

Hongyu Yu

Associate Professor

School of Earth and Space Exploration; School of Electrical, Computer and Energy Engineering
Arizona State University, 781 Terrace Road, ISTB4-665, Tempe, AZ 85287-6004

Email: hongyuyu@asu.edu Phone: (480) 727-7454

EDUCATION

2000 – 2005	Ph.D. in Electrical Engineering, Advisor: Dr. Eun Sok Kim	University of Southern California
1997 – 2000	M.S. in Electronics Engineering	Tsinghua University
1992 – 1997	B.S. in Electronics Engineering	Tsinghua University

PROFESSIONAL EXPERIENCES

2014-present	Associate Professor	
2008 – 2014	Assistant Professor, School of Earth and Space Exploration School of Electrical, Computer and Energy Engineering	Arizona State University
2005 – 2007	Post Doctorial Research Associate, Mentor: Dr. Eun Sok Kim and Dr. Tzung Hsiai	University of Southern California

RESEARCH INTERESTS

- Explore new frontier of miniature science instruments for Earth and Space exploration, such as micro seismometers for planetary geological study (Moon, Mars, Asteroids and other planetary bodies) and sensing systems for operating in harsh environments.
- Establish micro-fabrication enabled manufacture for newly emerging technologies, such as deformable platforms for flexible and stretchable electronics and origami electronics. The applications cover Unmanned Aerial Vehicle, wearable electronics, and Cube Satellites.
- Integrate soft and hard materials to revolutionize new generation of intelligent materials, such as 3D tactile display for visually-impaired people and lithium ion battery of higher energy density and stretchability.

TEACHING

Courses Developed and Taught at Arizona State University

- SES 394/310 Concepts of Electrical and Mechanical Engineering Design
Developed in Fall 2008; taught in Fall 2008, Fall 2009, Fall 2010, and Spring 2012
- EEE 202 Circuits I
Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014
- EEE335 Analog and Digital Circuits
Fall 2011 and Spring 2013
- EEE 598 MEMS for Earth and Space Exploration
Developed in Spring 2009; taught in Spring 2009, Spring 2010, and Spring 2011
- EEE 598 Nano/Micro Electromechanical Sensors
Evolved from “EEE 598 MEMS for Earth and Space Exploration”;
taught in Fall 2013 and Fall 2014

MENTORING

Dr. Yu has mentored/been mentoring 2 postdoctoral research associate, 10 graduate students, 8 undergraduate students, and 2 high school student interns.

Postdoctoral Research Associates Supervised

Hua Wang, 2011-2014

Yong Mo Yang, 02/2011-10/2011

Graduate Students Supervised

Student	Degree (Year)	Role	Major	Presently at
Xiaotun Qiu	Ph.D (2011)	Supervisor	ECEE	Qualcomm Inc.
Jon Oiler	Ph.D (2013)	Supervisor	SESE	Space and Naval Warfare Systems Center Pacific
Hai Huang	Ph.D (2014)	Supervisor	ECEE	Lorentz Solution, Inc
Rui Tang	Ph.D (2014)	Supervisor	ECEE	TriQuint Semiconductor
Cunjiang Yu	Ph.D (2010)	Co-supervisor	MAE	Houston University
Teng Ma	Ph.D (2014)	Co-supervisor	MAE	ASU
Jie Zhu	Master (2011)	Supervisor	ECEE	Marvell Tech Group Ltd
Ting Zou	Master (2010)	Supervisor	ECEE	Broadcom
Mengbing Liang	Ph.D (2012~)	Supervisor	ECEE	ASU
Ruirui Han	Ph.D (2012~)	Supervisor	SESE	ASU

Undergraduate Student Supervised

Student	Year	Major	Program
Samuel Dodge	2009	Electrical Eng.	NASA Space Grant
Roxana Aguilar	2010-2011	Aerospace Eng.	Obama Scholarship at ASU
Julio Rodriguez	2011-2012	Anthropology	Obama Scholarship at ASU
Luis Tlapanco	2012-2013	Aerospace Eng.	Obama Scholarship at ASU
Guanhao Qiao	2012-2013	ECEE	Honors Thesis
Amanda Snodgrass	2013-2014	Chemical Eng.	The Fulton Undergraduate Research Initiative at ASU
Ian Saltwick	2014-present	Electrical Eng.	The Fulton Undergraduate Research Initiative at ASU
Jingliang Zhong	2014-presnet	Electrical Eng.	Research Assistant

