univ. of Michigan
13. Professor Zhaoying Zhou, Dept. of Precision Instrumentation, Tsinghua Univ., China
14. Professor Zhongqing Lin, School of Mech. Engr., Shanghai Jiaotong University, China
15. Professor Seliger, Dept. of Assembly, Technical University of Berlin, Germany
16. Professor Z. Katz, Rand Afrikaans University, South Africa

**Invited Talks, Seminars, Keynote Speeches and Presentations**

1. "Monitoring, Diagnosis, and Adaptive Control of Machine Tools," (with Drs. S. Spiewak and Y. B. Chen), short course offered at General Motors Technical Center, Feb. — May, 1987
2. "Precision Machining without Ultra-Precision Machinery," invited talk given for NSF Young Faculty Improvement Program, UM-Dearborn, 1988
3. "Identification of Machine Volumetric Accuracy for the Die Manufacturing Cell," invited talk at the annual review meeting of the coorperative research between The University of Michigan and General Motors Technical Center, 1989
4. "Advanced Compensation Techniques for Enhancing Machine-Tool Accuracy," Advanced Technology Program, National Institute of Standards and Technology, February 1991
5. "Machine Thermal Volumetric Error Compensation on a Machining Center", Seminar given at The Royal Institute of Technology, Stockholm, Sweden, May 27, 1991
6. "Development of a Multi-degree-of-freedom Laser Measurement System", Seminar given at The Royal Institute of Technology, Stockholm, Sweden, May 28, 1991
7. "Enhancement of CMM Performance by On-line Measurement & Compensation", invited talk given for Precision Metrology with Coordinate Measurement Systems Clinic sponsored by SME, June 11-13, 1991
8. "Real-time Compensation of Time-Variant Volumetric Errors on a Machining Center", invited talk at Rock Island Arsenal, October 17, 1991
9. "Thermal Error Compensation Research", invited talk at the annual Precision Machining & Forming Review jointly sponsored by the Tri-Service Task Force and National Institute of Standards and Technology (NIST), October 23, 1991
10. "Advanced research for high precision and high productivity machining", invited presentation at General Motors Technical Center, sponsored by Natioanl Center for Manufacturing Sciences, December 11, 1991
11. "Development of Advanced Compensation Techniques for Enhancing CMM Performance," U.S. Air Force End-of-Contract Review, September 9, 1992
12. "Advanced Compensation Techniques for Machine Tools and CMMs," invited talk at Naval Surface Warfare Center, Crane Division, October 8, 1992
13. "Development of an Adaptive Compensation Technique for Enhancing CMM Accuracy," Advanced Technology Program, National Institute of Standards and Technology, November 1992
14. "Adaptive Compensation and Control Techniques for Quasi-static and Dynamic Errors of CMMs", faculty interview seminar at The University of Michigan, December 9, 1992.
15. "Manufacturing Research," Seminar sponsored by Society of Manufacturing Engineers, UoM Chapter, 1993
16. Panel presentation at Joint USA-Taiwan Symposium on Advanced Manufacturing Technology, Georgia Institute of Technology, February 1993
17. "Error Compensation Techniques and Optical Measurement Methods," Seminar given at Technical University of Berlin, July 1993
18. "Error Compensation Techniques and Optical Measurement Methods," Seminar given at Fraunhofer-Institute of Production Technology (IPT) in Aachen, Germany, July 1993
19. "Advanced Automobile Body Design and Manufacturing," Invited panel presentation at 1994 National Science Foundation, Design and Manufacturing Systems Grantees Conference, MIT, January 1994
20. "Variation reduction for Automotive Assembly Process", invited presentation to Mr. Bob Eaton (Chairman and CEO of Chrysler) and his top 35 Executives, Chrysler Corporation, January 1994
21. "Precision machining research," seminar at Tianjing University, Tianjing, China, July 1994
22. "Coordinate measurement techniques," seminar at Shanghai Jiaotong University, Shanghai, China, July 1994
23. "Machine Performance Enhancement," invited presentation at Advanced Machining Systems for 21st Century Workshop, National Center for Manufacturing Sciences, September 1994
24. "Application of Software-based Error Compensation Techniques," invited talk at Boeing Commercial Airplane Company, Wichitta, November, 1994
25. "Process Improvement via Thermal Error Compensation," invited talk at General Motors Powertrain - Windsor Division, December, 1994
26. “Issues in Precision Engineering Research and Education,” invited seminar in honor of the receipt of the Presidential Faculty Fellow Award, by Department of Mechanical Engineering and Applied Mechanics, and Program in Manufacturing, The University of Michigan, December, 1994
27. "Computer Enhanced Machine Accuracy for CNC Machine Tools and Coordinate Measuring Machines -- Current Status and Related Issues," invited talk given to ITRI - MIRL, Taiwan, December, 1994
28. "Mechatronics, Its Education and Research," invited keynote speech at Ministry of Education Workshop on Mechatronics, National Taiwan University, Taiwan, December, 1994
29. "Issues in Industry/University Cooperative Research," seminar at National Tamkang University, Taiwan, December 1994
30. "A Model in Industry/University Cooperative Research," invited speech at National Science Foundation Industry/University Cooperative Research Center Directors Annual Meeting, January 1995
31. "Real-Time Error Compensation for Large Machines," invited speech at an exploratory workshop, National Center for Manufacturing Sciences, January 1995
32. “Advanced Drill Research,” invited talk at Machine Tool - Agile Manufacturing Research Institute workshop, Northwestern University, Illinois, March 1995
