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PROFESSIONAL PREPARATION

Tsinghua University, China	Automatic Control	B.E., 1995
Tsinghua University, China	Automatic Control	M.E., 1998
University of Maryland at College Park	Electrical Engineering	Ph.D., 2002
University of Maryland at College Park	Controls	Postdoc, 2002-2004

APPOINTMENTS

2004 - Assistant Professor, Department of Electrical & Computer Engineering, MSU

2002 - 2004 Research Associate, Institute for Systems Research, University of Maryland, College Park

1998 - 2002 Research Assistant, Department of Electrical & Computer Engineering, University of Maryland, College Park

HONORS AND AWARDS

1. 2008 DSCD Best Paper Award on Mechatronics (with Yang Fang), ASME Dynamic Systems and Control Division (DSCD), 2009
2. Faculty Early Career Development Award (CAREER), the National Science Foundation, 2006
3. Educational Grant in Optical Science and Engineering, International Society for Optical Engineering (SPIE), 2005
4. Best Poster Award (with M. Khbeis), the MEMS Alliance Special Topics Symposium, April 2003
5. Finalist, Best Student Paper Award, the 41st IEEE Conference on Decision and Control, 2002
6. Systems Fellow, Institute for Systems Research, University of Maryland, January 1998 - August 2002
7. Graduate and Undergraduate Scholarships, Tsinghua University: Siemens Prize (1997), Outstanding Automation Graduate Prize (1995), Yu-Chi Ho Scholarship (1994), 12.9 Scholarship (1991 & 1992)
8. First Class Prize, National Intelligence Contest for High School Students, China, 1988

TEACHING

1. EGR 100 (Member of instructional team), *Introduction to Engineering Design* (Fall 2007, Spring 2008, Fall 2008, Spring 2009, Fall 2009), MSU
2. ECE 313, *Control Systems* (Fall 2004, Fall 2005, Fall 2006, Fall 2007, Spring 2009, Fall 2009), MSU
3. ECE 480 (Facilitator), *Senior Design* (Fall 2005, Spring 2006), MSU
4. ECE 802-602, *Smart Material Sensors and Actuators* (Spring 2008), MSU

5. ECE 802-603, *Smart Sensors and Actuators in Micro and Nanosystems* (Spring 2005), MSU
6. ECE 802-603, *Networked and Embedded Control Systems* (Spring 2007), MSU
7. ECE 856, *Adaptive Control* (Fall 2008), MSU
8. ECE 960A, *Adaptive Control* (Spring 2006), MSU

RESEARCH AND EDUCATIONAL GRANTS

1. PI, "RI: Small: AquaSWARM: Small Wireless Autonomous Robots for Monitoring of Aquatic Environments," National Science Foundation, $409,999, 09/01/2009 - 08/31/2012. (Co-PI: E. Litchman. X. Tan's share: $307,499)
2. PI, "RET Site on Bio-Inspired Technology and Systems (BITS)," National Science Foundation, $500,000, 09/01/2009 - 08/31/2012. (Co-PIs: E. Alocilja, A. Kim. X. Tan's share: $200,000)
3. PI, "Nonlinear and Adaptive Control of Smart Material-Actuated Systems with Application to Nanopositioning," National Science Foundation, $216,000, 08/15/2008 - 07/31/2011. (Co-PI: H. K. Khalil. X. Tan's share: $129,600)
4. Co-PI, "Development of An Autonomous Robotic Fish-based Sensor to Detect Harmful Algal Blooms (HABs)," Biogeochemistry Environmental Research Initiative (BERI) at MSU, $10,000, Spring 2009. (PI: E. Litchman)
5. Co-PI, "ORCHID: Harnessing Digital Evolution to Design High-Assurance Adaptive Systems," National Science Foundation, $600,000, 07/01/2008 - 06/30/2011. (PI: B. H. Cheng; Other Co-PIs: P. K. McKenley, C. A. Ofria. X. Tan's share: $150,000)
6. PI, "Highly Maneuverable Robotic Fish Based on Biological Principles and Biomimetic Materials," Office of Naval Research, $379,748, 06/01/2008 - 05/31/2011
7. Co-PI, "CRI: IAD - A Testbed for Evolving Adaptive and Cooperative Behavior Among Autonomous Systems," National Science Foundation, $188,110, 05/01/2008 - 04/30/2010. (PI: P. K. McKinley; Other Co-PIs: B. H. Cheng, C. A. Ofria, R. T. Pennock. X. Tan's share: $35,741)
8. PI, "Modeling and Control of Self-sensing Artificial Muscles," US Civilian Research & Development Foundation, $9,400, 01/01/2008 - 12/31/2009
9. PI, "CAREER: Dexterous Biomimetic Micromanipulation Using Artificial Muscles: Modeling, Sensing, and Control," National Science Foundation, $559,663, 03/01/2006 - 02/28/2011
10. PI, "Integrated Sensory Feedback for Artificial Muscles," Michigan State University Intramural Research Grants Program, $50,000, 12/15/2005 - 12/31/2007
11. PI, "SGER: A Control-Oriented Model for Ionic Polymer-Metal Composite Actuators," National Science Foundation, $27,084, 09/15/2005 - 05/31/2006
12. PI, Educational Grant in Optical Science and Engineering, The International Society for Optical Engineering, $2,000, 08/29/2005 - 08/28/2006

PUBLICATIONS

Journal Papers:

[J-1] Z. Chen, **X. Tan**, "Monolithic Fabrication of Ionic Polymer-Metal Composite Actuators Capable of Complex Deformation," submitted to *Sensors and Actuators A: Physical*, 2009

[J-2] Y. Fang, **X. Tan**, "A Novel Diaphragm Micropump Actuated by Conjugated Polymer Petals: Fabrication, Modelling, and Experimental Results," submitted to *Sensors and Actuators A: Physical*, 2009

[J-3] **X. Tan**, W. Xi, J. S. Baras, "Decentralized Coordination of Autonomous Swarms Using Parallel Gibbs Sampling," submitted to *Automatica*, 2009

[J-4] S. Shatara, **X. Tan**, "Sliding-window Discrete Fourier Transform (SDFT)-based Underwater Acoustic Ranging for Small Robotic Fish," submitted to *IEEE Journal of Oceanic Engineering*, 2009

[J-5] Z. Chen, S. Shatara, **X. Tan**, "Modeling of Biomimetic Robotic Fish Propelled by an Ionic Polymer-Metal Composite Caudal Fin," *IEEE/ASME Transactions on Mechatronics*, to appear, 2009

[J-6] J. Ahrens, **X. Tan**, H. K. Khalil, "Multirate Sampled-Data Output Feedback Control with Application to Smart Material Actuated Systems," *IEEE Transactions on Automatic Control*, to appear, 2008

