

Qiang Huang

Associate Professor and Gordon S. Marshall Early Career Chair in Engineering
Daniel J. Epstein Department of Industrial and Systems Engineering
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Education

Ph.D. Industrial and Operations Engineering, University of Michigan, August 2003
M.A. Statistics, University of Michigan, April 2002
Ph.D. Mechanical Engineering, Shanghai JiaoTong University, December 1998
M.S. Mechanical Engineering, Shanghai JiaoTong University, February 1996
B.S. Mechanical Engineering, Shanghai JiaoTong University, July 1993

Professional Experience

Associate Professor, Daniel J. Epstein Department of Industrial and Systems Engineering, University of Southern California, Los Angeles, CA, March 2012 ~ Present.

Assistant Professor, Daniel J. Epstein Department of Industrial and Systems Engineering, University of Southern California, Los Angeles, CA, August 2009 ~ March 2012.

Associate Professor, Department of Industrial and Management Systems Engineering, University of South Florida, Tampa, FL, June 2008 ~ August 2009.

Assistant Professor, Department of Industrial and Management Systems Engineering, University of South Florida, Tampa, FL, August 2003 ~ June 2008.

Awards

1. Gordon S. Marshall Early Career Chair in Engineering, USC, 2012–Present
2. NSF Faculty Early Career Development (CAREER) Award, 2011.
3. Nominee for Junior Research Award of USC's Viterbi School of Engineering both in 2010 and 2011.
4. *Featured articles on IIE Transactions*
Huang, Q., 2011, "Physics-Driven Bayesian Hierarchical Modeling of Nanowire Growth Process At Each Scale," *IIE Transactions on Quality and Reliability*, Vol. 43, pp. 1-11.
5. *Featured articles on IIE Transactions*
Wang, H., and Huang, Q., 2006, "Error Cancellation Modeling and Its Application in Machining Process Control," *IIE Transactions on Quality and Reliability*, Vol.38, pp.379–388.
6. 2002-2003 Student of the Year at NSF Engineering Research Center for Reconfigurable Machining Systems (ERC-RMS) at University of Michigan, May 2003.

Grants

1. Co-PI *Hybrid BioFlex System for Personalized Restoration of Electromechanical Coupling of Injured and Regenerating Tissues*, USC VSoE Research Innovation Fund, \$9,000, 2012 (PI: T. Hsiai, BME; Co-PI: J. Yoon, CHE).
2. PI, *CAREER: Nanomanufacturing Process Modeling and Control – A Foundation for Large-Scale Production*, NSF CMMI-1055394, \$400,000, 2011~2016.
3. Co-PI (50% effort), *Cyber-Enabled Manufacturing Systems (CeMS): Real-Time Shape Compensation for Accurate Direct Digital Manufacturing*, Office of Naval Research, ONR Grant# N000141110671, \$439,645, 2011~2014 (PI: Y. Chen at USC).

4. Leading PI, *Collaborative Research: Nanostructure Growth Process Modeling and Optimal Experimental Strategies for Repeatable Fabrication of Nanostructures for Application in Photovoltaics*, NSF CMMI-1000972, \$300K, 2010~2013 (Co-PI at USC: C. Zhou; PI at Harvard University: T. Dasgupta, \$160K).
5. PI, *In Situ Nanomanufacturing Process Control Through Multiscale Nanostructure Growth Modeling*, NSF CMMI-0728100 & CMMI-1002580, \$350K, 2007~2011 (Co-PI: A. Kumar).
6. PI, *Analysis of Correlated Functional Process Variables for Manufacturing Process Diagnosis*, NSF CMMI-0600066 & CMMI-1002433, \$280K, 2006~2010 (Co-PI: A. Kumar), including supplement request of \$15K for Cyberinfrastructure Experiences for Graduate Students (CIEG).
7. Co-PI, *Nanoengineered, Manufacturable, Ion-Implantation Seeded Silica Nanowires for Sensitive BioScreening*, NSF CMMI-0700659, \$289,980, 2007~2010 (PI: S. Bhansali).
8. Co-PI, *Bayesian process control for nanomanufacturing with mixed resolution information*, Hong Kong RGC (Research Grant Council), 2009~2011 (PI: F. Tsung, Co-PI: J. Shi)
9. PI, *Multiscale Nanostructure Growth Modeling for Control of Nanomanufacturing*, Functional Multiscale Materials by Design Initiative, University of South Florida, \$7000, Summer 2007.
10. PI, *Part-Path-Oriented Measurement Strategy for Serial-Parallel Reconfigurable Manufacturing Systems with Real-Time RF-Tag Information*, \$7600, sponsored by NSF ERC-RMS at University of Michigan (Co-PI: R. Katz, Chief Engineer at ERC-RMS), 2004.
11. PI, *Process Control based on Multivariate Functional Data*, University of South Florida Internal Research Awards, \$2700, 05/04~04/05.