33. “Current Status and Future Development Trend of Automotive Manufacturing,” keynote speech as one of seven foreign experts to help developing the 9th five-year plan for the People’s Republic of China (meetings with the Minister of Machinery Industry, and the Minister of State Science and Technology Commission, PRC), Beijing, April 1995
34. “Establishment of Academic Programs for Manufacturing Sciences and Engineering,” meeting with Deputy Minister, State Education Commission, PRC, Beijing, April 1995
35. “The Importance of Advanced Manufacturing Technology,” meeting with Vice Premier of the People’s Republic of China, Beijing, April 1995 “Industry/University Cooperative Research,” invited seminar given to the National Natural Science Foundation of China, at Tsinghua University, Beijing, April 1995
36. “Precision Engineering Research,” invited speech given to Research Insitute of Machinery Science and Technology, Ministry of Machinery Industry, Beijing, April 1995
37. “Advanced Manufacturing Technologies as Applied to Automotive Manufacturing,” invited seminar given to Shanghai Jiao Tong University, Shanghai, May 1995
38. “Variation Reduction in Automotive Body Assembly: ‘2 mm Program’”, invited panel speaker at the First Automotive Metrology World Congress, Turin, Italy, May 1995
39. “Manufacturing Research and Education,” invited speech at a joint workshop organized by the Technical University of Berlin, Warsaw Technical University, and the University of Michigan, Berlin, Germany, May 1995
40. “Error Compensation Techniques for Precision Machining,” invited seminar at Warsaw Technical University, Warsaw, Poland, May 1995
41. “Development of Intelligent Work Units for Automotive Powertrain Component Machining,” Advanced Technology Program, National Institute of Standards and Technology, June 1995
42. “Recent Research Progress in Machine Accuracy Enhancement,” invited seminar at Boeing Commercial Airplane Company, Seattle, Washington, August 1995
43. “Research on Automotive Manufacturing,” invited talk in the 1995 annual meeting of Association of Chinese Scientists and Engineers, USA.
44. “Laser Measurements for Machine Performance Improvement,” invited presentation, Laser Gaging Methods and Technologies Conference, Society of Manufacturing Engineers, December 1995
45. “Variation Reduction in Automotive Manufacturing,” invited presentation, First Auto Works, Changchun, China, December 1995
46. “Precision Engineering Research,” invited seminar at Tsinghua University, Beijing, China, December 1995
47. “Quality Control of Automotive Body Assembly Processes,” invited talk at First Auto Works, Changchun, China, December 1995
48. “Dimensional Measurement and Control in Manufacturing,” invited seminar at Jilin University of Technology, Changchun, China, December 1995
49. “Real-Time Thermal Error Compensation Research,” invited seminar at UCLA, March, 1996
50. “Dynamic Cutting Force Induced Error Compensation Research,” invited presentation, Precision Machine Tool Technology Workshop, sponsored by Defence Advanced Research Project Agency, May, 1996
51. “Precision Engineering Research,” invited seminar at Kobe University, Japan, June 1996
52. “Recent Advances in Error Compensation Research,” invited seminar at Changsha University of Science and Technology, China, June 1996
53. “Challenges and Opportunities in Manufacturing Research and Education,” invited keynote speech at International Workshop on Automotive Manufacturing Technology, Shanghai Jiaotong University, China, June 1996
54. “Implementation of Real-Time Error Compensation in an Automotive Production Environment,” invited presentation at General Motors Powertrain Headquarters, July 1996
55. “Research on Drills, Chatter Suppression, and Real-Time Error Compensation,” invited presentation at the First Corporate Manufacturing Engineering Managers Seminar, Tecumseh Products Company, September 1996
56. “Machining chatter suppression,” invited presentation, Defense Logistics Agency, November, 1996
57. “Advanced Manufacturing Research for Automotive Applications,” invited keynote speech at CAST annual convention, New Jersey, December, 1996
58. “Precision Manufacturing Research,” invited seminar at the University of Michigan-Dearborn, April, 1997.
59. “Research on Integrated Drill Design and Manufacturing,” invited presentation at General Motors Powertrain Headquarters, April, 1997
60. “Metrology Research in Manufacturing,” invited seminar at Shanghai Jiaotong University, China, May 1997
61. “Variation Reduction Methodology for Automotive Body Manufacturing,” invited presentation, Changan Automobile Company, China, June 1997
62. “Advanced Machine Tool Research,” invited presentation, Jinan First Machine Tool Company, China, June 1997
63. “Recent Trend in Advanced Manufacturing Research,” invited talk at Chongqing University, China, June 1997
64. “Machine Tool Error Compensation Research,” invited presentation, Cincinnati Milacron, Ohio, August 1997
65. “Precision Machine Tool Research,” invited seminar at National Taiwan University, Taiwan, November 1997
66. “Machine Tool Performance Enhancement through Error Compensation Methods,” invited keynote speech at International Conference on Precision Engineering, Taipei, Taiwan, November 1997
67. “Importance of Control Manufacturing Process Variations,” invited presentation, Ministry of Machinery Industry, PRC, October, 1997
68. “Error compensation research,” invited seminar at Tsinghua University, June 1998
69. “Case Studies: Machine Performance Improvement by Error Compensation Research,” invited presentation, DaimlerChrysler, August 1998