High School Student Interns Supervised

James Ma, 10th Grade, California, Summer 2012

Annie Dai, 12th Grade, Arizona, 06/2012-02/2013, semi-finalist Intel Science Talent Search

Senior Design (Capstone) Projects

- “The Development of the Electronic Interface to Four-electrode Conductivity Sensors”, Benjamin Sheffield, Katherine Driggs Campbell, Steven Shackell, and Tongxuan Du (2010-2011)
- “Capacitively-Loaded Folded Patch Antenna”, Jake Becker, Jacob Boddeker, Andrew Gofas and Bryce Schadl (2011)
- “Conductivity Sensors – Phase Measurement and Wireless Communication”, Guillermo Loyola, Buddy Nunes, Frank Insana, and Justin Hixson (2012-2013)
- “Conductivity Sensors – Underwater Package and Wireless Communication”, Christopher Gardner, Brett Prudhom, Kort Meyer, and Pablo Moreno (2012-2013)
- “Vaccine Carrier Portable”, Yu Wu, Jian Zhou, and Yizhou Wu (2012-2013)

- “Development of Wireless Exercise Monitoring System”,
Todd Simon, John Clem, Nick Oliver, and John Hess (2013)
- “Hot Springs Sensor Array”,
Andrew D Smith, Andrew G Smith, Joshua Smith, Taylor Donaldson (2013-2014)
- “Wireless Exercise Monitoring System”,
Danele Helapitage, Stephen Brown, Jeffrey Russean (2014)

PUBLICATIONS

Book Chapters

2. H. Yu, L. Ai, M. Rouhanizadeh, and T. K. Hsiai, “*Heterogeneous Nano Structures Description: Multiscale structures for Biomedical Diagnostics*” in “Bio-Inspired Multiscale Structure with NEMS and MEMS Components”, Wiley, 2009. Chapter 16
1. M. Rouhanizadeh, W. Takabe, L.S. Ai, H. Yu, and T. Hsiai, “*Monitoring Oxidative Stress in Vascular Endothelial Cells in Response to Fluid Shear Stress: from Biochemical Analyses to Micro- and Nanotechnologies*” in “Nitric Oxide, PTG: Oxidative and Nitrosative Stress in Redox Regulation of Cell Signaling”, Elsevier Academic Press Inc. 2008 ISBN 0076-6879 Pages: 111-150

Referred Journal Publications

- J67. E. Hasper, A. Gonzales, B. Martinez, L. Harris, H. Yu, Z. Farkas, T. Hedgpeth, R.A. Windhorst, and D.P. Baluch, “*Methods for creating and evaluating 3D tactile images to teach STEM courses to the visually impaired,*” Journal of College Science Teaching. (in press)

2014

- J66. H Gao, R Tang, T Ma, H Jiang, H Yu, GJ Cheng, 2014, “*Laser Shock Induced Conformal Transferring of Functional Devices on 3D Stretchable Substrates*”, IEEE/ASME Journal of Microelectromechanical Systems, DOI: 10.1109/JMEMS.2014.2332512
- J65. A. Durgun, C. Balanis, C. Birtcher, H. Huang and H. Yu, “*High-Impedance Surfaces With Periodically Perforated Ground Planes,*” Antennas and Propagation, IEEE Transactions on, vol.62, no.9, pp.4510,4517, Sept. 2014 doi: 10.1109/TAP.2014.2331703
- J64. J. Oiler, R. Tang, T. Ma, and H. Yu, “*Thermoelectric Cool-Film Shear Stress Sensor,*” Electron Device Letters, *IEEE*, vol.35, no.7, pp.783,785, July 2014 doi: 10.1109/LED.2014.2320976
- J63. J. Oiler, E. Shock, H. Hartnett, AJ. Dombard, and H. Yu, “*Harsh Environment Sensor Array-Enabled Hot Spring Mapping,*” Sensors Journal, IEEE , vol.14, no.10, pp.3418,3425, Oct. 2014 doi: 10.1109/JSEN.2014.2334674
- J62. C. Lv, D. Krishnaraju, G. Konjevod, H. Yu, and H. Jiang, 2014, “*Origami based Mechanical Metamaterials,*” Scientific Reports, 4:5979 doi: 10.1038/srep05979, 2014
- J61. Z. Song, T. Ma, R. Tang, Q. Cheng, X. Wang, D. Krishnaraju, R. Panat, C. K. Chan, H. Yu, and H. Jiang, “*Origami Lithium-ion Batteries*” Nature Communications, Volume: 5 Article Number: 3140 Published: JAN 2014
- J60. R. Tang, H. Tu, Y. Xu, H. Jiang and H. Yu, “*Micro Origami Solar Panel*” Applied Physics Letters, Volume: 104 Issue: 8 Article Number: 083501 Published: FEB 24 2014

