

CURRICULUM VITAE

Qingsong Xu

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EDUCATION

- 12/2004–08/2008 *Ph.D. in Electromechanical Engineering*, University of Macau, Macao SAR, China
- 11/2002–09/2004 *M.Sc. in Electromechanical Engineering*, University of Macau, Macao SAR, China
- 09/1998–08/2002 *B.Sc. in Mechatronics Engineering*, Beijing Institute of Technology, Beijing, China

PROFESSIONAL EXPERIENCES

- 08/2015– *Associate Professor*, Department of Electromechanical Engineering, University of Macau, Macao SAR, China
- 08/2010–08/2015 *Assistant Professor*, Department of Electromechanical Engineering, University of Macau, Macao SAR, China
- 11/2016–12/2016 *Visiting Scholar*, Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, California, USA
- 09/2016–10/2016 *Visiting Scholar*, School of Engineering, RMIT University, Melbourne, Australia
- 07/2012–07/2012 *Visiting Scholar*, Department of Electrical and Computer Engineering, National University of Singapore, Singapore
- 06/2011–07/2011 *Visiting Scholar*, Institute of Robotics and Intelligent Systems, Swiss Federal Institute of Technology Zurich, Switzerland

AWARDS AND HONORS

- 08/2017 *FST Research Excellence Award 2016/2017*, Faculty of Science and Technology, University of Macau
- 10/2016 *Third Prize of Technological Invention Award*, Macao Science and Technology Awards 2016, Macao SAR, China
- 08/2016 *Toshio Fukuda Best Paper Award in Mechatronics*, 2016 IEEE International Conference on Advanced Robotics and Mechatronics (ARM), Macau, China
- 07/2016 *Gold Medal Award*, The 5th Macao International Innovation and Invention Expo 2016, Macau, China
- 10/2014 *Second Prize of Natural Science Award*, Macao Science and Technology Awards 2014, Macao SAR, China
- 07/2014 *Best Paper Award Finalist in Information*, 2014 IEEE International Conference on Information and Automation (ICIA 2014), Hailar, Inner Mongolia, China
- 07/2005 *Best Paper Award Finalist in Mechatronics*, 2005 IEEE International Conference on Mechatronics and Automation (ICMA 2005), Niagara Falls, Ontario, Canada

TEACHING ACTIVITIES

- Undergraduate Courses
 - ▷ EMEB223: Mechatronics
 - ▷ EMEB312: Control Engineering
 - ▷ MECH483: Measurement Technique and Data Processing
 - ▷ MECH471: Computational Methods
 - ▷ MECH451: Control and Automation
 - ▷ MECH404: Control Techniques

- ▷ MECH407: Quality Assurance and Control
- ▷ MECH415: Project
- Graduate Courses
 - ▷ ELME701: Introduction to Research
 - ▷ ELME731: Micromechatronics and Applications
 - ▷ ELME732: Intelligent Theory and Engineering Applications

RESEARCH INTERESTS

- MEMS/NEMS, Micro/Nano Mechatronics, Micro/Nano Systems
- Compliant Mechanisms, Soft Robots, Force and Tactile Sensing
- Sensors and Actuators, Smart Materials and Structures, Robotics and Automation
- Computational Intelligence, Intelligent Control, Robust and Adaptive Control
- Prognosis and Diagnosis, Structural Health Monitoring, Energy Harvesting

RESEARCH GRANTS

Total grant over MOP 12,000,000

- *External Grants*
 - ▷ Development of Novel Haptic Feedback-Based Robotic Micromanipulation System for Biological Cell Manipulation, P.I.: Qingsong Xu, funded by the Macao Science and Technology Development Fund, Grant No.: 179/2017/A3, March 2018 – March 2021 (under review)
 - ▷ Design and Development of a Novel Piezoelectric Energy Harvester, P.I.: Qingsong Xu, funded by the Macao Science and Technology Development Fund, Grant No.: 143/2016/A, April 2017 – July 2018.
 - ▷ Design and Fabrication of Constant-Force Microgripper for Micromanipulation, P.I.: Qingsong Xu, funded by the Macao Science and Technology Development Fund, Grant No.: 090/2015/A3, March 2016 – March 2018.
 - ▷ Design and Control of Fully Compliant 3-DOF Constant-Force Micropositioning Stage for Cell Microinjection with Minimal Damage, P.I.: Qingsong Xu, funded by National Natural Science Fund of China, Grant No.: 51575545, January 2016 – December 2019
 - ▷ Microforce Sensing and Control System and Its Application in Automated Bio-Micromanipulation, P.I.: Qingsong Xu, funded by the Macao Science and Technology Development Fund, Grant No.: 052/2014/A1, January 2015 – January 2017
 - ▷ Design and Development of Large-Range Microgripper For Microassembly, P.I.: Qingsong Xu, funded by the Macao Science and Technology Development Fund, Grant No.: 070/2012/A3, June 2013 – June 2015
 - ▷ Novel Design and Control of a Micro/Nano-Positioning System with Large Motion Range, P.I.: Qingsong Xu, funded by the Macao Science and Technology Development Fund, Grant No.: 024/2011/A, October 2011 – December 2012
- *Internal Grants*
 - ▷ Design and Development of New Adjustable Zero-Stiffness Compliant Micropositioning System,, P.I.: Qingsong Xu, funded by the Research Committee of University of Macau, Grant No.: MYRG2018-00034-FST, July 2018 – July 2021 (under review)
 - ▷ Microforce Sensing and Control System and Its Application in Automated Bio-Micromanipulation, P.I.: Qingsong Xu, funded by the Research Committee of University of Macau, Grant No.: MRG010/XQS/2015/FST, January 2015 – January 2017
 - ▷ Design and Development of Novel Rotary Precision Micropositioning Systems, P.I.: Qingsong Xu, funded by the Research Committee of University of Macau, Grant No.: MYRG078(Y1-L2)-FST13-XQS, May 2013 – April 2016
 - ▷ Development of Novel MEMS-Based Microgrippers for Micromanipulation, P.I.: Qingsong Xu, funded by the Research Committee of University of Macau, Grant No.: MYRG083(Y1-L2)-FST12-XQS, June 2012 – May 2015
 - ▷ Precise Motion Control of a Micro/Nano-Positioning Stage with Piezoelectric Actuation, P.I.: Qingsong Xu, funded by the Research Committee of University of Macau, Grant No.: SRG006-FST11-XQS, January 2011 – December 2011