70. “Future Trend & Challenges in Manufacturing Research,” invited seminar at Shanghai Jiao Tong University, March 1999
71. “Automotive Manufacturing Quality,” invited presentation, Shanghai-Wolkswagon, Shanghai, April 1999
72. “Advanced Machine Tool Research,” invited seminar at Seoul National University, S. Korea, June 1999
73. “Real-time Active Balancing for High-Speed Rotating Machinery,” invited seminar at Korean Advanced Insitute of Science and Technology (KAIST), S. Korea, June 1999
74. “Industry-University Collaborative Research Experience,” invited seminar at Yeungnam University, S. Korea, June 1999
75. “Manufacturing Research at WuMRC,” invited seminar at Dalian University of Technology, China, June 1999
76. “Advanced Manufacturing Technology,” invited short course lecturer at Tsinghua University, China, August 16-20, 1999
77. “Some Current and Emerging Initiatives in Advanced Manufacturing Research,” invited presentation, National Natural Science Foundation of China, Beijing, August 23-25, 1999
78. “High Throughput Holing Making,” invited presentation, Ford World-wide Machining Forum, September 1999
79. “Advanced Automotive Manufacturing Technologies,” invited presentation, Dongfeng Motors Company, December 1999
80. “Structural Vibration Control in Manufacturing,” invited seminar at Tsinghua University, China, December 13, 1999
81. “Research Thrusts and Industrial Relevance,” invited seminar at Rand Afrikaans University (RAU), South Africa, February 28, 2000
82. “Drill Optimization,” invited presentation, DaimlerChrysler Mack Avenue Engine Plant, February 7, 2000
83. “Advanced Drilling Process Research,” invited presentation, Delphi Automotive Corporate R&D Center, Warren, February 11, 2000
84. “Advanced Powertrain Machining Research,” invited presentation, Ford Advanced Manufacturing Technology Development (AMTD), February 15, 2000
85. “Manufacturing Research at WuMRC,” invited seminar at the University of Natal, South Africa, March 1, 2000
86. “Research on High-Throughput Drilling,” invited seminar at the University of Stellenbosch, South Africa, March 3, 2000
87. “Deep Hole Drilling Research,” invited presentation, Delphi Automotive Systems, Dayton Manufacturing R&D Center, March 27, 2000
88. “Drilling Process Design and Optimization,” invited presentation, DaimlerChrysler Trenton Engine Plant, April 3, 2000
89. “Recommendations for Chinese Automotive Manufacturing Strategy,” invited presentation, Chinese Academy of Engineering, Beijing, April 11-12, 2000
90. “Optimal Drill Design for Small Deep Hole Applications,” invited presentation, Delphi Automotive Systems, Dayton Manufacturing R&D Center, October 2000
91. “Meso-scale Machining,” invited seminar at National Taiwan University, Taiwan, December 3, 2000
92. “Meso-scale Machining,” invited seminar at Industrial Technology Research Institute (ITRI/MIRL), Taiwan, December 7, 2000
93. “Research on Precision Machine Tools,” invited seminar at National Cheungkong University, Taiwan, December 8, 2000
94. “New Mechanical Engineering Curriculum,” invited seminar at Hong Kong Polytechnic University, January 2001
95. “Robust Product Design Techniques,” invited presentation, Chiaphua, Hong Kong, May 2, 2001
96. “Control of Process Variations in Automotive Manufacturing,” invited presentation, Hong Kong Productivity Council, May 8, 2001
97. “Pushing the Limits of Manufacturing by Transforming It from Art to Science,” invited keynote speech at 17th International Conference on CAD/CAM, Robotics, and Factories of the Future, Durban, South Africa, July 2001
98. “Research Progress in Intelligent Maintenance Systems,” invited presentation, Toshiba, December 14, 2001
99. “NSF-I/UCR Center for Intelligent Maintenance Systems,” invited presentation, GE Medical (Japan), December 14, 2001
100. “Advanced Machining Research: From High-Throughput to Micro/Meso Scale Machining,” invited seminar at Worest Polytechnic Institute, September 26, 2002
101. “Research Progress in Intelligent Maintenance Systems,” invited presentation, Intel, February 27, 2002
102. “NSF-I/UCR Center for Intelligent Maintenance Systems,” invited presentation, DaimlerChrysler, March 1, 2002
103. “High-Throughput and Micro/Meso Scale Manufacturing,” invited departmental seminar, Mechanical Engineering, the University of Michigan, September 27, 2002
104. “Recent Advances in Machining Research,” invited seminar at Hong Kong University of Science and Technology, December 11, 2002
105. “Manufacturing Research at WuMRC,” invited presentation, Honda, Japan, December 12, 2002
106. “NSF-I/UCR Center for Intelligent Maintenance Systems,” invited presentation, Hitachi, Japan, December 13, 2002
107. “Meso-scale Manufacturing,” invited seminar at Chinese University of Hong Kong, December 18, 2002
108. Distinguished Lecture on Manufacturing Sciences, Shanghai Jiao Tong University, December 20, 2002
109. “Fundamental Manufacturing Research and Its Role in Chinese Science & Technology Development,” invited presentation, Ministry of Science and Technology, China, Beijing, December 26, 2002
110. “NSF-I/UCR Center for Intelligent Maintenance Systems,” invited presentation, Ford, January 14, 2003
111. “Challenges in Manufacturing Research,” invited presentation, at the International Conference on China’s Science and Technology 2020, Ministry of Science and Technology, China, Beijing, November 13-14, 2003
112. “Micro/Meso-Scale Manufacturing,” invited seminar, Industrial Technology Research Institute (ITRI), Taiwan, December 2, 2003
113. “Advanced Machine Tool Research,” invited seminar, Precision Machinery Research and Development Center (PMC), Taiwan, December 3, 2003