[J-7] Z. Chen, D. R. Hedgepeth, **X. Tan**, "A Nonlinear, Control-oriented Model for Ionic Polymer-Metal Composite Actuators," *Smart Materials and Structures*, Vol. 18, 055008 (9 pp), 2009

[J-8] **X. Tan**, R. Iyer, "Modeling and Control of Hysteresis: Introduction to the Special Section," *IEEE Control Systems Magazine*, Vol. 29, No. 1, pp. 26-29, 2009

[J-9] R. Iyer, **X. Tan**, "Control of Hysteretic Systems through Inverse Compensation: Inversion Algorithms, Adaptation, and Embedded Implementation" (**Invited paper** for special section on Modeling and Control of Hysteresis), *IEEE Control Systems Magazine*, Vol. 29, No. 1, pp. 83-99, 2009

[J-10] Y. Fang, T. J. Pence, **X. Tan**, "Nonlinear Elastic Modeling of Differential Expansion in Trilayer Conjugated Polymer Actuators," *Smart Materials and Structures*, Vol. 17, 065020 (10 pp), 2008

[J-11] Z. Chen, **X. Tan**, "A Control-oriented and Physics-based Model for Ionic Polymer-Metal Composite Actuators," *IEEE/ASME Transactions on Mechatronics*, Vol. 13, No. 5, pp. 519-529, 2008

[J-12] Y. Fang, **X. Tan**, G. Alici, "Robust Adaptive Control of Conjugated Polymer Actuators," *IEEE Transactions on Control Systems Technology*, Vol. 16, No. 4, pp. 600-612, 2008

[J-13] Y. Fang, **X. Tan**, G. Alici, "Redox Level-Dependent Impedance Model for Conjugated Polymer Actuators," *Sensors and Actuators B: Chemical*, Vol. 132, pp. 182-190, 2008

[J-14] Z. Chen, K. Kwon, **X. Tan**, "Integrated IPMC/PVDF Sensory Actuator and Its Validation in Feedback Control," *Sensors and Actuators A: Physical*, Vol. 144, No. 2, pp. 231-241, 2008

[J-15] Y. Fang, **X. Tan**, Y. Shen, N. Xi, G. Alici, "A Scalable Model for Trilayer Conjugated Polymer Actuators and Its Experimental Validation," *Materials Science and Engineering C: Biomimetic and Supramolecular Systems*, Vol. 28, No. 3, pp. 421-428, 2008

[J-16] Z. Chen, **X. Tan**, A. Will, C. Ziel, "A Dynamic Model for Ionic Polymer-Metal Composite Sensors," *Smart Materials and Structures*, Vol. 16, pp. 1477-1488, 2007

[J-17] Z. Chen, Y. Shen, N. Xi, **X. Tan**, "Integrated Sensing for Ionic Polymer-Metal Composite Actuators Using PVDF Thin Films" (**Invited paper** for special issue on Electroactive Polymer Materials), *Smart Materials and Structures*, Vol. 16, No. 2, pp. S262-S271, 2007

[J-18] W. Xi, **X. Tan**, J. S. Baras, "Gibbs Sampler-based Coordination of Autonomous Swarms," *Automatica,* Vol. 42, No. 7, pp. 1107-1119, 2006

[J-19] **X. Tan**, A. Modafe, R. Ghodssi, "Measurement and Modeling of Dynamic Rolling Friction in Linear Microball Bearings," *Journal of Dynamic Systems, Measurement and Control,* Vol. 128, No. 4, pp. 891-898, 2006

[J-20] **X. Tan**, "Almost Symplectic Runge-Kutta Schemes for Hamiltonian Systems," *Journal of Computational Physics,* Vol. 203, No. 1, pp. 250-273, 2005

[J-21] **X. Tan**, J. S. Baras, P. S. Krishnaprasad, "Control of Hysteresis in Smart Actuators with Application to Micropositioning," *Systems and Control Letters,* Vol. 54, No. 5, pp. 483-492, 2005

[J-22] R. V. Iyer, **X. Tan**, P. S. Krishnaprasad, "Approximate Inversion of the Preisach Hysteresis Operator with Application to Control of Smart Actuators," *IEEE Transactions on Automatic Control,* Vol. 50, No. 6, pp. 798-810, 2005

[J-23] **X. Tan**, J. S. Baras, "Adaptive Identification and Control of Hysteresis in Smart Materials," *IEEE Transactions on Automatic Control,* Vol. 50, No. 6, pp. 827-839, 2005

[J-24] **X. Tan**, J. S. Baras, "Modeling and Control of Hysteresis in Magnetostrictive Actuators," *Automatica*, Vol. 40, No. 9, pp. 1469-1480, 2004

[J-25] P. S. Krishnaprasad, **X. Tan**, "Cayley Transforms in Micromagnetics," *Physica B*, Vol. 306, pp. 195-199, 2001

[J-26] **X. Tan**, N. Zhang, L. Tong, Z. Wang, "Fuzzy Control of Thyristor Controlled Series Compensator in Power System Transients," *Fuzzy Sets and Systems*, Vol. 110, No. 3, pp. 429-436, 2000

[J-27] **X. Tan**, L. Tong, N. Zhang, Z. Wang, "Study on Multi-Objective Control of Thyristor Controlled Series Compensation," *Journal of Tsinghua University* (*Sci & Tech*) (in Chinese), Vol. 37, No. 7, pp. 63-66, 1997

[J-28] N. Zhang, B. Huang, **X. Tan**, "Development of Fuzzy Systems Development Tool FSDT 1.0," *Microcomputers and Its Applications* (in Chinese), No.3, pp. 27-28, 1996

Conference Papers:

[C-1] A. Esbrook, M. Guibord, **X. Tan**, H. K. Khalil, "Control of Systems with Hysteresis via Servocompensation and its Application Nanopositioning," submitted to *the 2010 American Control Conference*, Baltimore, MD, 2010

[C-2] **X. Tan**, M. Carpenter, J. Thon, F. Alequin-Ramos, "Analytical Modeling and Experimental Studies of Robotic Fish Turning," submitted to *the 2010 IEEE International Conference on Robotics and Automation*, Anchorage, Alaska, 2010

[C-3] Z. Chen, **X. Tan**, "MEMS-based Fabrication of Multiple-Degree-of-Freedom Ionic Polymer-Metal Composite Actuators," submitted to *the 17th SPIE Annual International Symposium on Smart Structures and Materials*, San Diego, CA 2010

[C-4] A. Hunt, Z. Chen, **X. Tan**, M. Kruusmaa, "Feedback Control of a Coupled IPMC (Ionic Polymer-Metal Composite) Sensor-Actuator," accepted for presentation at *the 2nd Annual Dynamic Systems and Control Conference (DSCC'09)*, Hollywood, CA, 2009