Research

Research Interests

- Integrated Nanomanufacturing & Nanoinformatics (INN)
- Modeling and control of complex systems for quality improvement
- Quality and Applied Statistics

Publications

Refereed Journals and Transactions

Published or Accepted

1. Zhu, L., Dasgupta, T., and Huang, Q., 2011, "A Locally D-Optimal Design for Estimation of Parameters of an Exponential-Linear Growth Curve of Nanostructures," *Technometrics*, *Accepted with revision*.
2. Chang, C.J., Xu, L., Huang, Q., and Shi, J., 2011, "Quantitative Characterization and Modeling Strategy of Nanoparticle Dispersion in Polymer Composites," *IIE Transactions on Quality and Reliability, Special Issue on Quality, Sensing and Prognostics Issues in Nanomanufacturing*, DOI: 10.1080/0740817X.2011.588995, in press.
3. Huang, Q., Wang, L., Dasgupta, T., Zhu, L., Sekhar, P.K., and, Bhansali, S., An, Y., 2011, "Statistical Weight Kinetics Modeling for Silica Nanowires Growth Catalyzed by Pd Thin Film," *IEEE Trans on Automation Science and Engineering*, Vol. 8, pp. 303-310.
4. Huang, Q., 2011, "Physics-Driven Bayesian Hierarchical Modeling of Nanowire Growth Process At Each Scale," *IIE Transactions on Quality and Reliability*, Vol. 43, pp. 1-11. (Selected for Research Highlight in IIE Industrial Engineer).
5. Zhang, X., Huang, Q., 2010, "Analysis of Interaction Structure Among Multiple Functional Process Variables for Process Monitoring in Semiconductor Manufacturing," *IEEE Transactions on Semiconductor Manufacturing*, Vol.23(2), pp.263-272.
6. Chen, S., Wang, H., and Huang, Q., 2010, "Diagnosis of Multiple Error Sources Under Variation Equivalence", *NAMRI/SME Transactions*, Vol. 38.

7. Zhang, X., Wang, H., Huang, Q., Kumar, A., and Zhai, J., 2009, "Statistical and Experimental Analysis of Correlated Time-varying Process Variables for Condition Diagnosis in Chemical-Mechanical Planarization." *IEEE Transactions on Semiconductor Manufacturing*, Vol.22 (3), pp. 512-521.
8. Wang, H., Zhang, X., Kumar, A., Huang, Q., 2009, "Nonlinear Dynamics Modeling of Correlated Functional Process Variables for Condition Monitoring in Chemical-Mechanical Planarization ", *IEEE Transactions on Semiconductor Manufacturing*, Vol. 22, pp. 188-195.
9. Wang, H., Kababji, H., and Huang, Q., 2009, "Monitoring Global and Local Variations in Multichannel Functional Data For Manufacturing Processes," *SME Transactions Journal of Manufacturing Systems*, doi:10.1016/j.jmsy.2009.03.001.
10. Wang, H., and Huang, Q., 2007, "Using Error Equivalence Concept to Automatically Adjust Discrete Manufacturing Processes for Dimensional Variation Reduction," *ASME Transactions, Journal of Manufacturing Science and Engineering*, Vol. 129, pp. 644-652.
11. Kim, J., Huang, Q., Shi, J., 2007, "Latent Variable-based Key Process Variable Identification and Process Monitoring for Forging," *SME Transactions Journal of Manufacturing Systems*, Vol. 26, pp. 53-61.
12. Wang, H., and Huang, Q., 2006, "Error Cancellation Modeling and Its Application in Machining Process Control," *IIE Transactions on Quality and Reliability*, Vol.38, pp.379-388. (Work highlighted by IIE Industrial Engineer)
13. Wang, H., and Huang, Q., Yang, H., 2006, "In-Line Statistical Monitoring of Machine Tool Thermal Error Through Latent Variable Modeling," *SME Transactions Journal of Manufacturing Systems*, Vol. 25, No.4, pp. 279-292.
14. Kim, J., Huang, Q., Shi, J., and Chang, T.-S., 2006, "Online Multichannel Forging Tonnage Monitoring and Fault Pattern Discrimination Using Principal Curve," *ASME Transactions, Journal of Manufacturing Science and Engineering*, Vol. 128, pp. 944-950.
15. Wang, H., Huang, Q., Katz, R., 2005, "Multi-Operational Machining Processes Modeling for Sequential Root Cause Identification and Measurement Reduction," *ASME Transactions, Journal of Manufacturing Science and Engineering*, Vol. 127, pp. 512-521.
16. Huang, Q., and Shi, J., 2004, "Stream of Variation Modeling of Serial-Parallel Multistage Manufacturing Systems with Coupled Process Routes," *ASME Transactions, Journal of Manufacturing Science and Engineering*, Vol. 126, pp.611-618.
17. Huang, Q., and Shi, J., 2004, "Variation Transmission Analysis and Diagnosis of Multi-Operational Machining Processes," *IIE Transactions on Quality and Reliability Engineering*, Vol. 36, pp. 807-815.
18. Huang, Q., Shi, J., and Yuan, J., 2003, "Part Dimensional Error and its Propagation Modeling in Multi-Operational Machining Processes," *ASME Transactions, Journal of Manufacturing Science and Engineering*, Vol. 125, pp. 255-262.
19. Zhou, S., Huang, Q., and Shi, J., 2003, "State Space Modeling for Dimensional Monitoring of Multistage Machining Process Using Differential Motion Vector," *IEEE Transactions on Robotics and Automation*, Vol. 19, pp. 296-309.
20. Huang, Q., Shi, J., 2003, "Simultaneous Tolerance Synthesis through Variation Propagation Modeling of Multistage Manufacturing Processes," *NAMRI/SME Transactions*, Vol. 31, pp. 515-522.
21. Huang, Q., Zhou, S., and Shi, J., 2002, "Diagnosis of Multi-Operational Machining Processes through Process Analysis," *Robotics and Computer-Integrated Manufacturing*, Vol. 18, pp. 233-239.