PUBLICATIONS

Summary

Type	Number
Refereed Books	3
Refereed Book Chapters	11
Refereed Journal Publications	90
Refereed Conference Publications	122
Editorials	5
Patents	8
TOTAL	239

Database	H-index	Citation Times
ISI Web of Science	29	2365
Google Scholar	37	4432

A. REFEREED BOOKS

• 2018

3. Qingsong Xu, "Micromachines for Biological Micromanipulation," Springer, 2018.

• 2016

2. Qingsong Xu, "Design and Implementation of Large-Range Compliant Micropositioning Systems," John Wiley & Sons, 2016, ISBN: 978-1-119-13143-4.

• 2015

1. Qingsong Xu and K. K. Tan, "Advanced Control of Piezoelectric Micro-/Nano-Positioning Systems," Springer, 2015, ISBN: 978-3-319-21622-5.

B. REFEREED JOURNAL AND ARTICLES

• 2018

90. P. Wang and Qingsong Xu, "Design and Testing of a Flexure-Based Constant-Force Stage for Biological Cell Micromanipulation," *IEEE Transactions on Automation Science and Engineering*, (in press), (SCI/EI).
89. X. Zhang and Qingsong Xu, "Design, fabrication and testing of a novel 3-DOF large-stroke parallel micro/nano-positioning stage," *Robotics and Computer Integrated Manufacturing*, (in press), (SCI/EI).
88. X. Zhang and Qingsong Xu, "Design and Testing of a Novel 3-DOF Spatial Flexure Parallel Micropositioning Stage," *International Journal of Precision Engineering and Manufacturing*, (in press), (SCI/EI).
87. G. Wang and Qingsong Xu, "Adaptive Terminal Sliding Mode Control for Motion Tracking of a Micropositioning System," *Asian Journal of Control*, vol. 20, no. 5, pp. 1-12, September 2018, (SCI/EI).
86. P. Wang and Qingsong Xu, "Design and modeling of constant-force mechanisms: A survey," *Mechanism and Machine Theory*, vol. 119, pp. 1-21, January 2018, (SCI/EI).

• 2017

85. S. Yang, Qingsong Xu, and Z. Nan, "Design and Development of a Dual-axis Force Sensing MEMS Microgripper," *Journal of Mechanisms and Robotics, Transactions of the ASME*, vol. 9, no. 6, pp. 061011, December 2017, (SCI/EI).
84. Qingsong Xu, "Continuous Integral Terminal Third-Order Sliding Mode Motion Control for Piezoelectric Nanopositioning System," *IEEE/ASME Transactions on Mechatronics*, vol. 22, no. 4, pp. 1828-1838, August 2017, (SCI/EI).
83. Y. Wei and Qingsong Xu, "Design of a PVDF-MFC Force Sensor for Robot-Assisted Single Cell Injection," *IEEE Sensors Journal*, vol. 17, no. 13, pp. 3975-3982, July 2017, (SCI/EI).
82. G. Wang and Qingsong Xu, "Design and Development of a Piezo-Driven Microinjection System with Force Feedback," *Advanced Robotics*, vol. 31, no. 23-24, December 2017, doi: 10.1080/01691864.2017.1362996, (SCI/EI).
81. S. Yang and Qingsong Xu, "A Review on Actuation and Sensing Techniques for MEMS-Based Microgrippers," *Journal of Micro-Bio Robotics*, vol. 13, no. 1-4, pp. 1-14, October 2017, (EI).
80. G. Wang and Qingsong Xu, "Design and Precision Position/Force Control of a Piezo-Driven Microinjection System," *IEEE/ASME Transactions on Mechatronics*, vol. 22, no. 4, pp. 1744-1754, August 2017, (SCI/EI).