[C-5] Z. Chen, **X. Tan**, "Model-based Nonlinear Control of Ionic Polymer-Metal Composite Actuators," accepted for presentation at *the 2nd Annual Dynamic Systems and Control Conference (DSCC'09)*, Hollywood, CA, 2009

[C-6] S. Shatara, **X. Tan**, "A Compensated Sliding-window DFT Algorithm for Fine-grained Underwater Acoustic Ranging," accepted for presentation at *the 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems*, St. Louis, MO, 2009

[C-7] M. Anton, Z. Chen, M. Kruusmaa, **X. Tan**, "Analytical and Computational Modeling of Robotic Fish Propelled by Soft Actuation Material-based Active Joints," accepted for presentation at *the 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems*, St. Louis, MO, 2009

[C-8] Y. Fang, T. J. Pence, **X. Tan**, "Fiber-reinforced Conjugated Polymer Torsional Actuator and Its Nonlinear Elasticity Modeling," accepted for presentation at *the 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems*, St. Louis, MO, 2009

[C-9] **X. Tan**, H. K. Khalil, "Two-Time-Scale Averaging of Systems Involving Operators and Its Application to Adaptive Control of Hysteretic Systems," *Proceedings of the 2009 American Control Conference*, St. Louis, MO, pp. 4476-4481, 2009

[C-10] Q. Hu, D. R. Hedgepeth, L. Xu, **X. Tan**, "A Framework for Modeling Steady Turning of Robotic Fish," *Proceedings of the IEEE International Conference on Robotics and Automation*, Kobe, Japan, pp. 2669-2674, 2009

[C-11] Y. Fang, T. Pence, **X. Tan**, "A Large Deformation Nonlinear Model for Conjugated Polymer Actuators," Y. Bar-Cohen and T. Wallmersperger, editors, *Electroactive Polymer Actuators and Devices (EAPAD) 2009*, *Proc. of SPIE*, Vol. 7287, pp. 72871O:1-11, 2009

[C-12] Z. Chen, S. Shatara, **X. Tan**, "Modeling of Robotic Fish Propelled by an Ionic Polymer-Metal Composite Caudal Fin," Y. Bar-Cohen and T. Wallmersperger, editors, *Electroactive Polymer Actuators and Devices (EAPAD) 2009*, *Proc. of SPIE*, Vol. 7287, pp. 72871M:1-12, 2009

[C-13] Z. Chen, D. Hedgepeth, **X. Tan**, "Nonlinear Capacitance of Ionic Polymer-Metal Composites," Y. Bar-Cohen and T. Wallmersperger, editors, *Electroactive Polymer Actuators and Devices (EAPAD) 2009*, *Proc. of SPIE*, Vol. 7287, pp. 728715:1-12, 2009

[C-14] Z. Chen, D. Hedgepeth, **X. Tan**, "A Nonlinear Control-oriented Model for Ionic Polymer-Metal Composite Actuators," *Proceedings of the 47th IEEE Conference on Decision and Control*, Cancun, Mexico, pp. 1851-1856, 2008

[C-15] Y. Fang, **X. Tan**, "Design and Modeling of a Petal-Shape, Conjugated Polymer-Actuated Micropump," (**Invited**), (**Best Session Presentation Award** and **2008 DSCD Best Paper Award on Mechatronics**), *Proceedings of the 2008 ASME Dynamic Systems and Control Conference*, Ann Arbor, MI, Paper DSCC2008-2278, 2008

[C-16] **X. Tan**, "Swarming Control Using Parallel Gibbs Sampling," *Proceedings of the 2008 American Control Conference*, Seattle, WA, pp. 3701-3706, 2008

[C-17] **X. Tan**, O. Bennani, "Fast Inverse Compensation of Preisach-Type Hysteresis Operators Using Field-Programmable Gate Arrays," *Proceedings of the 2008 American Control Conference*, Seattle, WA, pp. 2365-2370, 2008

[C-18] E. Mbemmo, Z. Chen, S. Shatara, **X. Tan**, "Modeling of Biomimetic Robotic Fish Propelled by An Ionic Polymer-Metal Composite Actuator," *Proceedings of the 2008 IEEE International Conference on Robotics and Automation*, Pasadena, CA, pp. 689-694, 2008

[C-19] S. Shatara, **X. Tan**, E. Mbemmo, N. Gingery, "Experimental Investigation on Underwater Acoustic Ranging for Small Robotic Fish," *Proceedings of the 2008 IEEE International Conference on Robotics and Automation*, Pasadena, CA, pp. 712-717, 2008

[C-20] Z. Chen, **X. Tan**, "A Scalable Dynamic Model for Ionic Polymer-Metal Composite Actuators," Y. Bar-Cohen, editor, *Electroactive Polymer Actuators and Devices (EAPAD) X*, *Proceedings of the SPIE*, Vol. 6927, pp. 69270I:1-11, 2008

[C-21] Z. Chen, K. Kwon, **X. Tan**, "Design of Integrated IPMC/PVDF Sensory Actuator and Its Application to Feedback Control," (**Invited**), M. Tomizuka, editor, *Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, *Proceedings of the SPIE*, Vol. 6932, pp. 69321O:1-12, 2008

[C-22] Y. Fang, **X. Tan**, G. Alici, "Redox Level-Dependent Impedance Model for Conjugated Polymer Actuators," Y. Bar-Cohen, editor, *Electroactive Polymer Actuators and Devices (EAPAD) X*, *Proceedings of the SPIE*, Vol. 6927, pp. 69270Z:1-10, 2008

[C-23] Y. Fang, **X. Tan**, A. Temme, G. Alici, "Characterization and Modeling of Conjugated Polymer Sensors," Y. Bar-Cohen, editor, *Electroactive Polymer Actuators and Devices (EAPAD) X, Proceedings of the SPIE*, Vol. 6927, pp. 692709:1-9, 2008

[C-24] Z. Chen, **X. Tan**, "A Control-oriented, Physics-based Model for Ionic Polymer-Metal Composite Actuators," *Proceedings of the 46th IEEE Conference on Decision and Control*, New Orleans, LA, pp. 590-595, 2007

[C-25] J. Reynolds, **X. Tan**, H. K. Khalil, "Closed-Loop Analysis of Slow Adaptation in the Control of Unknown Dynamic Hysteretic Systems," *Proceedings of the 46th IEEE Conference on Decision and Control*, New Orleans, LA, pp. 3549-3554, 2007

[C-26] **X. Tan**, "Self-organization of Autonomous Swarms via Langevin Equation," *Proceedings of the 46th IEEE Conference on Decision and Control*, New Orleans, LA, pp. 1435-1440, 2007

[C-27] J. Ahrens, **X. Tan**, H. K. Khalil, "Multirate Sampled-Data Output Feedback Control of Smart Material Actuated Systems" (**Invited**), *Proceedings of the American Control Conference*, New York, NY, pp. 4327-4332, 2007