Editorial Articles

1. Bukkapatnam, S., Kamarthi, S., Huang, Q., and Zeid, A., Komanduri, R., 2012, "Nanomanufacturing systems: opportunities for industrial engineers," *Quality, Sensing and Prognostics*

Issues in Nanomanufacturing, Special Issue of the IIE Transactions on Quality and Reliability Engineering/Manufacturing and Design.

Refereed Conference Proceedings

1. Wang, L., Huang, Q., Krishanan, S., Huey, E, and Bhansali, S., 2012, "Physical knowledge integration in nano-manufacturing using approximate Bayesian computation," 22nd International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2012), Accepted.
2. Huang, Q., 2011, "Integrated Nanomanufacturing and Nanoinformatics for Quality Improvement", *44th CIRP International Conference on Manufacturing Systems*, June 1-3, 2011, Madison, Wisconsin (Invited).
3. Wang, H., Chen, S., and Huang, Q., 2009, "Multistage Machining Process Design and Optimization Using Error Equivalence Method", *2009 ASME International Manufacturing Science and Engineering Conference (MSEC)*, October 4-7, 2009, West Lafayette, IN.
4. Huang, Q., Wang, H., 2008, "Error Equivalence Methodology for Dimensional Variation Control in Manufacturing." *2008 IEEE International Conferences on Robotics, Automation & Mechatronics (RAM)*, RAM2008-1013, June 3-6, Chengdu, China.
5. Wang, H., Huang, Q., 2005, "Automatic Process Adjustment for Reducing Dimensional Variation in Discrete Part Machining Processes." *Proceedings of 2005 International Mechanical Engineering Congress & Exposition, MED-10A, IMECE2005-80406*, Nov. 5-11, Orlando, FL.
6. Wang, H., Huang, Q., Katz, R., 2004, "Multi-Operational Machining Processes Modeling for Sequential Root Cause Identification and Measurement Reduction," *Proceedings of 2004 International Mechanical Engineering Congress & Exposition, MED-19, IMECE2004-59330*, Nov. 13-19, Anaheim, CA.
7. Kim, J., Huang, Q., Shi, J., and Chang, T.-S., 2003, "Online Multi-Channel Forging Tonnage Monitoring and Fault Pattern Discrimination Using Principal Curve," *Proceedings of 2004 International Mechanical Engineering Congress and Exposition, MED-17B, IMECE2004-59191*, Nov. 13-19, Anaheim, CA.
8. Huang, Q., and Shi, J., 2002, "Stream of Variation Analysis and Root Cause Diagnosis for Multi-Operational Machining Processes," *2002 Japan-USA Symposium on Flexible Automation*, July 15-17, Hiroshima, Japan.
9. Huang, Q., Zhou, S., and Shi, J., 2001, "Diagnosis of Multi-Operational Machining Processes By Using Virtual Machining," *Int. Conf. on Flexible Automation & Intelligent Manufacturing*, pp. 804-813, July 16-18, Dublin, IRELAND.
10. Huang, Q., Zhou, N., and Shi, J., 2000, "Stream of Variation Modeling and Diagnosis of Multi-Station Machining Processes," *Proc. 2000 ASME Int. Mech. Eng. Congress & Exposition, MED-Vol. 11, pp.81-88*, November 5-10, Orlando, FL.