114. “Micro/Meso-scale Manufacturing,” invited keynote speech, 7th International Conference on Mechatronics Technology, Taipei, December 4, 2003
115. “Micro/Meso-scale Manufacturing,” invited plenary speech, 6th International Conference on Manufacturing Technology, Hong Kong, December 8, 2003
116. “Some Recent Advancement in Micro/Meso-scale Manufacturing,” invited technical presentation, CIRP STC “M” Meeting, Paris, January 29, 2004
117. “State of the Art in Micro Manufacturing,” invited keynote speech, COMA’04, Stellenbosch, South Africa, February 4, 2004
118. “Advanced Drilling and Gundrilling Research,” invited seminar, Cummins Engine Company, February 19, 2004
119. “Future Manufacturing Research Challenge,” invited presentation, Sino-American Technology and Engineering Conference, Beijing, April 2004
120. “Micro Manufacturing Research,” invited keynote presentation, Chinese Academy of Mechanical Sciences, Beijing, April 2004
121. “Challenges in High Throughput Drilling,” invited presentation, NATO Advanced Research Workshop on Superhard Materials and Sustainable Coating, Kiev, Ukraine, May 2004
122. “Future of Micromachining Technology,” invited presentation, SME Micro Manufacturing Conference, Springfield, MA, May 2004
123. “Meso-scale Manufacturing,” invited presentation, 6th International Conference on Frontiers of Design and Manufacturing, Xi’an, China, June 2004
124. “Intelligent Maintenance Systems,” invited presentation at the e-Manufacturing Panel, Japan-USA Symposium on Flexible Automation, Denver, July 19, 2004
125. “Advances in Manufacturing Research,” invited presentation, GE Aircraft Engines, August 24, 2004
126. “Prognostic Method for Semiconductor Fab,” presentation at Semiconductor Research Corporation, Austin, TX, Oct. 25, 2004
127. “Manufacturing in China,” invited presentation, at the international conference on understanding global outsourcing, New York University, December 10, 2004
128. “Reconfigurable Micro-Factory Research,” invited presentation, Korea Institute of Machinery and Materials, February 21, 2005
129. “Decision Support Tools for Intelligent Maintenance Systems,” invited presentation at the workshop on Maximising Uptime for Mission-Critical Manufacturing and Service Systems, Singapore Institute of Manufacturing Technology (SIMTech), February 24, 2005
130. “Advanced Machining Research,” invited seminar at Illinois Institute of Technology, April 20, 2005
131. “Micro Machining Research,” invited presentation at SME Micro Manufacturing Conference, May 3, 2005
132. “Performance Evaluation in Micro Factory,” invited keynote presentation at First International Workshop on Micro Factory, Jeju Island, Korea, July 15, 2005
133. “Current Status and Challenges for China’s Automotive and Manufacturing Industry,” invited keynote presentation at Management Briefing Seminars, Traverse City, Michigan, August 5, 2005
134. “Advanced Machining Research,” invited presentation at University Strategic Alliance annual conference, GE Aircraft Engine, August 29, 2005
135. “Manufacturing in China,” invited seminar, Coherix, September 15, 2005
136. “Some Recent Emerging Areas in Advanced Manufacturing,” invited keynote presentation at International Conference on Mechanical Engineering and Mechanics, Nanjing, China, October 26, 2005
137. “Globalization and Its Impact on Manufacturing Industry,” invited presentation at Crankbrook Academy, February 2006
138. “Micro/Meso-Scale Manufacturing Challenges,” invited keynote presentation at International Precision Assembly Systems Conference, Austria, February 20-22, 2006
139. “Manufacturing Research and Development in China,” invited presentation at Association of Manufacturing Technology annual meeting, Fort Lauderdale, FL, April 28, 2006
140. “Intelligent Maintenance Research,” invited presentation at US-South Africa Workshop on Manufacturing, May 7-8, 2006
141. “Reconfigurable Systems and Machines,” invited keynote presentation at International Workshop on Reconfigurable Manufacturing and Parallel Kinematic Machines, Tianjin, China, June 18, 2006
142. “Micro/Meso Scale Manufacturing and Its Applications,” invited presentation at International Conferences on Frontiers of Design and Manufacturing, Guangzhou, China, June 21, 2006
143. “Concept of Gripper Design for Microassembly and Some Recent Micromanufacturing Research,” invited presentation at Second International Workshop on Micro Factory, Jeju Island, Korea, July 7, 2006
144. “Advanced Machining Research,” invited presentation at General Electrical Aviation, Cincinnati, OH, August 18, 2006
145. “Manufacturing Science and its Impact,” Shien-Ming (Sam) Wu Collegiate Professor Lecture, College of Engineering, The University of Michigan, Oct 5, 2006
146. “Process Modeling and Its Role in Digital Manufacturing,” invited presentation at Wuhan, Oct 15, 2006
147. “High Performance Machining Research,” invited presentation at Sino-USA Engineering Technology Symposium, Shenyang, Oct. 17, 2006
148. “Micro/meso scale manufacturing research,” invited plenary presentation at International Forum of Manufacturing Leadership, Taipei, Oct. 23, 2006
149. “Intelligent Maintenance Systems Research,” invited presentation at Colloquium on Sustainable Manufacturing, Technical University of Berlin, January 29, 2007
150. “Smart Diagnostics and Prognostics,” invited presentation at Cranfield University, UK, January 31, 2007
151. “Manufacturing Research,” invited seminar at University of Manchester, UK, Feb 1, 2007
152. “High Performance Machining Research and Its Applications to Aerospace Industry,” invited keynote presentation at BAMTRI 50th Anniversary Conference, Beijing, China, June 25, 2007