79. Qingsong Xu and Z. Cao, "Piezoelectric positioning control with output-based discrete-time terminal sliding mode control," *IET Control Theory & Applications*, vol. 11, no. 5, pp. 694-702, March 2017, (SCI/EI).
 78. Y. Liu, Y. Zhang, and Qingsong Xu, "Design and Control of a Novel Compliant Constant-Force Gripper Based on Buckled Fixed-Guided Beams," *IEEE/ASME Transactions on Mechatronics*, vol. 22, no. 1, pp. 476-486, February 2017, (SCI/EI).
 77. Qingsong Xu, "Precision Motion Control of Piezoelectric Nanopositioning Stage With Chattering-Free Adaptive Sliding Mode Control," *IEEE Transactions on Automation Science and Engineering*, vol. 14, no. 1, pp. 238-248, January 2017, (SCI/EI).
 76. Y. Zhang and Qingsong Xu, "Adaptive Sliding Mode Control With Parameter Estimation and Kalman Filter for Precision Motion Control of a Piezo-Driven Microgripper," *IEEE Transactions on Control Systems Technology*, vol. 25, no. 2, pp. 728-735, March 2017, (SCI/EI).
 75. Qingsong Xu, "Design and Development of a Novel Compliant Gripper With Integrated Position and Grasping/Interaction Force Sensing," *IEEE Transactions on Automation Science and Engineering*, vol. 14, no. 3, pp. 1415-1428, July 2017, (SCI/EI). (★ ESI Highly Cited Paper 2017 ★)
 74. S. Wan, Y. Zhang, and Qingsong Xu, "Design and development of a new large-stroke XY compliant micropositioning stage," *Proceedings of the Institution of Mechanical Engineers. Part C, Journal of Mechanical Engineering Science*, vol. 231, no. 17, pp. 3263-3276, September 2017, (SCI/EI).
 73. X. Zhang, Y. Zhang, and Qingsong Xu, "Design and control of a novel piezo-driven XY parallel nanopositioning stage," *Microsystem Technologies*, vol. 23, no. 4, pp. 1067-1080, April 2017, (SCI/EI).
 72. Qingsong Xu, "Design of a Large-Stroke Bistable Mechanism for the Application in Constant-Force Micropositioning Stage," *Journal of Mechanisms and Robotics, Transactions of the ASME*, vol. 9, no. 1, pp. 011006-1-011006-7, February 2017, (SCI/EI).
 71. P. Wang and Qingsong Xu, "Design of a flexure-based constant-force XY precision positioning stage," *Mechanism and Machine Theory*, vol. 108, pp. 1-13, February 2017, (SCI/EI).
- **2016**
70. Qingsong Xu, "Digital Integral Terminal Sliding Mode Predictive Control of Piezoelectric-Driven Motion System," *IEEE Transactions on Industrial Electronics*, vol. 63, no. 6, pp. 3976-3984, June 2016, (SCI/EI).
 69. S. Yang and Qingsong Xu, "Design of a microelectromechanical systems microgripper with integrated electrothermal actuator and force sensor," *International Journal of Advanced Robotic Systems*, vol. 13, no. 5, pp. 1729881416663375, 2016, (SCI/EI).
 68. Y. Liu and Qingsong Xu, "Mechanical Design, Analysis and Testing of a Large-Range Compliant Microgripper," *Mechanical Sciences*, vol. 7, pp. 119-126, April 2016, (SCI/EI).
 67. S. Wan and Qingsong Xu, "Design and analysis of a new compliant XY micropositioning stage based on Roberts mechanism," *Mechanism and Machine Theory*, vol. 95, pp. 125-139, January 2016, (SCI/EI).
 66. K. He, M. Jia, and Qingsong Xu, "Optimal Sensor Deployment for Manufacturing Process Monitoring Based on Quantitative Cause-Effect Graph," *IEEE Transactions on Automation Science and Engineering*, vol. 13, no. 2, pp. 963-975, April 2016, (SCI/EI).
 65. Z. Zhao, Qingsong Xu, and M. Jia, "Sensor network optimization of gearbox based on dependence matrix and improved discrete shuffled frog leaping algorithm," *Natural Computing*, vol. 15, no. 4, pp. 653-664, December 2016, (SCI/EI).
 64. Z. Zhao, Qingsong Xu, and M. Jia, "Improved Shuffled Frog Leaping Algorithm-Based BP Neural Network and Its Application in Bearing Fault Diagnosis," *Neural Computing & Applications*, vol. 27, no. 2, pp. 375-385, February 2016, (SCI/EI).
- **2015**
63. Qingsong Xu, "Piezoelectric Nanopositioning Control Using Second-Order Discrete-Time Terminal Sliding Mode Strategy," *IEEE Transactions on Industrial Electronics*, vol. 62, no. 12, pp. 7738-7748, December 2015, (SCI/EI).
 62. Qingsong Xu, "Design, Fabrication, and Testing of an MEMS Microgripper With Dual-Axis Force Sensor," *IEEE Sensors Journal*, vol. 15, no. 10, pp. 6017-6026, October 2015, (SCI/EI).
 61. Y. Liu and Qingsong Xu, "Design of a Flexure-Based Auto-Focusing Device for a Microscope," *International Journal of Precision Engineering and Manufacturing*, vol. 16, no. 11, pp. 2271-2279, October 2015, (SCI/EI).