[C-28] **X. Tan**, H. K. Khalil, "Control of Unknown Dynamic Hysteretic Systems Using Slow Adaptation: Preliminary Results," (**Best Session Presentation Award**), *Proceedings of the American Control Conference*, New York, NY, pp. 3294-3299, 2007

[C-29] Z. Chen, **X. Tan**, A. Will, C. Ziel, "A Dynamic Model for Ionic Polymer-Metal Composite Sensors" (**Invited**), *Proceedings of the World Forum on Smart Materials and Smart Structures Technology*, Chongqin & Nanjing, China, 2007

[C-30] Y. Fang, **X. Tan**, Y. Shen, N. Xi, G. Alici, "A Scalable Model for Trilayer Conjugated Polymer Actuators and Its Experimental Validation," Y. Bar-Cohen, editor, *Electroactive Polymer Actuators and Devices (EAPAD) 2007*, *Proceedings of the SPIE*, Vol. 6524, pp. 652413:1-10, 2007

[C-31] Y. Fang, **X. Tan**, G. Alici, "Robust Adaptive Control of Conjugated Polymer Actuators," Y. Bar-Cohen, editor, *Electroactive Polymer Actuators and Devices (EAPAD) 2007*, *Proceedings of the SPIE*, Vol. 6524, pp. 652407:1-12, 2007

[C-32] **X. Tan**, D. Kim, E. Goodman, M. Shahinpoor, "A Hands-on Paradigm for EAP Education: Undergraduates, Pre-college Students, and Beyond," Y. Bar-Cohen, editor, *Electroactive Polymer Actuators and Devices (EAPAD) 2007*, *Proceedings of the SPIE*, Vol. 6524, pp. 652404:1-8, 2007

[C-33] **X. Tan**, D. Kim, N. Usher, D. Laboy, J.Jackson, A.Kapetanovic, J. Rapai, B. Sabadus, X. Zhou, "An Autonomous Robotic Fish for Mobile Sensing," *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, Beijing, China, pp. 5424-5429, 2006

[C-34] Y. Fang, **X. Tan**, "A Dynamic JKR Model with Application to Vibrational Release in Micromanipulation," *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, Beijing, China, pp. 1341-1346, 2006

[C-35] Z. Chen, Y. Shen, J. Malinak, N. Xi, **X. Tan**, "Hybrid IPMC/PVDF Structure for Simultaneous Actuation and Sensing," Y. Bar-Cohen, editor, *Smart Structures and Materials 2006: Electroactive Polymer Actuators and Devices (EAPAD)*, *Proceedings of SPIE*, San Diego, CA, Vol. 6168, pp. 435-443, 2006

[C-36] W. Xi, **X. Tan**, J. S. Baras, "A Stochastic Algorithm for Self-Organization of Autonomous Swarms," *Proceedings of the 44th IEEE Conference on Decision and Control & European Control Conference,* Seville, Spain, pp. 765-770, 2005

[C-37] W. Xi, **X. Tan**, J. S. Baras, "Gibbs Sampler-Based Path Planning for Autonomous Vehicles: Convergence Analysis," *Proceedings of the 16th IFAC World Congress*, Prague, Czech Republic, 2005

[C-38] W. Xi, **X. Tan**, J. S. Baras, "A Hybrid Scheme for Distributed Control of Autonomous Swarms," *Proceedings of the American Control Conference*, Portland, OR, pp. 3486-3491, 2005

[C-39] **X. Tan**, A. Modafe, R. Ghodssi, "Modeling of Velocity-Dependent Rolling Friction in Linear Microball Bearings," *Proceedings of World Tribology Congress III*, Washington, DC, Paper WTC2005-64025, 2005

[C-40] Z. Chen, **X. Tan**, M. Shahinpoor, "Quasi-static Positioning of Ionic Polymer-Metal Composite (IPMC) Actuators," *Proceedings of the IEEE/ASME International Conference on Advanced Intelligent Mechatronics,* Monterey, CA, pp. 60-65, 2005

[C-41] **X. Tan**, A. Modafe, R. Ghodssi, "An Empirical Model for Dynamic Friction in Microfabricated Linear Microball Bearings," *Proceedings of the American Control Conference*, Portland, OR, pp. 2463-2468, 2005

[C-42] J. S. Baras, **X. Tan**, "Control of Autonomous Swarms Using Gibbs Sampling," *Proceedings of the 43rd IEEE Conference on Decision and Control*, Atlantis, Paradise Island, Bahamas, pp. 4752-4757, 2004

[C-43] **X. Tan**, W. Xi, J. S. Baras, "Numerical Study on Joint Quantization and Control under Block-Coding," *Proceedings of the 43rd IEEE Conference on Decision and Control*, Atlantis, Paradise Island, Bahamas, pp. 4515-4520, 2004

[C-44] **X. Tan**, A. Modafe, R. Hergert, N. Ghalichechian, B. Shapiro, J. S. Baras, R. Ghodssi, "Vision-Based Microtribological Characterization of Linear Microball Bearings," *Proceedings of the ASME/STLE International Joint Tribology Conference (Special Symposium on Contact Phenomena in MEMS)*, Long Beach, CA, Paper TRIB2004-64334, 2004

[C-45] **X. Tan**, J. S. Baras, "Adaptive Inverse Control of Hysteresis in Smart Materials," *Proceedings of the IFAC Symposium on Nonlinear Control Systems*, Stuttgart, Germany, pp. 1553-1558, 2004

[C-46] **X. Tan**, J. S. Baras, "Recursive Identification of Hysteresis in Smart Materials," (**Best Session Presentation Award**), *Proceedings of the American Control Conference*, Boston, MA, pp. 3857-3862, 2004

[C-47] J. Jou, **X. Tan**, J. S. Baras, "A Parallel Virtual Queue Structure for Active Queue Management," *Proceedings of the 38th Annual Conference on Information Sciences and Systems*, Princeton, NJ, pp. 467-472, 2004

[C-48] J. S. Baras, **X. Tan**, P. Hovareshti, "Decentralized Control of Autonomous Vehicles," *Proceedings of the 42nd IEEE Conference on Decision and Control*, Maui, HI, pp. 1532-1537, 2003

[C-49] J. S. Baras, **X. Tan**, W. Xi, "Jointly Optimal Quantization, Estimation, and Control of Hidden Markov Chains," *Proceedings of the 42nd IEEE Conference on Decision and Control*, Maui, HI, pp. 1098-1103, 2003

[C-50] **X. Tan**, J. S. Baras, P. S. Krishnaprasad, "A Dynamic Model for Magnetostrictive Hysteresis," *Proceedings of the American Control Conference*, Denver, CO, pp. 1074-1079, 2003