153. “Micro/meso scale manufacturing,” invited seminar at Wuhan University of Science and Engineering, Wuhan, China, June 29, 2007
154. “High Performance Machining Research,” invited presentation at Machine Tool Technology Research Foundation 2007 Annual Meeting, Nagono, Japan, July 11, 2007
155. “Fuel Cell Manufacturing Research,” invited presentation at Korean Institute of Technology, Seoul, August 24, 2007
156. “Micro/meso-scale Manufacturing Process Development,” invited presentation at MicroFactory Workshop, Jeju Island, Korea, August 22, 2007
157. “Focus on China – from the Eyes of an Engineering Professor,” invited presentation at Ford Scientific Lab, Dearborn, February 5, 2008
158. “Maintenance Decision Support Tools,” invited presentation at Omron, Japan, February 13, 2008
159. “Intelligent Maintenance Systems Research,” invited presentation at Toshiba, Tokyo, February 18, 2008
160. “Global Engineering Education,” invited presentation at Tokyo University of Agriculture and Technology, February 15, 2008
161. “Micro/Meso-Scale Manufacturing Research and Applications,” Seminar at Brunel University, London, UK, February 25, 2008
162. “Manufacturing R&D in China,” invited talk at AMT-NCMS Annual Technology Forum, Florida, March 6, 2008
163. “Manufacturing Innovations and Applications,” Seminar at Georgia Institute of Technology, Atlanta, April 1, 2008
164. “China’s Automotive and Manufacturing R&D Strategies,” invited talk at University of Michigan Automotive Conference, Ann Arbor, April 8, 2008
165. “Learning Outcome-based Engineering Curriculum Reform,” seminar at Guangdong University of Technology, Guangzhou, April 18, 2008
166. “Manufacturing Innovations and Applications,” seminar at Guangdong University of Technology, Guangzhou, April 18, 2008
167. “Manufacturing Research for Aviation Applications,” invited talk at GE Aviation, USA Program Annual Meeting, May 13, 2008
168. “Advanced Manufacturing Technologies and Its Applications,” invited talk at China Aerospace Science and Technology Corporation, June 6, 2008
169. “Learning-Outcome Based Curriculum Reform – Michigan Experience,” invited talk at Hong Kong Polytechnic University, June 11, 2008
170. “Micro and Meso-scale Manufacturing Research,” keynote speech, 8th Asia-Pacific Conference on Materials Processing, Guilin, China, June 16, 2008
171. “Global Engineering Education,” invited talk at Shenyang University of Construction Technology, Shenyang, China, June 18, 2008
172. “Comparative Analysis of US and China Manufacturing Industries,” invited talk at the 2008 Summit of China-US Advanced Manufacturing Technology, Shanghai, China, September 20, 2008
173. “Advanced Manufacturing Technologies,” invited presentation at Ford Motor Company, Dearborn, MI, October 10, 2008
174. “International Research Collaboration for Intelligent Maintenance Systems,” invited presentation at 3rd World Congress on Engineering Asset Management, Beijing, October 29, 2008
175. “Manufacturing Innovations and Their Impacts,” invited seminar at GE Global R&D, NY, November 24, 2008
176. “Manufacturing Innovations and the Impacts,” invited presentation at Ping-Ding Shan Mining Group, Henan, China, February 12, 2009
177. “Manufacturing R&D Activities,” invited presentation at GE R&D Shanghai, March 18, 2009
178. “Manufacturing Innovations and Their Impacts,” invited presentation at Air Force WPAFB, Dayton, OH, April 2, 2009
179. “Learning-Outcome Oriented ME Curriculum,” invited seminar at Yangzhou University, Yangzhou, China, May 28, 2009
180. “ME Curriculum Innovations and Comparison of US-China Higher Education,” invited seminar at Xi’an Jiao Tong University, Xi’an, China, May 29, 2009
181. “ME Curriculum Innovations and Comparison of US-China Higher Education,” invited seminar at Huazhong University of Science and Technology, Wuhan, China, May 30, 2009
182. “ME Curriculum Innovations and Comparison of US-China Higher Education,” invited seminar at Shanghai Jiao Tong University, Shaghai, China, June 1, 2009
183. “Machining Process Optimization and Intelligent Maintenance Systems,” invited presentation at BAE Systems, York, PA, June 8, 2009
184. “Research on Micro and Meso-Scale Manufacturing Processes,” invited keynote presentation at the 1st International Workshop on Micro and Convergence Manufacturing, Jeju Island, Korea, June 17, 2009
185. “International Alliance on Higher Education,” invited seminar at Yangsei University, Seoul, Korea, June 19, 2009
186. “Design of Optimal Maintenance Operations,” invited keynote presentation at the ASME/IFToMM International Conference on Reconfigurable Mechanisms, University of London, UK, June 23, 2009
187. “Bridging the Gap between Macro and Micro Manufacturing Technologies,” invited presentation at the AC21 3rd World Students Forum, Chemnitz University of Technology, Dresden, Germany, June 25, 2009
188. “Modeling and Analysis of Microgrinding of Ceramics,” invited presentation at the 4th Micro-Factory Workshop, Jeju Island, Korea, August 20, 2009
189. “Recent Advancement in Manufacturing R&D,” invited presentation, Industrial Technology Research Institute, Taiwan, August 22, 2009
190. “Intelligent Maintenance Systems,” invited presentation at Eaton, Michigan, September 20, 2009
191. “Innovations and Engineering Higher Education,” invited panel presentation, Chiao-Tung/Jiao Tong Universities Summit, Chengdu, China, Oct. 16, 2009
192. “Recent Advances in Manufacturing Research,” invited seminar at Tongji University, China, Oct. 14, 2009
193. “Advanced Manufacturing Research and Future Trends,” invited presentation at GE Aviation, Cincinnati, Ohio, Oct. 19, 2009
194. “Manufacturing Innovations and Their Impacts,” invited presentation at GM R&D Center, Warren, Michigan, Oct. 24, 3009