Invited Talks

1. "Nanomanufacturing Process Modeling and Design Issues," Workshop on Design and Analysis of Experiments in Modern-day Science and Technology, Department of Statistics, Harvard University, April 8-9, 2011.
2. "Integrated Nanomanufacturing and Nanoinformatics for Quality Improvement," Department of Industrial Engineering, University of Houston, October 1, 2010.
3. "Integrated Nanomanufacturing and Nanoinformatics for Quality Improvement," Department of Industrial and Systems Engineering, Texas A&M University, September 30, 2010.
4. "Nanomanufacturing Process Modeling for Quality Improvement," Department of Industrial and Systems Engineering, University of Wisconsin-Madison, April 9th, 2010.
5. "Nanomanufacturing Process Modeling for Quality Improvement," Department of Industrial Engineering and Management Sciences, Northwestern University, April 8th, 2010.

6. "Statistical Weight Kinetics Modeling for Silica Nanowires Growth Catalysed by Pd Thin Film," 2009 Workshop on Statistical Methods for Nano Research, Georgia Tech, December 9, 2009.
7. "Engineering-Driven Statistical Analysis for In-Process Improvement," Biostatistical Forum, College of Public Health at University of South Florida, September 26, 2008.
8. "*In Situ* Quality Control for Nanomanufacturing," National Center for Nanoscience and Technology, Beijing, China, June 13, 2008.
9. "Bayesian Multiscale *In Situ* Process Control for Nanomanufacturing," Daniel J. Epstein Department of ISE, University of Southern California, April 28, 2008.
10. "Bayesian Multiscale *In Situ* Process Control for Nanomanufacturing," Statistics Colloquium Lecture at University of South Florida, April 18, 2008.
11. "Multiscale *In Situ* Nanomanufacturing Process Control: Challenges and Research Issues," Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China, August 3, 2007.
12. "Multiscale *In Situ* Nanomanufacturing Process Control: Challenges and Research Issues," School of Materials Science and Engineering, Jilin University, China, July 2, 2007.
13. "Modeling and Analysis of Fundamental Phenomena in Complex Manufacturing Systems for Quality and Productivity Improvement," Mechanical Engineering Department University of Texas, Austin, March 29, 2007.
14. "Modeling and Analysis of Fundamental Phenomena in Complex Systems for Quality and Productivity Improvement," ISyE Statistics Seminar, Industrial and Systems Engineering Department at Georgia Institute of Technology, March 9, 2007.
15. "Measurement Strategy through Sequential Root Cause Identification," NSF Site Visit, Engineering Research Center for Reconfigurable Manufacturing Systems at University of Michigan, May 6, 2004.
16. "Stream of Variation Methodology for Serial-Parallel Reconfigurable Manufacturing Systems: Part-Path-Oriented Strategy," Technical Advisory Committee Meeting, Engineering Research Center for Reconfigurable Manufacturing Systems at University of Michigan, October 15, 2003.

Presentations

1. "Modeling the Interactions among Neighboring Nanostructures for Local Feature Characterization and Defects Detection," *INFORMS Annual Meeting*, November 13-16, 2010, Charlotte, NC.
2. "Nanostructure Local Interactions Analysis with Incomplete Measurement," *INFORMS Annual Meeting*, November 13-16, 2010, Charlotte, NC.
3. "Modeling the Interaction Among Nanostructures for Local Morphology Control," *INFORMS Annual Meeting*, November 7-10, 2010, Austin, TX.
4. "Hierarchical Modeling of Weight Kinetics of Silica Nanowire Growth under Different Temperatures," *INFORMS Annual Meeting*, November 7-10, 2010, Austin, TX.
5. "Quantitative Characterization and Modeling of Nanoparticle Dispersion in Polymer Composite," *INFORMS Annual Meeting*, November 7-10, 2010, Austin, TX.
6. "Physics-Driven Bayesian Hierarchical Modeling of Nanowire Growth Process At Each Scale," *IERC Conference*, June 5-9, 2010, Cancun, Mexico.
7. "Analysis of Interaction Structure among Multiple Functional Process Variables for Process Control in Semiconductor Manufacturing," *IERC Conference*, June 5-9, 2010, Cancun, Mexico.
8. "Panel Discussion on Quality Improvement in Nanomanufacturing: Nanomanufacturing Process Modeling for Quality Control," *INFORMS Annual Meeting*, October 11-14, 2009, San Diego, CA.