[C-51] **X. Tan**, J. S. Baras, "A Robust Control Framework for Smart Actuators," *Proceedings of the American Control Conference*, Denver, CO, pp. 4645-4650, 2003

[C-52] **X. Tan**, J. S. Baras, "Modeling and Control of a Magnetostrictive Actuator," (**Finalist, Best Student Paper Award**), *Proceedings of the 41st IEEE Conference on Decision and Control*, Las Vegas, NV, pp. 866-872, 2002

[C-53] **X. Tan**, J. S. Baras, "Optimal Control of Hysteresis in Smart Actuators: A Viscosity Solutions Approach," C. J. Tomlin, M. R. Greenstreet, editors, *the Springer series Lecture Notes in Computer Science (LNCS) Vol. 2289, Proceedings of the 5th International Workshop on Hybrid Systems: Computation and Control*, pp. 451-464, 2002

[C-54] **X. Tan**, R. Venkataraman, P. S. Krishnaprasad, "Control of Hysteresis: Theory and Experimental Results," V. S. Rao, editor, *Smart Structures and Materials 2001: Modeling, Signal Processing, and Control in Smart Structures, Proceedings of SPIE*, Newport Beach, CA, Vol. 4326, pp. 101-112, 2001

[C-55] **X. Tan**, J. S. Baras, P. S. Krishnaprasad, "Fast Evaluation of Demagnetizing Field in Three Dimensional Micromagnetics Using Multipole Approximation," V. V. Varadan, editor, *Smart Structures and Materials 2000: Mathematics and Control in Smart Structures, Proceedings of SPIE*, Newport Beach, CA, Vol. 3984, pp. 195-201, 2000

[C-56] **X. Tan**, J. S. Baras, P. S. Krishnaprasad, "Computational Micromagnetics for Magnetostrictive Actuators", V. V. Varadan, editor, *Smart Structures and Materials 2000: Mathematics and Control in Smart Structures, Proceedings of SPIE*, Newport Beach, CA, Vol. 3984, pp. 162-173, 2000

[C-57] **X. Tan**, L. Tong, Z. Wang, Z. Yin, D. Zhang, "Characteristics and Firing Control of Thyristor Controlled Series Compensation Installations", *Proceedings of IEEE International Conference on Power System Technology*, Beijing, pp. 672-676, 1998

[C-58] **X. Tan**, N. Zhang, L. Tong, Z. Wang, "A Fuzzy Control Scheme for Thyristor Controlled Series Compensation in Transients of Power Systems," *Proceedings of IEEE International Conference on Power System Technology*, Beijing, pp. 441-445, 1998

[C-59] **X. Tan**, N. Zhang, L. Tong, Z. Wang, "A Fuzzy Control Scheme for Nonlinear Systems and its Application to Power Systems," *Proceedings of the First IEEE International Conference on Intelligent Processing Systems*, Beijing, pp. 281-285, 1997

Other Conference Presentations:

1. **X. Tan**, "Linking University Research to K-12 Education," oral presentation at *the 3rd Annual Internationalizing Michigan Education Conference: Where Globalization Meets School Improvement: Linking and Learning with Schools around the World*, East Lansing, MI, 2009

2. **X. Tan** (presenter), O. Bennani, "Embedded Inverse Compensation of Hysteresis in Smart Material Actuators" (**Invited**), oral presentation at *the 13th International Symposium on Applied Electromagnetics and Mechanics*, East Lansing, MI, 2007
3. Y. Fang, **X. Tan** (presenter), G. Alici, "Robust Adaptive Control of Conjugated Polymer Actuators" (**Invited**), oral presentation at *the SIAM Conference on Control and Its Applications*, San Francisco, CA, 2007
4. Z. Chen, **X. Tan**, "A Dynamic Sensing Model for Ionic Polymer Metal Composites," poster presentation at *Red Raider Mini-Symposium Series: Mathematical Modeling of Novel Materials and Devices*, Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX, 2006
5. **X. Tan**, "Almost Symplectic Runge-Kutta Schemes for Hamiltonian Systems" (**Invited**), oral presentation at *the 6th SIAM Conference on Control and Its Applications*, New Orleans, LA, 2005
6. **X. Tan**, "Preisach Operator-Based Modeling and Control of Hysteresis in Magnetostrictive Actuators" (**Invited**), oral presentation at *the 6th SIAM Conference on Control and Its Applications*, New Orleans, LA, 2005
7. R. V. Iyer (presenter), **X. Tan**, P. S. Krishnaprasad, "Approximate Inversion of the Preisach Hysteresis Operator with Application to Control of Smart Actuators," oral presentation at *the AMS 2005 Spring Central Section Meeting*, Lubbock, TX, 2005
8. M. Khbeis, **X. Tan (presenter)**, G. Metze, R. Ghodssi, "Microfabrication of a Pressure Sensor Array Using 3D Integration Technology", oral presentation at *the American Vacuum Society's 50th International Symposium,* Baltimore, MD, 2003
9. M. Khbeis, **X. Tan**, "Microfabrication of a Pressure Sensor Array Using 3D Integration Technology" (poster), (**Best Poster Award**), *MEMS Alliance Special Topics Symposium: Materials and Fabrication Technologies for MEMS and NEMS,* College Park, MD, 2003
10. N. Ghalichechian, M. Khbeis, Z. Ma, S. Moghaddam, **X. Tan**, "A Piezoresistive Pressure Sensor Cluster" (poster), *MEMS Alliance Special Topics Symposium: MEMS Technologies in Biotech and Commercial Applications,* The Johns Hopkins University Applied Physics Laboratory, 2002
11. P. S. Krishnaprasad (presenter), **X. Tan**, "Cayley Transforms in Magnetics", oral presentation at *the 5th SIAM Conference on Control and Its Applications,* San Diego, CA, 2001
12. **X. Tan (presenter)**, J. S. Baras, P. S. Krishnaprasad, "Computational Micromagnetics for Magnetostrictive Actuators", oral presentation at *the 3rd SIAM Conference on Mathematical Aspects of Materials Science*, Philadelphia, PA, 2000

INVENTIONS

1. **X. Tan**, "Gliding Robotic Fish," Invention disclosure to MSU Technologies (Reference Code TEC2010-0003), 2009
2. G. Zhu, **X. Tan**, L. D. Hung, "Novel Electroactive Polymer-based Flow Sensors for Automotive Systems," Invention disclosure to MSU Technologies (Reference Code TEC2009-0126), 2009
3. **X. Tan**, O. Bennani, "FPGA-based Embedded Compensation and Adaptation of Hysteresis in Smart Material Actuators," Invention disclosure to MSU Office of Intellectual Property (ID# 08-008F), 2007
4. **X. Tan**, D. Kim, "Wireless, Mobile Sensing Platform Based on Biomimetic Robotic Fish," Invention disclosure to MSU Office of Intellectual Property (ID# 07-143F), 2007