195. “High Definition Metrology Enabled Precision Machining Systems – 2 Micron Program,” keynote presentation at International Symposium on Precision Engineering and Nanometrology, Hangzhou, China, October 29, 2009
196. “Predictive Modeling for Intelligent Maintenance in Complex Semiconductor Manufacturing Process,” invited presentation at AEC/APC Symposia Asia, Tokyo, Japan, November 9, 2009
197. “Personalized Production Systems,” invited keynote presentation at European Union’s ManuFuture 2009 Conference, Gothenburg, Sweden, Nov 30, 2009
198. “Comparison of Engineering Education in US and China,” invited presentation at Southern China University of Technology, Guangzhou, China, Dec. 7, 2009
199. “Comparison of Innovation and Engineering Education Systems in US and China,” invited presentation at Shanghai Jiao Tong University, China, Jan 6, 2010
200. “Personalized Production Systems,” invited presentation at Competitive Manufacturing 2010 (COMA’10), Stellenbosch, South Africa, Feb 5, 2010
201. “Recent Advances in Micro/Meso Scale Manufacturing Research,” invited keynote presentation at Competitive Manufacturing 2010 (COMA’10), Stellenbosch, South Africa, Feb 5, 2010
202. “Manufacturing R&D in China,” invited keynote presentation at Association of Manufacturing Technology (AMT) and National Center for Manufacturing Sciences (NCMS) joint annual meeting, Nashville, TN, March 28, 2010
203. “Clean Vehicle Research at the University of Michigan,” Global Automotive Leaders Summit, Beijing Auto Show, Beijing, China, April 28, 2010
204. “Recent Development in Green Manufacturing Strategies,” invited presentation at Industrial Technology Research Institute, Taiwan, May 27, 2010
205. “Comparison of Innovation and Engineering Education Systems in US and China, and Lessons Learned from UM-SJTU Joint Institute,” invited presentation at President’s Council of Shanghai Jiao Tong University, China, June 1, 2010.
206. “Opportunities in Green Race: U.S. versus China,” invited plenary speaker at US-China Automotive Conference, Detroit, June 10, 2010
207. “Comparison of the Innovation and Higher Education Systems in US and China, and Lessons Learned from UM-SJTU Joint Institute,” invited presentation at President’s Council of Zhejiang University, Hangzhou, China, June 25, 2010.
208. “Action-Based, Learning Outcome-Oriented Engineering Curriculum Design,” invited presentation at Shanghai Jiao Tong University, China, July 7, 2010
209. “Manufacturing Process Modeling and Optimization,” invited presentation at Sino-US Workshop on Aerospace Manufacturing, Shanghai, July 15-16, 2010
210. “Comparison of the Innovation and Higher Education Systems in US and China,” invited distinguished Kong-Mu-Lake lecturer, South China Jiao Tong University, Nanchang, Nov 20, 2011
211. “Opportunities in Green Race,” invited panel speaker at 2011 Automotive News World Congress, Detroit, January 13, 2011
212. “Advanced Automotive Manufacturing Technologies,” invited presentation at Chrysler Technical Center, April 27, 2011
213. “Comparison of Engineering Education Systems and Innovations in Mechanical Engineering,” invited keynote presentation at China’s Annual Mechanical Engineering Education Conference, Guangzhou, May 14, 2011
214. “Battery Life-cycle Management,” invited presentation at Smart Battery Workshop, Shanghai Advanced Industrial Technology Research Institute, May 25, 2011
215. “Innovations in Engineering Education,” invited presentation at International Conference on Systemic Innovation, Shanghai, May 26, 2011
216. “Comparison of the Innovation and Higher Education Systems in US and China,” invited lecture, Jiangsu University, Zhenjiang, May 27, 2011
217. “Preparation for Tomorrow’s Success,” invited presentation at Huang-Chuan High School, Xining, Qinghai, June 1, 2011
218. “New Energy Vehicle Drive in China,” invited keynote presentation at 2011 Automotive News Green Car Conference, Lavonia, Michigan, June 13, 2011
219. “Estimation of Milling Cutter Temperature Considering Coolant and Wear,” presentation at ASME Manufacturing Science and Engineering Conference, June 15, 2011
220. “Advanced Manufacturing Research,” invited seminar at Hong Kong Polytechnic University, July 12, 2011
221. “Emerging Manufacturing Research,” invited presentation at Frontiers of Manufacturing Research, National Natural Science Foundation of China, Harbin, August 13, 2011
222. “MicroGPS based 3D Metrology for Microfactory Application,” invited presentation at International Workshop on Microfactory, Jeju Island, Korea, August 18, 2011
223. “Optimal Control of Reassembly with Variable Quality Returns in a Product Remanufacturing System,” presentation at CIRP General Assembly, Budapest, Hungary, August 25, 2011
224. “Decision Support Systems for Maintenance,” invited presentation at World Congress on Engineering Asset Management, Cincinnati, Ohio, Oct 4, 2011
225. “Forming of Lightweight Materials,” presentation at US-China Clean Energy Research Consortium – Clean Vehicle Center Annual Meeting, Beijing, Oct 18, 2011
226. “Advances in Manufacturing Process Modeling and Optimization,” invited presentation at High Level International Workshop on Digital Design and Manufacturing, Chinese Academy of Engineering, Beijing, November 6, 2011
227. “Manufacturing R&D in China,” keynote presentation at the 6th International Conference on Leading Edge Manufacturing (LEM21) in 21st Century, Japan Society of Mechanical Engineering, Saitama, Japan, November 8, 2011
228. “Manufacturing R&D in China,” invited presentation at Ford Motor Company, Dearborn, MI, Nov 15th, 2011