60. K. He, Qingsong Xu, and M. Jia, "Modeling and Prediction of Surface Roughness in Hard Turning Using Bayesian Inference-Based HMM-SVM Model," *IEEE Transactions on Automation Science and Engineering*, vol. 12, no. 3, pp. 1092-1103, July 2015, (SCI/EI).
59. Qingsong Xu, "Design of a Large-Range Compliant Rotary Micropositioning Stage With Angle and Torque Sensing," *IEEE Sensors Journal*, vol. 15, no. 4, pp. 2419-2430, April 2015, (SCI/EI).
58. Qingsong Xu, "Robust Impedance Control of a Compliant Microgripper for High-Speed Position/Force Regulation," *IEEE Transactions on Industrial Electronics*, vol. 62, no. 2, pp. 1201-1209, February 2015, (SCI/EI).
57. Qingsong Xu, "Digital Sliding Mode Prediction Control of Piezoelectric Micro-/Nanopositioning System," *IEEE Transactions on Control Systems Technology*, vol. 23, no. 1, pp. 297-304, January 2015, (SCI/EI).
56. Y. Wei and Qingsong Xu, "An Overview of Micro-Force Sensing Techniques," *Sensors & Actuators: A. Physical*, vol. 234, no. 1, pp. 359-374, October 2015, (SCI/EI).
- **2014**
 55. Qingsong Xu, "Design and Smooth Position/Force Switching Control of a Miniature Gripper for Automated Microhandling," *IEEE Transactions on Industrial Informatics*, vol. 10, no. 2, pp. 1023-1032, May 2014, (SCI/EI).
 54. Qingsong Xu, "Design and testing of a novel multi-stroke micropositioning system with variable resolutions," *Review of Scientific Instruments*, vol. 85, no. 2, pp. 025002-1-025002-12, February 2014, (SCI/EI).
 53. Qingsong Xu, "Digital Sliding Mode Control of Piezoelectric Micropositioning System Based on Input-Output Model," *IEEE Transactions on Industrial Electronics*, vol. 61, no. 10, pp. 5517-5526, May 2014, (SCI/EI).
 52. Qingsong Xu, "A Comparison Study of Extreme Learning Machine and Least Squares Support Vector Machine for Structural Impact Localization," *Mathematical Problems in Engineering*, vol. 2014, Article ID 906732, 8 pages, doi: 10.1155/2014/906732, 2014 (SCI/EI).
 51. Qingsong Xu, "Output-based discrete-time sliding mode control for a piezoelectrically actuated system," *Nonlinear Dynamics*, vol. 76, no. 1, pp. 551-559, April 2014, (SCI/EI).
 50. Qingsong Xu, "Impact detection and location for a plate structure using least squares support vector machines," *Structural Health Monitoring*, vol. 13 no. 1, pp. 5-18, January 2014, (SCI/EI).
 49. Qingsong Xu, "Design and Development of a Compact Flexure-Based XY Precision Positioning System with Centimeter Range," *IEEE Transactions on Industrial Electronics*, vol. 61, no. 2, pp. 893-903, February 2014, (SCI/EI). (★ ESI Highly Cited Paper 2016 ★)
 48. Qingsong Xu, "A novel compliant micropositioning stage with dual ranges and resolutions," *Sensors & Actuators: A. Physical*, vol. 205, pp. 6-14, January 2014, (SCI/EI).
 47. Y. Jia, M. Jia, and Qingsong Xu, "A Dual-Axis Electrostatically Driven MEMS Microgripper," *International Journal of Advanced Robotic Systems*, vol. 11, Article ID 187, doi: 10.5772/59677, 2014, (SCI/EI).
 46. W. Ai and Qingsong Xu, "New Structural Design of a Compliant Gripper Based on the Scott-Russell Mechanism," *International Journal of Advanced Robotic Systems*, vol. 11, Article ID 192, doi: 10.5772/59655, 2014, (SCI/EI).
 45. Z. Chi and Qingsong Xu, "Recent Advances in the Control of Piezoelectric Actuator," *International Journal of Advanced Robotic Systems*, vol. 11, Article ID 182, doi: 10.5772/59099, 2014, (SCI/EI).
 44. S. Wan and Qingsong Xu, "A Survey on Recent Development of Large-Stroke Compliant Micropositioning Stage," *International Journal of Robotics and Automation Technology*, vol. 1, no. 1, pp. 19-35, 2014.
 43. Z. Chi, M. Jia, and Qingsong Xu, "Fuzzy PID Feedback Control of Piezoelectric Actuator with Feedforward Compensation," *Mathematical Problems in Engineering*, vol. 2014, Article ID 107184, 14 pages, doi: 10.1155/2014/107184, 2014, (SCI/EI).
 42. W. Ai and Qingsong Xu, "Overview of flexure-based compliant microgrippers," *Advances in Robotics Research, An International Journal*, vol. 1, no. 1, pp. 1-19, January 2014.
 41. Qingsong Xu and M. Jia, "Model Reference Adaptive Control with Perturbation Estimation for a Micropositioning System," *IEEE Transactions on Control Systems Technology*, vol. 22, no. 1, pp. 352-359, January 2014, (SCI/EI).
- **2013**
 40. Qingsong Xu, "Enhanced discrete-time sliding mode strategy with application to piezoelectric actuator control," *IET Control Theory & Applications*, vol. 7, no. 18, pp. 2153-2163, December 2013, (SCI/EI).