5. **X. Tan**, N. Xi, Z. Chen, Y. Shen, "Integrated Actuator Sensor Structure," U.S. patent pending, 2006

INVITED FULL-HOUR TALKS

1. "Electroactive Polymers as Artificial Muscles and Sensors: A Systems Perspective," Cymer Center for Control Systems and Dynamics, University of California, San Diego, CA, March 13, 2009, (Host: Prof. Raymond de Callafon)
2. "Electroactive Polymers as Artificial Muscles and Sensors: A Systems Perspective," Department of Mechanical Engineering, Ohio State University, Columbus, OH, January 9, 2009, (Host: Prof. Marcelo Dapino)
3. "Electroactive Polymers as Artificial Muscles and Sensors: A Systems Perspective," Robotics, Controls and Mechatronics Colloquium, University of Washington, Seattle, WA, October 31, 2008, (Host: Prof. Santosh Devasia)
4. "Adaptive Embedded Compensation of Hysteresis in Smart Material Actuators," Servo Technology, Western Digital Corporation, Lake Forest, CA, March 11, 2008, (Host: Dr. Wei Xi)
5. "Control of Hysteresis Nonlinearity in Smart Material Systems," Control Science Center of Excellence, Air Force Research Laboratory, Wright-Patterson AFB, OH, July 2, 2007, (Host: Dr. Raymond Holsapple) [Joint presentation with Prof. H. K. Khalil]
6. "Electroactive Polymers as Artificial Muscles and Sensors: Modeling, Control, and Robotic Applications," Institute of Modern Agriculture Science and Engineering, Tongji University, Shanghai, China, May 29, 2007, (Host: Prof. Lihong Xu)
7. "Electroactive Polymers as Artificial Muscles and Sensors: A Control Systems Perspective," Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor, MI, December 1, 2006, (Host: Prof. Jerome P. Lynch)
8. "Electroactive Polymers as Artificial Muscles and Sensors: A Control Systems Perspective," Red Raider Mini-Symposium Series (**Outstanding Early-Career Speaker**), Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX, November 10, 2006, (Host: Prof. Ram V. Iyer)
9. "Electroactive Polymers as Artificial Muscles and Sensors: A Control Systems Perspective," Center for Information and Systems Engineering, Boston University, Boston, MA, November 3, 2006, (Host: Prof. Sean Andersson)
10. "Electroactive Polymers as Artificial Muscles and Sensors: A Control Systems Perspective," Department of Mechanical Engineering, Michigan State University, East Lansing, MI, October 24, 2006, (Host: Prof. Patrick Kwon)
11. "Modeling and Control of Hysteresis in Smart Materials," Beijing University of Aeronautics and Astronautics, Beijing, China, October 12, 2006, (Host: Prof. Jianqin Mao)
12. "Electroactive Polymers as Artificial Muscles and Sensors: A Control Systems Perspective," Beijing University of Aeronautics and Astronautics, Beijing, China, October 12, 2006, (Host: Prof. Jianqin Mao)
13. "Modeling and Control of Smart Material Actuators," Mechanical Engineering Department Seminar, University of Nevada, Reno, NV, April 14, 2006, (Host: Prof. Kwang J. Kim)
14. "Modeling and Control of Hysteresis in Smart Materials," Center for Advanced Control Technologies Seminar, Cleveland State University, Cleveland, OH, October 28, 2005, (Host: Prof. Zhiqiang Gao)

15. "Modeling and Control of Hysteresis in Smart Materials," Applied Mathematics Seminar, Michigan State University, East Lansing, MI, April 7, 2005, (Host: Prof. Keith Promislow)
16. "Almost Symplectic Runge-Kutta Schemes for Hamiltonian Systems," Applied and Interdisciplinary Mathematics Seminar, University of Michigan, Ann Arbor, MI, March 18, 2005, (Hosts: Drs. Anthony Bloch and Melvin Leok)
17. "Modeling and Control of Hysteresis in Smart Materials," Control Seminar Series, University of Michigan, Ann Arbor, MI, November 12, 2004, (Host: Prof. James S. Freudenberg)
18. "Modeling and Control of Hysteresis in Smart Materials," Small Smart Systems Center, University of Maryland, College Park, MD, February 20, 2004, (Host: Prof. Elizabeth Smela)
19. "Modeling and Control of Hysteresis in Smart Materials," Department of Electrical and Computer Engineering, Michigan State University, East Lansing, MI, February 9, 2004, (Host: Prof. Subir Biswas)
20. "Structure-Preserving Numerical Integrators for Hamiltonian Systems," ISR Student-Faculty Colloquium, Institute for Systems Research, University of Maryland, College Park, MD, May 13, 2003, (Host: Prof. P. S. Krishnaprasad)

MEDIA COVERAGE OF RESEARCH & EDUCATION

1. "Grant to Expose Teachers to Research, Translate Excitement to Classroom," *MSU News*, `http://news.msu.edu/story/6664/`, August 6, 2009

   Related coverage:

   - "MSU Assistant Professor Develops Teacher-Training Program," *the State News*, `http://www.statenews.com/index.php/article/2009/08/msu_assistant_professor_develops_teacher-training_program`, August 10, 2009
   - "MSU Gets Grant for Unique Engineering Program," *Great Lakes IT Report*, `http://www.wwj.com/pages/4963659.php`, August 7, 2009

2. "Making Waves: Research Explores Uses for Robotic Fish," Cover story on *Networks* (MSU ECE magazine), Winter 2008/2009 issue
3. "Magnet Brings Toys to Class," *the State News*, `http://www.statenews.com/index.php/article/2007/07/magnet_brings_toys_to_class`, July 17, 2007
4. "Career Plan Links Teaching, Research," *MSU Today*, Summer 2006 issue

PROFESSIONAL MEMBERSHIP AND SERVICE

1. Professional membership

   - Member, IEEE
   - Member, ASME

2. Editorship

   - Associate Editor, Automatica, April 1, 2008 - March 31, 2011
   - Guest Editor (with Dr. Ram V. Iyer), IEEE Control Systems Magazine, special section on Modeling and Control of Hysteresis (February 2009 issue)
   - Member, IEEE Control Systems Society Conference Editorial Board, 2007 -

- Member, Editorial Board of International Journal of Applied Electromagnetics and Mechanics, for special issue of Proceedings of 13th International Symposium on Applied Electromagnetics and Mechanics (ISEM'2007)
- Associate Editor, ISA Conference Editorial Board for American Control Conference (ACC'2005, 2006)

3. Chair of conferences

   - Program Chair, the 15th International Conference on Advanced Robotics (ICAR' 2011)