229. “Opportunities in the Green Race: US vs China,” invited presentation at UM Inside China Auto Conference, University of Michigan, Nov 16th, 2011
230. “Innovation and Educational Systems in China and US,” invited presentation at Zhejiang University of Science and Technology, December 9, 2011
231. “Outlook on China’s Manufacturing,” invited presentation at Global Industry Transformation (GIT) Expert Group Meeting, Geneva, December 20, 2011
232. “Micro/Meso-scale Manufacturing and Applications,” invited presentation at CIRP January Meeting (CWG-Micro Production Engineering), Paris, Jan 25th, 2012
233. “Future of Manufacturing – An update from the World Economic Forum’s Global Agenda Council on Advanced Manufacturing,” invited presentation at CIRP January Meeting (Task Force on Globalization), Paris, Jan 25th, 2012
234. “Optimization of Maintenance Operations,” invited presentation at CIRP January Meeting (STC-O), Paris, Jan 26th, 2012
235. “Manufacturing Science and Its Applications to Industry,” invited seminar at the University of Illinois at Chicago, February 7, 2012
236. “Intelligent Maintenance Systems,” invited presentation at ESI, Portland, Oregon, February 10, 2012
237. “Manufacturing R&D in China,” invited keynote presentation at AMT Annual Meeting, Orlando, Florida, March 8, 2012
238. “Predictive Maintenance Research,” invited presentation at Chrysler, Brampton, Ontorio, Canada, March 15, 2012
239. “Intelligent Maintenance Systems,” invited keynote presentation at Automotive Maintenance Conference, Spartanburg, South Carolina, March 23, 2012
240. “High Performance Manufacturing for Aerospace Applications,” invited keynote presentation at the International Symposium on Aerospace Manufacturing, Chengdu, China, March 30, 2012
241. “Remanufacturing of EV Battery,” invited presentation at Argonne National Lab, Illinois, May 2, 2012
242. “Comparison of US-China Higher Education Systems,” invited presentation at China Higher Education Leadership Forum, University of Michigan, May 15, 2012
243. “Comparison of US-China Innovation Systems,” invited presentation at Xi’an Jiao Tong University, Xi’an, China, May 26, 2012
244. “Recent Advances in High Performance Machining and Machine Tools,” invited keynote presentation at the 15th International Conference on Machine Design and Production, Turkey, June 19-22, 2012
245. “Lessons Learned from UM-SJTU Joint Institute,” invited presentation at Southwestern Jiao Tong University Leadership Forum, July 26, 2012
246. “Advanced Manufacturing Research,” invited presentation at GE Global Manufacturing Council meeting, Shanghai, China, September 25, 2012
247. “China’s Policies to Promote Manufacturing,” invited presentation at World Economic Forum’s Manufacturing for Growth Taskforce Forum, Berlin, Germany, October 16, 2012
248. “Global Sustainable Manufacturing,” invited keynote presentation at the International Conference of Manufacturing Technology Engineers 2012, Seoul, Korea, October 18-19, 2012
249. “Intelligent Maintenance Systems,” invited presentation at Samsung Electric-Mechanics, Korea, October 20, 2012
250. “Comparison of US-China Innovation Systems,” invited presentation at Ministry of Science and Technology, People’s Republic of China, November 6, 2012
251. “Historical Overview of UM-SJTU Joint Institute,” invited presentation at UM-SJTU Symposium, January 15, 2013
252. “Enabling Sustainable Global Manufacturing,” invited presentation at CIRP January meeting (Task Force on Globalization), January 23, 2013
253. “Maintenance and Production Research,” invited seminar at Karlsruhe Institute of Technology, Germany, January 28, 2013
254. “Factors Shaping the Future of Sustainable Global Manufacturing,” invited keynote speech at International Conference on Competitive Manufacturing, Stellenbosch, South Africa, January 30, 2013
255. “Maintenance Optimization for Competitive Manufacturing,” invited session keynote speech at International Conference on Competitive Manufacturing, Stellenbosch, South Africa, January 31, 2013
256. “Recent Advanced in Manufacturing Research,” invited presentation at Nagoya University, Japan, March 4, 2013
257. “Overview of UM-SJTU Joint Institute,” invited seminar at Nagoya University, Japan, March 5, 2013
258. “Future Challenges of Global Manufacturing,” invited keynote presentation, Chinese Academy of Engineering, People’s Great Hall, Beijing, March 31, 2013
259. “High Throughput Production Methods,” invited presentation at Nissan Headquarter, Yokohama, Japan, April 5, 2013
260. “Transition of Chinese Automotive Industry Post JV Era,” invited keynote presentation at Shanghai Auto Show, Shanghai, April 19, 2013
261. “Precision Optical Metrology and Applications in Advanced Manufacturing,” invited presentation at 2013 International Workshop on Aerospace Manufacturing, Tianjin, April 22, 2013
262. “China’s Manufacturing R&D Strategies,” invited presentation at Kobe Productivity Promotion Center, Kobe, Japan, April 25, 2013
263. “China’s Manufacturing R&D Strategies,” invited presentation at World Economic Forum “Manufacturing for Growth: Roundtable Workshop”, Tokyo, Japan, May 29, 2013
264. “Reconfigurable Manufacturing Systems,” invited presentation at Cummins Annual Conference on Science and Technology, Columbus, IN, June 26, 2013
265. “Future of Global Sustainable Manufacturing,” invited presentation at National Natural Science Foundation of China, Workshop on Advanced Manufacturing, Tsinghua University, Beijing, July 27, 2013
266. “Decision-support Systems for Intelligent Maintenance,” invited presentation at CIRP General Assembly, Copenhagen, August 22, 2013
267. “Future Development of Advanced Manufacturing,” invited keynote presentation at Dalian Municipal Government Executive Education Program, Dalian, September 10, 2013