2013

- J59. H. Tu, H. Jiang, H. Yu and Y. Xu, “*Hybrid silicon-polymer platform for self-locking and self-deploying origami*” Applied Physics Letters, Volume: 103 Issue: 24 Article Number: 241902 Published: DEC 9 2013
- J58. Q. Cheng, Z. Song, T. Ma, B. Smith, R. Tang, H. Yu, H. Jiang and C. Chan, “*3D Paper-based Lithium-ion Batteries using Folding*” Nano Letters, doi:10.1021/nl4030374, 2013
- J57. H. Huang, M. Liang, R. Tang, J. Oiler, T. Ma and H. Yu “*Molecular Electronic Transducer-Based Low Frequency Accelerometer Fabricated With Post-CMOS Compatible Process Using Droplet as Sensing Body*” IEEE Electron Device Letters, Electron Device Letters, IEEE (Volume:34 , Issue: 10) **pp:** 1304 - 1306 **DOI:** 10.1109/LED.2013.2277541

- J56. T. Ma, Y. Wang, R. Tang, H. Yu, and H. Jiang "Pre-patterned ZnO Nanoribbons on Soft Substrates for Stretchable Energy Harvesting Applications" *Journal of Applied Physics*, 2013 Volume: 113 Issue: 20 Article Number: 204503 DOI: 10.1063/1.4807320.
- J55. R. Tang, H. Huang, J. Oiler, M. Liang and H. Yu, "Three Dimensional Flexible Thermal Sensor for Intravascular Flow Monitoring" *IEEE sensors journal*, 2013, on-line first, Digital Object Identifier: 10.1109/JSEN.2013.2264623
- J54. H. Huang, B. Carande, R. Tang, J. Oiler, D. Zuitsev, V. Agafonov and H. Yu, "A Micro Seismometer based on Molecular Electronic Transducer Technology for Planetary Exploration" *Applied Physics Letters*, 2013, Volume: 102 Issue: 19 Article Number: 193512 DOI: 10.1063/1.4806983
- J53. H. Gao, R. Tang, T. Ma, H. Jiang, H. Yu, and G. Cheng, "Direct Integration of Functional Structures on 3D Microscale Surfaces by Laser Dynamic Forming", *Journal of Microelectromechanical Systems*, On-line first, Digital Object Identifier: 10.1109/JMEMS.2013.2262602
- J52. E. Kim, H. Tu, C. Lv, H. Jiang, H. Yu, and Y. Xu, "A Robust Polymer Microcable Structure for Flexible Devices" *Applied Physics Letters*, 2013: 102(3) pp:1-4 Article Number: 033506 DOI: 10.1063/1.4788917
- J51. Y. Wang, T. Ma, H. Yu, and H. Jiang, "Random Analysis on Controlled Buckling Structure for Energy Harvesting" *Applied Physics Letters*, 2013: 102(4) pp:1-4 Article Number: 041915 DOI: 10.1063/1.4789998
- J50. H. Huang, V. Agafonov and H. Yu, "Molecular Electric Transducers as Motion Sensors: A Review" *Sensors* 2013, 13(4), 4581-4597; DOI: :10.3390/s130404581
- 2012
- J49. X. Qiu, R. Tang, R. Liu, H. Huang S. Guo and H. Yu, "A Micro Initiator Realized by Reactive Ni/Al Nanolaminates", *Journal of Material Science- Material in Electronics*, 2012: Volume: 23 Issue: 12 Pages: 2140-2144 DOI: 10.1007/s10854-012-0726-5
- J48. Z. Wang, X. Qiu, J. Shi and H. Yu, "Room Temperature Ozone Detection using ZnO based Film Bulk Acoustic Resonator (FBAR)" *Journal of the Electrochemical*, 2012: Volume: 159 Issue: 1 Pages: J13-J16 DOI: 10.1149/2.054201jes
- J47. W. Pang, H. Zhao, E. S. Kim, H. Zhang, H. Yu and X. Hu, "Piezoelectric Microelectromechanical Resonant Sensors for Chemical and Biological Detection", *Lab on a Chip*, 2012, Advance Article, DOI: 10.1039/C1LC20492K
- J46. H. Zhang, Q. Yang, W. Pang, J. Ma, and H. Yu; "Temperature Stable Bulk Acoustic Wave Filters Enabling Integration of a Mobile Television Function in UMTS System" *IEEE Microwave and Wireless Components letters*, 2012: Volume: 22 Issue: 5 Pages: 239-241 DOI: 10.1109/LMWC.2012.2193123
- J45. C. Zhou, W. Pang, Q. Li, H. Yu, X. Hu, and H. Zhang; "Extracting the Electromechanical Coupling Constant of Piezoelectric Thin Film by the High-Tone Bulk Acoustic Resonator Technique" *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 2012: 59(5):958-962.
- 2011
- J44. X. Qiu and H. Yu; "Different DC response in thickness and lateral field excitation film bulk acoustic resonators" *Micro and Nanosystems* 2011;3(2):111-114
- J43. X. Qiu, R. Tang, J. Zhu, J. Oiler, C. Yu, Z. Wang, and H. Yu, "The Effects of Temperature, Relative Humidity and Reducing Gases on the Ultraviolet Response of ZnO based Film Bulk Acoustic-Wave Resonator" *Sensors & Actuators: B. Chemical Sensors and Actuators B*, 2011: 151 360-364
- J42. X. Qiu, R. Tang, S.Chen, H. Zhang, W. Pang, and H. Yu, "pH Measurements with ZnO based Surface Acoustic Wave Resonator", *Electrochemistry Communications*, 2011: Volume: 13 Issue: 5 Pages: 488-490
- J41. Z. Wang, X. Qiu, J. Zhu, J. Oiler, S.Chen, J.Shi, E. S. Kim, and H. Yu, "Directional Acoustic Underwater Thruster", *IEEE Trans. Ultrason. Ferroelect. Freq. Contr.*, 2011: Volume: 58 Issue: 6 Pages: 1114-1117 DOI: 10.1109/TUFFC.2011.1918