9. "Modeling and Optimal Design for Investigating Nanostructure Weight Kinetics," *INFORMS Annual Meeting*, October 11-14, 2009, San Diego, CA.
10. "Analysis of Interaction Structure Patterns for Process Control in Semiconductor Manufacturing," *INFORMS Annual Meeting*, October 11-14, 2009, San Diego, CA.
11. "Nanostructure Growth Modeling for in Situ Nanomanufacturing Process Control," *INFORMS Annual Meeting*, November 4-7, 2007, Seattle, WA.
12. "Error Cancellation Modeling and Its Application to Machining Process Control," IIE Transactions paper session, *INFORMS Annual Meeting*, November 4-7, 2007, Seattle, WA.
13. "Detection of Physiologic Condition Changes Based on Synchronization Patterns," *INFORMS Annual Meeting*, November 5-8, 2006, Pittsburgh, PA.
14. "Error Equivalence Methodology in Quality Prediction and Control," *INFORMS Annual Meeting*, November 5-8, 2006, Pittsburgh, PA.
15. "Error Equivalence Concept and Multistage Manufacturing Process Control," *INFORMS Annual Meeting*, November 5-8, 2006, Pittsburgh, PA.
16. "Analysis of Correlated Functional Process Variables for Nanomanufacturing Process Control," *IIE Annual Conference & Exposition*, May 20-24, 2006, Orlando, FL.
17. "Error Cancellation Modeling and It's Application in Manufacturing Process Control," *IIE Annual Conference & Exposition*, May 20-24, 2006, Orlando, FL.
18. "Change Detection of Synchrony in Oscillatory Neurophysiologic Signals," *INFORMS Annual Meeting*, November 13-16, 2005, San Francisco, CA.
19. "Feedback Adjustment of Machining Processes Based on Dynamic Equivalent Fixture Error Model," *INFORMS Annual Meeting*, November 13-16, 2005, San Francisco, CA.
20. "Monitoring Global and Local Variations in Multichannel Functional Data," *INFORMS Annual Meeting*, November 13-16, 2005, San Francisco, CA.
21. "Automatic Process Adjustment for Reducing Dimensional Variation in Discrete Part Machining Processes," *ASME IMECE*, November 5-11, 2005, Orlando, FL.
22. "Process Monitoring based on Multivariate Functional Data," *INFORMS Annual Meeting*, October 24-27, 2004, Denver, CO.
23. "Sequential Root Cause identification through Refined Multistage Process Model," *INFORMS Annual Meeting*, October 24-27, 2004, Denver, CO.
24. "Principal Curve Regression and Analysis for Process Monitoring and Control," *IIE Annual Conference & Exposition*, May 15-19, 2004, Houston, TX.
25. "Stream of Variation Modeling and Analysis of Serial-Parallel Multistage Manufacturing System," *INFORMS Annual Meeting*, November 18-23, 2003, Atlanta, GA.
26. "Simultaneous Tolerance Synthesis through Variation Propagation Modeling of Multistage Manufacturing Processes," *NAMRI/SME Transactions*, May 20-23, 2003, Hamilton, Ontario, Canada.
27. "Simultaneous Tolerance Synthesis through Variation Propagation Modeling of Multistage Manufacturing Processes," *INFORMS Annual Meeting*, November 17-20, 2002, San Jose, CA.
28. "Stream of Variation Modeling and Diagnosis of Multi-Station Machining Processes," *ASME IMECE*, November 5-10, 2000, Orlando, FL.

Nanomanufacturing Quality Control Laboratory (Nano-QCLab)

Nano-QCLab is to provide the state-of-the-art research and education infrastructure for the highly interdisciplinary area of quality control in nanomanufacturing. Nano-QCLab is currently equipped with four high performance workstations and a state-of-the-art thermal imaging tool, FLIR®infrared SC8000 InSb and Researcher Package, for in situ diagnosis of nanostructure growth.