268. “Comparison of Engineering Education between U.S. and China,” invited presentation at Dalian University of Technology, September 10, 2013
269. “Sustainable Global Manufacturing,” invited keynote presentation, International Conference on Advanced Research in Virtual and Rapid Prototyping, Portugal, October 1-3, 2013
270. “Modeling and Optimization of Manufacturing Processes,” invited keynote presentation, International Conference on Manufacturing Technology and Engineering, Shanghai, October 10, 2013
271. “Sustainable Global Manufacturing,” invited keynote presentation, China Manufacturing Leadership Summit, Tianjin, October 24-25, 2013
272. “Sustainable Global Manufacturing,” invited seminar at Southern China University of Science and Technology, Guangzhou, December 8, 2013
273. “Comparison of Engineering Education in US and China,” invited seminar, Guangdong University of Technology, Guangzhou, December 10, 2013
274. “Comparative Analysis of Sustainable Development in Chinese Manufacturing Industry,” invited keynote presentation at 2014 Ford Chinese Association Annual Meeting, Dearborn, January 16, 2014
275. “Maintenance and Throughput Improvement for Manufacturing Systems,” invited presentation at Chrysler, Feb 27, 2014
276. “Outlook on Sustainable Global Manufacturing,” invited seminar at Wayne State University, Feb 28, 2014
277. “International Research Collaboration,” invited panelist at Institute of International Education conference, NY, March, 2014
278. “International Education,” invited panelist at Harvard China Forum, Harvard University, April 18-19, 2014
279. “Multi-Stage Manufacturing Process Modeling,” invited talk at Procter & Gamble, Ohio, May 7, 2014
280. “Manufacturing Innovations,” invited keynote presentation at Freudenberg Global Innovation Summit, Plymouth, MI, May 13, 2014
281. “Global Sustainable Manufacturing,” invited keynote presentation at International Conference on Frontiers of Design and Manufacturing, Nanjing, China, May 24, 2014
282. “Advanced Error Compensation Technologies,” invited presentation at Sino-US Engineering Technology Forum, Hunan, May 26-27, 2014
283. “Maintenance Decision Support Methodologies,” invited seminar at Chinese University of Defense Science and Technology, Hunan, May 25, 2014
284. “Global Manufacturing Competitiveness,” invited presentation at the Wu Workshop on Manufacturing Competitiveness, Detroit, MI, June 12, 2014
285. “Global Sustainable Manufacturing,” invited presentation at Eco-Forum Global, Guiyang, July 11, 2014
286. “Prospects of Future Robotics and Automation Technologies,” invited panel discussion at SoftBank China Venture Capital Annual Meeting, Shanghai, Sept 15, 2014
287. “Challenges in Future Engineering Education and Comparison of US-China Engineering Education,” invited seminar at Tsinghua University, China, Sept 17, 2014
288. “Challenges in Future Engineering Education and Comparison of US-China Engineering Education,” invited seminar at Northwestern Polytechnic University, Xi’an, China, Sept. 24, 2014
289. “Future Manufacturing Competitiveness,” invited seminar at Hefei University of Technology, Hefei, China, Sept. 26, 2014
290. “Recent Trends and Issues in Advanced Manufacturing,” invited seminar at Seoul National University, S. Korea, October 17, 2014
291. “Adaptive Active Dynamic Balancing,” invited seminar at Samsung, S. Korea, November 5, 2014
292. “Big Data Opportunities in Advanced Manufacturing and Maintenance,” invited presentation at 1st German-US Workshop on Predictive Analytics, Cyber Physical Systems, and Industrie 4.0 in Big Data Environments, Technical University of Munich, Germany, November 17-18, 2014
293. “Manufacturing Innovations,” “Global Engineering Education,” invited seminars at Ulsan National Institute of Science and Technology, S. Korea, December 9, 2014
294. “Recent Trends in Advanced Manufacturing Research,” invited seminar at Korea Institute of Industry Technology, S. Korea, December 10, 2014
295. “Manufacturing Innovations”, “Big Data Opportunity in Advanced Manufacturing,” invited seminars at Samsung, S. Korea, December 11, 2014
296. “Big Data Opportunities in Advanced Manufacturing and Maintenance,” invited presentation at Pacific Rim Statistics Conference on Production Engineering, Fudan University, Shanghai, China, December 12-13, 2014
297. “Intelligent Maintenance Systems with Case Studies,” invited seminar at Samsung, S. Korea, December 19, 2014
298. “Best Practice in Technology Innovations,” invited keynote presentation at Nanhai Science and Technology Innovation Forum, March 20, 2015
299. “Smart Manufacturing Systems,” invited seminar at Korean Institute of Industrial Technology, Seoul, May 20, 2015
300. “Opportunities and Challenges of Advanced Manufacturing in Big Data Era,” invited keynote presentation at International Aerospace Manufacturing Technology Conference, Xi’an, May 27, 2015
301. “Global Sustainable Manufacturing,” invited keynote presentation at the CIRP international Total Quality Management conference, Belgrade, June 2, 2015
302. “Holistic Approaches to Quality Improvement in Manufacturing,” invited plenary presentation at the CIRP international Total Quality Management conference, Belgrade, June 3, 2015
303. “Outlook on Future Global Sustainable Manufacturing,” invited plenary keynote presentation at International Symposium on Green Manufacturing and Applications, Qingdao, June 24, 2015

1. \* Because of sentimental reasons, the late Professor S. M. Wu’s name was kept in these committees. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)
4. [↑](#footnote-ref-4)
5. [↑](#footnote-ref-5)