4. Conference program committees and organizing committees

   - Program committee member, the 8th World Congress on Intelligent Control and Automation (WCICA'10)
   - Program committee member, the 6th International Conference on Informatics in Control, Automation and Robotics (ICINCO'09)
   - Local Arrangement Chair, IEEE Nanotechnology Materials and Devices Conference (NMDC'09)
   - Organizing committee member and co-chair for poster sessions, 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'2009)
   - International program committee member, 2009 International Symposium on Intelligent Control (ISIC'2009)
   - Program committee member, American Control Conference (ACC'2008, ACC'2010)
   - International program committee member, ASME/IEEE International Conference on Mechatronic and Embedded Systems and Applications (MESA'2007,MESA'2008)
   - Organizing committee member and co-chair for poster sessions, IEEE International Conference on Robotics and Biomimetics (ROBIO'2008)
   - Organizing committee member, International Symposium on Applied Electromagnetics and Mechanics (ISEM'2007)
   - Program committee member, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'2006)
   - Organizing committee member & Co-chair for local arrangements and awards, IEEE International Conference on Electro/Information Technology (EIT'2006)
   - Program committee member, IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM'2005, AIM'2007)

5. Conference panels, workshops, and special sessions

   - Co-organizer (with Dr. Maurizio Porfiri), invited session on "Ionic Polymer-Metal Composite (IPMC) Sensors and Actuators," 2nd Annual ASME Dynamic Systems and Control Conference, Hollywood, CA, 2009
   - Organizer, invited session on "Smart Materials", International Symposium on Applied Electromagnetics and Mechanics, East Lansing, MI, 2007
   - Organizer (with Dr. Kwang J. Kim), invited session on "Electroactive Polymer Sensors and Actuators", World Forum on Smart Materials and Smart Structures Technology, Chongqin & Nanjing, China, 2007
   - Organizer (with Dr. Ram V. Iyer), special session on "Modeling, Analysis and Control of Systems with Hysteresis", American Control Conference, New York, NY, 2007

- Invited instructor, tutorial on "Electro-Active Polymer Actuators and Sensors in Robotics", IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China, 2006
- Panelist, NSF/ARO/AACC session "Early Career Development", American Control Conference, Minneapolis, MN, 2006

6. Conference session chair/co-chair

   - IEEE/RSJ International Conference on Intelligent Robots and Systems, St. Louis, MO (2009, Sessions MoIIT6, TuIT2, TuIIT13)
   - American Control Conference, St. Louis, MO (2009, Session FrA18)
   - IEEE International Conference on Robotics and Automation, Kobe, Japan (2009, Session FrC11)
   - 16th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring: Electroactive Polymer Actuators and Devices (EAPAD XI), San Diego, CA (2009, Session 8)
   - American Control Conference, Seattle, WA (2008, Session WeC03)
   - International Symposium on Applied Electromagnetics and Mechanics, East Lansing, MI (2007, Session M-PM-2)
   - American Control Conference, New York, NY (2007, Session FrA03)
   - World Forum on Smart Materials and Smart Structures Technology, Chongqing & Nanjing, China (2007, Session S27)
   - IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China (2006, Session FP1-13)
   - Nanomedicine Conference, East Lansing, MI (2006, Hot Topic Session in Symposium II)
   - American Control Conference, Portland, OR (2005, Session FrA03)
   - American Control Conference, Denver, CO (2003, Session FM11)
   - Third SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, PA (2000, Session CP11)

7. Reviewer for government agencies

   - Panelist, NSF, 2004; 2006 (twice); 2008; 2009 (three times)
   - Reviewer, NSF, 2005

8. Reviewer for archival journals

   - ASME Journal of Dynamic Systems, Measurement and Control
   - Automatica
   - Chaos: An Interdisciplinary Journal of Nonlinear Science
   - Continuum Mechanics and Thermodynamics
   - Discrete and Continuous Dynamical Systems
   - IEEE Control Systems Magazine
   - IEEE Signal Processing Letters
   - IEEE Transactions on Automatic Control

- IEEE Transactions on Control Systems Technology
- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Magnetics
- IEEE/ASME Transactions on Mechatronics
- IEEE Transactions on Neural Networks
- IEEE Transactions on Robotics
- IEEE Transactions on Systems, Man, and Cybernetics C
- International Journal for Numerical Analysis and Modeling
- International Journal on Mechatronics
- International Journal of Control
- International Journal of Modelling and Simulation
- Journal of Computational and Applied Mathematics
- Journal of Fluids and Structures
- Journal of Intelligent Material Systems and Structures
- Journal of Magnetism and Magnetic Materials
- Journal of Vacuum Science and Technology A
- Journal of Zhejiang University Science A
- Materials Science and Engineering: C
- Optimal Control, Applications and Methods
- Physica B
- Polymer International
- Sensors and Actuators A: Physical
- SIAM Journal on Applied Mathematics
- Smart Materials and Structures

9. Reviewer for publishers

   - Pan Stanford Publishing, Singapore, 2008
   - McGraw-Hill Companies, 2007
   - Springer, 2006

10. Reviewer for conferences

    - American Control Conference (ACC 2004, 2005, 2007, 2008, 2009)
    - ASME Dynamic Systems and Control Conference (DSCC 2009)
    - European Control Conference (ECC 2007, 2009)
    - IEEE Conference on Control Applications (CCA 2004, 2006)
    - IEEE Conference on Decision and Control (CDC 2004, 2005, 2006, 2007)
    - IEEE Conference on Robotics and Automation (ICRA 2008)
    - IEEE International Conference on Electro/Information Technology (EIT 2006)
    - IEEE International Conference on Networks (ICON 2004)

- IEEE International Conference on Robotics and Biomimetics (ROBIO 2008)
- IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2005, AIM 2007)
- IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA 2008)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2006, 2008)
- IFAC World Congress (2005, 2008)
- Joint International Symposium on Intelligent Control & 13th Mediterranean Conference on Control and Automation (ISIC-MED 2005)

ADVISING

1. Ph.D. student advisees:

   - Feitian Wang, Ph.D. program, August 2009 - present. Topic: Robotic fish.
   - Jianxun Wang, Ph.D. program, August 2009 - present. Topic: Robotic fish.
   - Hong Lei, Ph.D. program, August 2009 - present. Topic: Ionic polymer-metal composite cilia as micro sensors and actuators.
   - Alex Esbrook (Co-advisor: Dr. Hassan Khalil), Ph.D. program, Spring 2009 - present. Topic: Control of hysteretic systems with application to nanopositioning.
   - Freddie Alequin-Ramos, Ph.D. program, August 2008 - present. Topic: Robotic fish.
   - Zheng Chen, Ph.D., January 2005 - August 2009. Dissertation: *Ionic Polymer-Metal Composite Artificial Muscles and Sensors: A Control Systems Perspective*. Currently with University of Virginia (Research Associate).
   - Yang Fang, Ph.D., August 2005 - August 2009. Dissertation: *Conjugated Polymer Actuators and Sensors: Modeling, Control, and Applications*. Currently with Southwest Research Institute.
   - Jeff Ahrens (Principal advisor: Dr. Hassan Khalil), Ph.D., January 2005 - December 2006. Dissertation: *Design and Performance Tradeoffs of High-Gain Observers with Applications to Smart Material Actuated Systems*. Currently with Sullivan Park Research Center, Corning Incorporated.