39. Qingsong Xu, "Design, testing and precision control of a novel long-stroke flexure micropositioning system," *Mechanism and Machine Theory*, vol. 70, pp. 209–224, December 2013, (SCI/EI).
 38. Qingsong Xu, "Design and Implementation of a Novel Rotary Micropositioning System Driven by Linear Voice Coil Motor," *Review of Scientific Instruments*, vol. 84, no. 5, pp. 055001-1–055001-8, May 2013, (SCI/EI).
 37. H. Fu and Qingsong Xu, "Locating Impact on Structural Plate Using Principal Component Analysis and Support Vector Machines," *Mathematical Problems in Engineering*, vol. 2013, Article ID 352149, 8 pages, 2013. doi:10.1155/2013/352149, (SCI/EI).
 36. Y. Jia and Qingsong Xu, "MEMS Microgripper Actuators and Sensors: The State-of-the-Art Survey," *Recent Patents on Mechanical Engineering*, vol. 6, no. 2, pp. 132–142, 2013, (EI).
 35. Qingsong Xu, "Precision Position/Force Interaction Control of a Piezoelectric Multimorph Microgripper for Microassembly," *IEEE Transactions on Automation Science and Engineering*, vol. 10, no. 3, pp. 503–514, July 2013, (SCI/EI).
 34. Qingsong Xu, "Adaptive Discrete-Time Sliding Mode Impedance Control of a Piezoelectric Microgripper" *IEEE Transactions on Robotics*, vol. 29, no. 3, pp. 663–673, June 2013, (SCI/EI).
 33. Qingsong Xu, "Identification and Compensation of Piezoelectric Hysteresis Without Modeling Hysteresis Inverse," *IEEE Transactions on Industrial Electronics*, vol. 60, no. 9, pp. 3927–3937, September 2013, (SCI/EI). (★ ESI Highly Cited Paper 2016 ★)
- **2012**
 32. Qingsong Xu, "Design and Development of a Flexure-Based Dual-Stage Nanopositioning System with Minimum Interference Behavior," *IEEE Transactions on Automation Science and Engineering*, vol. 9, no. 3, pp. 554–563, July 2012, (SCI/EI).
 31. Qingsong Xu, "A New Flexure Parallel-Kinematic Micropositioning System with Large Workspace," *IEEE Transactions on Robotics*, vol. 28, no. 2, pp. 478–491, April 2012, (SCI/EI).
 30. Qingsong Xu and Y. Li, "Model Predictive Discrete-Time Sliding Mode Control of a Nanopositioning Piezostage Without Modeling Hysteresis," *IEEE Transactions on Control Systems Technology*, vol. 20, no. 4, pp. 983–994, July 2012, (SCI/EI).
 29. Qingsong Xu and Y. Li, "Micro-/Nanopositioning Using Model Predictive Output Integral Discrete Sliding Mode Control," *IEEE Transactions on Industrial Electronics*, vol. 59, no. 2, pp. 1161–1170, February 2012, (SCI/EI).
 28. P.-K. Wong, Qingsong Xu, C.-M. Vong, and H.-C. Wong, "Rate-Dependent Hysteresis Modeling and Control of a Piezostage Using Online Support Vector Machine and Relevance Vector Machine," *IEEE Transactions on Industrial Electronics*, vol. 59, no. 4, pp. 1988–2001, April 2012, (SCI/EI).
 27. Y. Li and Qingsong Xu, "Design and Robust Repetitive Control of a New Parallel-Kinematic XY Piezostage for Micro/Nanomanipulation," *IEEE/ASME Transactions on Mechatronics*, vol. 17, no. 6, pp. 1120–1132, 2012, (SCI/EI).
 - **2011**
 26. Qingsong Xu and P.-K. Wong, "Hysteresis Modeling and Compensation of a Piezostage Using Least Squares Support Vector Machines," *Mechatronics*, vol. 21, no. 7, pp. 1239–1251, October 2011, (SCI/EI).
 25. Y. Li and Qingsong Xu, "A Novel Piezoactuated XY Stage with Parallel, Decoupled, and Stacked Flexure Structure for Micro-/Nanopositioning," *IEEE Transactions on Industrial Electronics*, vol. 58, no. 8, pp. 3601–3615, August 2011, (SCI/EI).
 24. Y. Li and Qingsong Xu, "A Totally Decoupled Piezo-Driven XYZ Flexure Parallel Micropositioning Stage for Micro/Nanomanipulation," *IEEE Transactions on Automation Science and Engineering*, vol. 8, no. 2, pp. 265–279, April 2011, (SCI/EI).
 23. Qingsong Xu and Y. Li, "Analytical Modeling, Optimization and Testing of a Compound Bridge-Type Compliant Displacement Amplifier," *Mechanism and Machine Theory*, vol. 46, no. 2, pp. 183–200, February 2011, (SCI/EI).
 - **2010**
 22. Qingsong Xu and Y. Li, "Tracking Performance Characterization and Improvement of a Piezoactuated Micropositioning System Based on an Empirical Index," *Robotics and Computer-Integrated Manufacturing*, vol. 26, no. 6, pp. 744–752, December 2010, (SCI/EI).

21. Y. Li and Qingsong Xu, "Adaptive Sliding Mode Control with Perturbation Estimation and PID Sliding Surface for Motion Tracking of a Piezo-Driven Micromanipulator," *IEEE Transactions on Control Systems Technology*, vol. 18, no. 4, pp. 798–810, July 2010, (SCI/EI).
 20. Qingsong Xu and Y. Li, "Dahl Model-Based Hysteresis Compensation and Precise Positioning Control of an XY Parallel Micromanipulator with Piezoelectric Actuation," *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, vol. 132, no. 4, pp. 041011-1–041011-12, July 2010, (SCI/EI).
 19. Y. Li and Qingsong Xu, "Development and Assessment of a Novel Decoupled XY Parallel Micropositioning Platform," *IEEE/ASME Transactions on Mechatronics*, vol. 15, no. 1, pp. 125–135, February 2010, (SCI/EI).
- **2009**
18. Y. Li and Qingsong Xu, "Modeling and Performance Evaluation of a Flexure-Based XY Parallel Micromanipulator," *Mechanism and Machine Theory*, vol. 44, no. 12, pp. 2127–2152, December 2009, (SCI/EI).
 17. Qingsong Xu, Y. Li and Ning Xi, "Design, Fabrication, and Visual Servo Control of an XY Parallel Micromanipulator with Piezo-Actuation," *IEEE Transactions on Automation Science and Engineering*, vol. 6, no. 4, pp. 710–719, October 2009, (SCI/EI).
 16. Y. Li and Qingsong Xu, "Design and Optimization of an XYZ Parallel Micromanipulator with Flexure Hinges," *Journal of Intelligent and Robotic Systems*, vol. 55, no. 4-5, pp. 377–402, August 2009, (SCI/EI).
 15. Y. Li and Qingsong Xu, "Design and Analysis of a Totally Decoupled Flexure-Based XY Parallel Micromanipulator," *IEEE Transactions on Robotics*, vol. 25, no. 3, pp. 645–657, June 2009, (SCI/EI).
 14. Y. Li and Qingsong Xu, "Dynamic Modeling and Robust Control of a 3-PRC Translational Parallel Kinematic Machine," *Robotics and Computer-Integrated Manufacturing*, vol. 25, no. 3, pp. 630–640, June 2009, (SCI/EI).
 13. Qingsong Xu and Y. Li, "Error Analysis and Optimal Design of a Class of Translational Parallel Kinematic Machine using Particle Swarm Optimization," *Robotica*, vol. 27, no. 1, pp. 67–78, January 2009, (SCI/EI).
- **2008**
12. Y. Yun, Qingsong Xu and Y. Li, "Survey on Parallel Manipulators with Micro/Nano Manipulation Technology and Applications," *Chinese Journal of Mechanical Engineering*, vol. 44, no. 12, pp. 12–23, December 2008, (in Chinese), (EI).
 11. Qingsong Xu and Y. Li, "An Investigation on Mobility and Stiffness of a 3-DOF Translational Parallel Manipulator via Screw Theory," *Robotics and Computer-Integrated Manufacturing*, vol. 24, no. 3, pp. 402–414, June 2008, (SCI/EI).
 10. Y. Li and Qingsong Xu, "Stiffness Analysis for a 3-PUU Parallel Kinematic Machine," *Mechanism and Machine Theory*, vol. 43, no. 2, pp. 186–200, February 2008, (SCI/EI).
- **2007**
9. Y. Li and Qingsong Xu, "Kinematic Analysis of a 3-PRS Parallel Manipulator," *Robotics and Computer-Integrated Manufacturing*, vol. 23, no. 4, pp. 395–408, August 2007, (SCI/EI).
 8. Y. Li and Qingsong Xu, "Design and Development of a Medical Parallel Robot for Cardiopulmonary Resuscitation," *IEEE/ASME Transactions on Mechatronics*, vol. 12, no. 3, pp. 265–273, June 2007, (SCI/EI).
 7. Qingsong Xu and Y. Li, "Design and Analysis of a New Singularity-Free Three-Prismatic-Revolute-Cylindrical Translational Parallel Manipulator," *Proceedings of the Institution of Mechanical Engineers. Part C, Journal of Mechanical Engineering Science*, vol. 221, no. 5, pp. 565–576, May 2007, (SCI/EI).
- **2006**
6. Qingsong Xu and Y. Li, "Kinematic Analysis and Optimization of a New Compliant Parallel Micromanipulator," *International Journal of Advanced Robotic Systems*, vol. 3, no. 4, pp. 351–358, December 2006, (EI).
 5. Y. Li and Qingsong Xu, "Kinematic Analysis and Design of a New 3-DOF Translational Parallel Manipulator," *Journal of Mechanical Design, Transactions of the ASME*, vol. 128, no. 4, pp. 729–737, July 2006, (SCI/EI).
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- **2017**
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 4. P.-K Wong, Qingsong Xu, M. Jia, and C. Zhang, "Editorial: Engineering Applications of Intelligent Monitoring and Control 2016," *Mathematical Problems in Engineering*, vol. 2017, Article ID 2945861, 2 pages, 2017.
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EXTERNAL PROFESSIONAL ACTIVITIES