Teaching

Courses Taught

Undergraduate level

ISE426: Statistical Quality Control (USC)
 EGN3443: Engineering Statistics (USF)
 ESI 4221: Industrial Statistics/Quality Control (USF)

Graduate level

ISE525: Design of Experiment (USC)
 ISE 650 Research Seminar (USC)
 ESI 6605: Engineering Data Mining (USF: new)
 ESI 6247: Statistical Design Models (USF)

Student Mentoring

Current Ph.D. students

1. Li Wang, "Bayesian Multiscale Growth Kinetics Modeling for Nanomanufacturing Process Control," 2009 ~ Present.
2. Lijuan Xu, "Nanostructure Morphology Variation Modeling and Estimation for Nanomanufacturing Process Control," 2009 ~ Present.
3. Jian Wu "Physical-Statistical Multiscale Modeling for Nanomanufacturing Process Control," 2011 ~ Present.
4. Jizhe Zhang "Realtime Shape Compensation for Direct Additive Manufacturing," 2011 ~ Present.

Ph.D. Graduates

1. Hui Wang, Ph.D., Fall 2007, "Error Equivalence Theory for Manufacturing Process Control." (USF) Current position: Assistant Research Scientist at University of Michigan-Ann Arbor, 2008 ~ Present.
2. Xi Zhang, Ph.D., Fall 2009, "Physical and Statistical Analysis of Functional Process Variables for Process Control in Semiconductor Manufacturing." (USF) Current position: Assistant Professor, Industrial Engineering & Management Dept., Peking University, 2010 ~ Present.

M.S. Graduates

1. Hani Kababji, M.S., 2005, "Online Change Detection for Multichannel Functional Data." (USF) Current position: senior consultant at Ernst & Young.
2. Shaoqiang Chen, M.S., Summer 2008, "Manufacturing Process Design and Control based on Error Equivalence Methodology." (USF). Current position: Chico's FAS.
3. Gang Liu, M.S., Fall 2009, "Nanostructure Morphology Variation Modeling and Estimation for Nanomanufacturing Process Yield Improvement." (USF)

REU students mentored

USC: Cynthia Larocque, Preethi Kasireddy, William Sheng, Michelle Leclair, Drew Nolls. USF: Clayton Bristol, Kristin L. Carattini, Estrella Jackson, Tsai Wu, UM: Shenale E. Glenn, Lina Kim, and Krystle D. Lemon.

Service

Editorial Service

Associate Editor, IEEE Transactions on Automation Science and Engineering, 2012-2014

Contributing Editors, InterNano (www.internano.org), online resource of the National Nanomanufacturing Network (NNN), 04/2012-04/2013.

Program Committee, 1st International Conference on Manipulation, Manufacturing and Measurement on the Nanoscale (3M-NANO), 29 Aug - 2 Sept 2011 in Changchun, China.

Associate Editor (Quality, Micro and Nano Manufacturing Systems), *SME Journal of Manufacturing Systems*, 2008-2011.

Special Issue Editor, “Quality, Sensing and Prognostics Issues in Nanomanufacturing”, *Special Issue of the IIE Transactions on Quality and Reliability Engineering/Manufacturing and Design*, 2010-2011.

Member of scientific committee (Editorial Board) for the *North American Manufacturing Research Institution (NAMRI) of SME*, 2009-2011.

IEEE CASE2010 Program Committee and Associate Editor (Automation in Meso, Micro and Nano-Scale)

Associate Editor (Automation in Meso, Micro and Nano-Scale), *2009 IEEE Conference on Automation Science and Engineering (CASE 2009)*.

Government and Professional Institutions

Chair-Elect (2011) & Chair (2012), INFORMS Section on Quality, Statistics, and Reliability.

Council member of QSR (Quality, Statistics, and Reliability) section at INFORMS, 2010-2012.

Panel Organizer, “Quality Control for Nanomanufacturing,” INFORMS 2007, 2009.

Session Organizer, “Quality Control for Nanomanufacturing,” IERC 2007, INFORMS 07-11

Symposium Co-organizer, “Advances in Quality Control in Multistage Manufacturing Systems,” 2006 ASME IMECE, Chicago, IL.

Panelist, NSF Proposal Review Panel, 2004, 2006 - 2009, 2011

Session Chair of INFORMS Annual Meeting, 2003, 2005-2011; Session Chair of IERC 2004, 2006, 2007; Session Chair of NAMRI/SME Conference, 2003

Professional Affiliation

INFORMS, IIE, SME, IEEE, ASME