2. M.S. student advisees

   - Dawn Hedgepeth, M.S. program, May 2009 - present. Topic: Robotic fish.
   - Stephan Shatara, M.S., August 2006 - December 2008. Thesis: *Development of Small Biomimetic Robotic Fish with Onboard Fine-Grained Localization*. Currently with Motorola.
   - Nathan Usher, M.S., January 2006 - August 2007. Thesis: *Digital Low-Level Radio Frequency Control and Microphonics Mitigation of Superconducting Cavities*. Currently with the National Superconducting Cyclotron Laboratory at Michigan State University.

3. Postdoctoral advisees

   - Dr. Mart Anton, August 2008 - June 2009. Topic: Computational fluid dynamics (CFD) modeling of robotic fish.

4. Exchange student advisees

- Stephan Henneberger, University of Kaiserslautern, Germany, August 2007 - February 2008. Study thesis: *A Sliding Discrete Fourier Transform (SDFT)-based Localization System for Small Fish Robots.*
- Ernest Mbemmo, University of Kaiserslautern, Germany, January 2007 - September 2007. Master's thesis: *Design and Modeling of Biomimetic Robotic Fish Propelled by an IPMC.*
- Alex Will, University of Kaiserslautern, Germany, May 2006 - September 2006. Study thesis: *Dynamic Sensing Model for Ionic Polymer Metal Composites.*

5. Undergraduate advisees

   - Michael Carpenter, May 2009 - present. Topic: Robotic fish.
   - Matt Guibord, May 2009 - present. Topic: Nanopositioning control.
   - Thomas Ganley, May 2009 - present. Topic: Ionic polymer-metal composite sensors.
   - Alex Esbrook, May 2008 - December 2008. Topic: Collaborative control of multi-agent systems.
   - Chris Gliniecki, May 2008 - December 2008. Topic: Robotic fish.
   - Andrew Temme, October 2006 - April 2008. Topic: Electroactive polymer sensors.
   - Ki-Yong Kwon, August 2006 - December 2007. Topic: Integrated sensory feedback for ionic polymer-metal composite actuators.
   - Nate Gingery, May 2007 - August 2007. Topic: Localization of robotic fish.
   - Omar Bennani, January 2006 - December 2007. Topic: Embedded control of hysteretic systems.
   - Bryan Thomas, August 2006 - April 2007. Topic: Localization of robotic fish.
   - Roy Dong, August 2006 - April 2007. Topic: Robotic fish educational kit.
   - Daniel Laboy, August 2005 - December 2006. Topic: Electroactive polymer-based robots.
   - Jason Malinak, May 2005 - March 2006. Topic: Integrated sensory feedback for ionic polymer-metal composite actuators.
   - Christopher Ziel, May 2005 - March 2006. Topic: Electroactive polymer sensors.

6. Teacher advisees

   - John Thon (Holt Junior High School, Holt, MI), May 2008 - present. Topic: Research on robotic fish and related curriculum development.

7. High-school student advisees

   - Cody Thon (Holt High School, Holt, MI), September 2009 - present. Topic: Robotic fish.

8. Member of thesis committees

   - Chi Zhang (Advisor: Dr. Ning Xi/ECE), Ph.D. Program, Spring 2008 -
   - Shahid Nazrulla (Advisor: Dr. Hassan K. Khalil/ECE), Ph.D. Program, Fall 2007 -
   - Alexis Ball (Advisor: Dr. Hassan K. Khalil/ECE), Ph.D. Program, Summer 2007 -
   - Hua Deng (Advisor: Dr. Thomas Pence/ME), Ph.D. program, Fall 2006 - Fall 2009
   - Attaullah Memon (Advisor: Dr. Hassan K. Khalil/ECE), Ph.D. program, Fall 2007 - Summer 2009

- Li Sun (Advisor: Dr. Patrick Kwon/ME), Ph.D. program, Fall 2006 - Spring 2009
- Erin Bosch (Advisor: Dr. Randy Showerman/Department of Community, Agriculture, Recreation and Resource Studies), M. S. program, Spring 2009 -
- Matt McGill (Advisor: Dr. Betty Cheng/CSE), M. S. program, Summer 2008 -
- James Reynolds (Advisor: Dr. Hassan K. Khalil/ECE), M.S., 2007
- Luma Vasiljevic (Advisor: Dr. Hassan K. Khalil/ECE), M.S., 2007
- Tarik H. Kandil (Advisor: Dr. Hassan K. Khalil/ECE), M.S., 2005

UNIVERSITY/COLLEGE/DEPARTMENT SERVICE

1. University committees
   - University Appeals Board, March 2007 -
2. Departmental committees
   - Advisory Committee of ECE Department, Fall 2008 -
   - ECE Seminar Series Coordinator, Fall 2006 - Spring 2008
   - Graduate Studies Committee, Fall 2005 - Spring 2006
   - Graduate Admissions Recruiting & Financial Aids Committee (GARFAC), Fall 2005 - Spring 2006, Fall 2009 -
3. Ad hoc committees/services
   - Connector Faculty for engineering freshmen, September 2009 -
   - The ECE Department Strategic Planning Committee, January 2009 -
   - College of Engineering Web Design Committee, June 2007 - August 2007
   - Search Committee for Recruitment and Retention Coordinator, Diversity Programs Office, Michigan State University, 2005 - 2006
   - Faculty Advisor, Undergraduate Research Program, Diversity Programs Office, Michigan State University, 2005
4. Outreach and community service
   - Director, NSF-funded Research Experiences for Teachers (RET) Site on Bio-Inspired Technology and Systems (BITS), MSU, September 2009 -
   - Representing MSU in advocating for national science funding at the 14th Annual Coalition for National Science Funding (CNSF) Exhibition and Reception, Capitol Hill, June 25, 2008
   - Conducting interactive lectures and lab tours for various outreach programs: Detroit-Area Pre-College Engineering Program (DAPCEP) (2005, 2006, 2009), WIMS for Teens Program (2005 - 2009), Women in Engineering Program (2006 -2009), Grandparents University Program (2007 - 2009), High School Engineering Institute (2008)
   - Engineering faculty representative, Career Day at Chippewa Middle School Okemos, MI, 2006, 2007
   - Smart Microsystems Lab is a designated Engineering Tour stop for prospective students and their parents (2008 -)

CONSULTING SERVICE

1. Lear Corporation, 2005