• Professional Societies

- ▷ Senior Member of IEEE
 - IEEE Robotics and Automation Society
 - IEEE Systems, Man, and Cybernetics Society
 - IEEE Industrial Electronics Society
 - IEEE Control Systems Society
- ▷ Member of ASME
- ▷ Member of MAPST

• Books

- ▷ *Referees*
 - Advanced Rehabilitative Technology: Neural Interfaces and Devices, Elsevier, 2017
 - Vector Control of Piezo-electric Actuators, Elsevier, 2016
 - Biomechanics in Medical Rehabilitation, Springer, 2015

• Journals

- ▷ *Member of Editorial Advisory Board*
 - Recent Patents on Mechanical Engineering, 2012–
 - International Journal on Advances in Systems and Measurements, 2016–
- ▷ *Member of Editorial Board*
 - International Journal of Advanced Robotic Systems, 2012–2013
 - Advances in Robotics Research, An International Journal, 2012–
 - Journal of Optimization, 2012–
 - International Journal of Mechatronics & Mechanical Engineering, 2014–
 - International Journal of Robotics and Automation Technology, 2014–
 - Frontiers in Mechatronics, 2015–
- ▷ *Editor/Associate Editor*
 - Technical Editor, IEEE/ASME Transactions on Mechatronics, 2016–
 - Associate Editor, IEEE Robotics and Automation Letters, 2017–
 - Associate Editor, International Journal of Advanced Robotic Systems, 2015–
 - (Guest Editor) Special Issue on "Engineering Applications of Intelligent Monitoring and Control 2016", Mathematical Problems in Engineering, 2015–2016
 - (Lead Guest Editor) Special Issue on "Engineering Applications of Intelligent Monitoring and Control 2014", Mathematical Problems in Engineering, 2013–2014
 - (Lead Guest Editor) Special Issue on "Micro/Nano Mechatronics and Automation", International Journal of Advanced Robotic Systems, 2013–2014

- (Lead Guest Editor) Special Issue on “Engineering Applications of Intelligent Monitoring and Control”, *Mathematical Problems in Engineering*, 2012–2013
- (Lead Guest Editor) Special Issue on “Advanced Control in Micro/Nano Systems”, *Journal of Control Science and Engineering*, 2011–2012

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- *Advanced Electromagnetics*, 2013–
- *Advanced Robotics*, 2013–
- *Advances in Artificial Intelligence*, 2012–
- *Advances in Mechanical Engineering*, 2013–
- *Algorithms*, 2015–
- *Applied Soft Computing*, 2016–
- *Asian Journal of Control*, 2016–
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- *IEEE Access*, 2016–
- *IEEE Embedded Systems Letters*, 2016–
- *IEEE Robotics and Automation Letters*, 2015–
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- *IEEE Transactions on Robotics*, 2011–
- *IEEE Transactions on Automation Science and Engineering*, 2012–
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- *IEEE/ASME Journal of Microelectromechanical Systems*, 2014–
- *IET Control Theory & Applications*, 2013–
- *IETE Technical Review*, 2015–
- *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, 2012–
- *Journal of Mechanical Design, Transactions of the ASME*, 2016–
- *Journal of Mechanisms and Robotics, Transactions of the ASME*, 2011–
- *Industrial & Engineering Chemistry Research*, 2014–
- *International Journal of Advanced Manufacturing Technology*, 2016–
- *International Journal of Advanced Robotic Systems*, 2012–
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- *International Journal of Control*, 2015–
- *International Journal of Control, Automation, and Systems*, 2009–
- *International Journal of Electrical Power and Energy Systems*, 2014–
- *International Journal of Precision Engineering and Manufacturing*, 2014–
- *International Journal of Robust and Nonlinear Control*, 2015–
- *International Journal of Structural Stability and Dynamics*, 2016–
- *International Journal of Systems Science*, 2017–
- *Journal of Applied Mathematics*, 2014–
- *Journal of Control Theory and Technology*, 2014–
- *Journal of Industrial Engineering*, 2014–
- *Journal of Intelligent Material Systems and Structures*, 2012–
- *Journal of Intelligent and Robotic Systems*, 2009–
- *Journal of Mechanical Science and Technology*, 2011–
- *Journal of Micromechanics and Microengineering*, 2016–

- Journal of Robotics, 2011–
- Journal of Sound and Vibration, 2013–
- Journal of the Franklin Institute, 2015–
- Journal of the Royal Society Interface, 2012–
- Mathematical Problems in Engineering, 2014–
- Mechanical Sciences, 2013–
- Mechanical Systems and Signal Processing, 2012–
- Mechanism and Machine Theory, 2010–
- Mechatronics, 2010–
- Micro & Nano Letters, 2017–
- Micromachines, 2014–
- Microsystem Technologies, 2015–
- Microsystems & Nanoengineering, 2016–
- Natural Computing, 2013–
- Nonlinear Dynamics, 2013–
- Precision Engineering, 2015–
- Proceedings of the IMechE, Part B: Journal of Engineering Manufacture, 2016–
- Proceedings of the IMechE, Part C: Journal of Mechanical Engineering Science, 2013–
- Proceedings of the IMechE, Part I: Journal of Systems and Control Engineering, 2015–
- Recent Patents on Mechanical Engineering, 2012–
- Review of Scientific Instruments, 2013–
- Robotica, 2013–
- Robotics and Autonomous Systems, 2015–
- Robotics and Computer-Integrated Manufacturing, 2012–
- Scanning, 2016–
- Scientific Reports, 2016–
- Sensors, 2012–
- Shock and Vibration, 2015–
- Smart Materials and Structures, 2015–
- The Scientific World Journal, 2014–

- Conferences

- ▷ *Chair/Co-Chair*

- Symposium Co-Chair, Cross-Strait Symposium on Dynamical Systems and Vibration (SDSV 2017), 10-17 December, 2017, Hong Kong and Macau, China
- Regional Program Chair, The 7th Annual IEEE Int. Conf. on CYBER Technology in Automation, Control, and Intelligent Systems (IEEE-CYBER 2017), July 31-August 4, 2017, Hawaii, USA
- Chair of International Program Committee, The 4th International Conference on Mechatronics and Applied Mechanics (ICMAM2014), December 17-18, 2014, Shenzhen, China
- Chair of International Program Committee, 2014 International Conference on Mechanical Structures and Smart Materials (ICMSSM 2014), August 16-17, 2014, Kuala Lumpur, Malaysia
- Chair of Technical Program Committee, 2014 International Conference on Industrial Design and Mechanics Power (ICIDMP 2014), June 21-22, 2014, Beijing, China
- Chair of International Program Committee, 2013 International Conference on Mechanical Structures and Smart Materials (ICMSSM 2013), November 16-17, 2013, Xiamen, China
- Chair of International Program Committee, The 2nd International Conference on Computational Mechanics and Design Engineering (ICCMDE 2012), November 7-8, 2012, Shanghai, China

- ▷ *Associate Editor*

- IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2017)
- IEEE Conference on Automation Science and Engineering (CASE 2017)

- ▷ *Member of International Program Committee / Technical Committee*

- 2018 4th International Conference on Mechanical Structures and Smart Materials (ICMSSM2018), September 22-23, 2018, Shenzhen, China
- 2017 2nd International Conference on Mechatronics and Electrical Systems (ICMES 2017), December 22-25, 2017, Wuhan, China

- 2017 IEEE International Conference on Robotics and Biomimetics (ROBIO 2017), December 5-8, 2017, Macau, China
- 2017 IEEE International Conference on Mechatronics and Automation (ICMA 2017), August 6-9, 2017, Takamatsu, Japan
- IEEE International Conference on Information and Automation (ICIA 2017), July 18-20, 2017, Macau, China
- The 3rd International Conference on Control, Automation and Robotics (ICCAR 2017), April 22-24, 2017, Nagoya, Japan
- International Conference on Computer Vision Systems 2017 (ICVS 2017), July 10-13, 2017, Shenzhen, China
- 2016 IEEE International Conference on Robotics and Biomimetics (ROBIO 2016), December 3-7, 2016, Qingdao, China
- 2016 International Conference on Energy and Mechanical Engineering (EME 2016), November 19-20, 2016, Wuhan, China
- The International Conference on Mechatronics and Manufacturing Technologies (MMT2016), August 20-21, 2016, Wuhan, China
- 2016 IEEE International Conference on Mechatronics and Automation (ICMA 2016), August 7-10, 2016, Harbin, China
- 2016 IEEE International Conference on Information and Automation (ICIA 2016), July 31-August 4, 2016, Ningbo, Zhejiang, China
- 2016 International Conference on Mechatronics, Control and Automation Engineering (MCAE2016), July 24-25, 2016, Bangkok, Thailand
- The 12th World Congress on Intelligent Control and Automation (WCICA 2016), June 12-17, 2016, Guilin, China
- 2016 IEEE International Conference on Real-time Computing and Robotics (RCAR 2016), June 6-9, 2016, Angkor Wat, Cambodia
- The 1st International Conference on Advances in Sensors, Actuators, Metering and Sensing (ALLSENSORS 2016), April 24-28, 2016, Venice, Italy
- 2016 International Conference on Mechanics Engineering and Control Automation (ICMECA 2016), January 9-10, 2016, Wuhan, China
- 2015 International Conference on Energy and Mechanical Engineering (EME 2015), October 17-18, 2015, Wuhan, China
- 2015 IEEE International Conference on Information and Automation (ICIA 2015), August 8-10, 2014, The Old Town of Lijiang, Yunnan, China
- 2015 IEEE International Conference on Mechatronics and Automation (ICMA 2015), August 2-5, 2015, Beijing, China
- 2015 International Conference on Electrical Engineering and Mechanical Automation (ICEEMA 2015), June 13-14, 2015, Suzhou, China
- The 28th IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2015), May 3-6, 2015, Halifax, Nova Scotia, Canada
- 2014 IEEE International Conference on Robotics and Biomimetics (ROBIO 2014), December 5-10, 2014, Bali, Indonesia
- 2014 IEEE International Conference on Information and Automation (ICIA 2014), July 26-31, 2014, Hulun Buir, Inner Mongolia, China
- 2014 IEEE International Conference on Mechatronics and Automation (ICMA 2014), August 3-6, 2014, Tianjin, China
- The 11th World Congress on Intelligent Control and Automation (WCICA 2014), June 27-30, 2014, Shenyang, China
- The 4th IEEE International Conference on Information Science and Technology (ICIST 2014), April 26-28, 2014, Shenzhen, China
- 2013 IEEE International Conference on Robotics and Biomimetics (ROBIO 2013), December 12-14, 2013, Shenzhen, China
- 2013 IEEE International Conference on Information and Automation (ICIA 2013), August 26-28, 2013, Yinchuan, Ningxia, China
- 2013 International Conference on Advances in Robotics Research (ICARR13), August 25-28, 2013, Seoul,

Korea

- 2013 IEEE International Conference on Mechatronics and Automation (ICMA 2013), August 4-7, 2013, Takamatsu, Kagawa, Japan
- The Third International Conference on Robot, Vision and Signal Processing (RVSP-2013), December 10-12, 2013, Kitakyushu, Japan
- IASTED International Conference on Engineering and Applied Science (EAS 2012), December 27-29, 2012, Colombo, Sri Lanka
- 2012 IEEE International Conference on Automation and Logistics (ICAL 2012), August 15-17, 2012, Zhengzhou, China
- 2012 IEEE International Conference on Mechatronics and Automation (ICMA 2012), August 5-8, 2012, Chengdu, China
- 2012 IEEE International Conference on Information and Automation (ICIA 2012), June 6-8, 2012, Shenyang, China
- The First International Conference on Robot, Vision and Signal Processing (RVSP 2011), November 21-23, 2011, Kaohsiung, Taiwan
- 2011 IEEE International Conference on Automation and Logistics (ICAL 2011), August 15-18, 2011, Chongqing, China
- 2011 IEEE International Conference on Mechatronics and Automation (ICMA 2011), August 7-10, 2011, Beijing, China
- 2011 IEEE International Conference on Information and Automation (ICIA 2011), June 6-8, 2011, Shenzhen, China
- 2010 IEEE International Conference on Automation and Logistics (ICAL 2010), August 16-20, 2010, Hong Kong & Macau, China
- 2010 IEEE International Conference on Information and Automation (ICIA 2010), June 20-23, 2010, Harbin, Heilongjiang, China
- 2009 IEEE International Conference on Information and Automation (ICIA 2009), June 22-25, 2009, Zhuhai/ Macao, China
- 2008 IEEE International Conference on Robotics and Biomimetics (ROBIO 2008), February 21-26, 2009, Bangkok, Thailand

▷ Referees

- American Control Conference (ACC'13, ACC'14, ACC'16)
- Annual Conference of IEEE Industrial Electronics Society (IECON'16, IECON'17)
- ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE'11, IDETC/CIE'15–IDETC/CIE'17)
- Australian Control Conference (AUCC'15)
- Chinese Control and Decision Conference (CCDC'14)
- IASTED International Conference on Engineering and Applied Science (EAS'12)
- IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM'10, AIM'13–AIM'17)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'09–IROS'13, IROS'15, IROS'17)
- IEEE Asia Pacific Conference on Circuits and Systems (APCCAS'08)
- IEEE Conference on Automation Science and Engineering (CASE'10–CASE'12, CASE'14–CASE'17)
- IEEE Conference on Decision and Control (CDC'10, CDC'16)
- IEEE Conference on Industrial Electronics and Applications (ICIEA'12)
- IEEE International Conference on Advanced Robotics and Mechatronics (ARM'17)
- IEEE International Conference on Automation and Logistics (ICAL'10–ICAL'12)
- IEEE International Conference on Control & Automation (ICCA'10)
- IEEE International Conference on Information and Automation (ICIA'08–ICIA'17)
- IEEE International Conference on Information Science and Technology (ICIST'14)
- IEEE International Conference on Mechatronics and Automation (ICMA'07, ICMA'11–ICMA'17)
- IEEE International Conference on Nanotechnology (NANO'13)
- IEEE International Conference on Real-time Computing and Robotics (RCAR'16)
- IEEE International Conference on Robotics and Automation (ICRA'10, ICRA'12–ICRA'18)
- IEEE International Conference on Robotics and Biomimetics (ROBIO'08, ROBIO'13–ROBIO'17)
- IEEE International Conferences on Cybernetics and Intelligent Systems (CIS), and Robotics, Automation and Mechatronics (RAM) (CIS-RAM'17)

- IEEE Multi-conference on Systems and Control (MSC'07, MSC'11, MSC'15)
- International Conference on Advances in Sensors, Actuators, Metering and Sensing (ALLSENSORS'16, ALLSENSORS'17)
- International Conference on Computer Vision Systems (ICVS'17)
- International Conference on Control, Automation and Robotics (ICCAR'17)
- International Conference on Manipulation, Automation and Robotics at Small Scales (MARSS'16)
- International Conference on Methods and Models in Automation and Robotics (MMAR'16)
- International Conference on Robot, Vision and Signal Processing (RVSP'11)
- International Workshop on Advanced Computational Intelligence (IWACI'10)
- International Workshop on Recent Advances in Sliding Modes (RASM'15)
- International Workshop on Variable Structure Systems (VSS'16)
- World Congress on Intelligent Control and Automation (WCICA'14, WCICA'16)