- J40. Z. Wang, X. Qiu, S. Chen, W. Pang, H. Zhang, J. Shi, and H. Yu, “ZnO based Film Bulk Acoustic Resonator as Infrared Sensor”, *Thin Solid Films*, 2011: Volume: 519 Issue: 18, Pages: 6144-6147
- J39. F. Yu, L. Ai, W. Dai, N. Rozengurt, H. Yu, T. K. Hsiai, “MEMS Thermal Sensors to Detect Changes in Heat Transfer in the Pre-Atherosclerotic Regions of Fat-Fed New Zealand White Rabbits”, *Annals of Biomedical Engineering*, 2011: Volume: 39 Issue: 6 Special Issue: SI Pages: 1736-1744
- J38. F. Yu, R. Li, L. Ai, C. Edington, H. Yu, M. Barr, E.S. Kim, T. K. Hsiai, “Electrochemical Impedance Spectroscopy to Assess Vascular Oxidative Stress”, *Annals of Biomedical Engineering*, 2011: Volume: 39 Issue: 1 Pages: 287-296
- 2010
- J37. X. Qiu, Z. Wang, J. Zhu, J. Oiler, R. Tang, C. Yu and H. Yu, “The Effects of Relative Humidity and Reducing Gases on the Temperature coefficient of Resonant Frequency of ZnO-Based Film Bulk Acoustic Wave Resonator”, *IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control*, 2010: volume 57, issue 9, pages: 1902-1905
- J36. W. Pang, H. Zhang, R.C. Ruby, H. Yu, E.S. Kim, “Analytical and Experimental Study on the Second Harmonic Mode Response of a Bulk Acoustic Wave Resonator”, *Journal of Micromechanics and Microengineering*, 2010: volume 20, issue: 11, article number: 115015
- J35. H. Zhang, W. Pang, E.S. Kim and H. Yu, “Micromachined Silicon and Polymer Probes Integrated with Film-Bulk-Acoustic-Resonator Mass Sensors”, *Journal of Micromechanics and Microengineering*, 2010: Volume: 20, Issue: 12, article number: 125008
- J34. J. Zhu, C. Lee, E.S. Kim, D. Wu, C. Hu, Q. Zhou, K.K. Shung, and H. Yu, “High-overtone Self-Focusing Acoustic Transducers for High Frequency Ultrasonic Doppler”, *Ultrasonics*, 2011: 50(6):544-7. (<http://dx.doi.org/10.1016/j.ultras.2010.02.002>)
- J33. X. Qiu, J. Oiler, J. Zhu, Z. Wang, R. Tang, C. Yu and H. Yu, “Film Bulk Acoustic-Wave Resonator based Relative Humidity Sensor using ZnO Films”, *Electrochemical and Solid-State Letters*, 13, 2010, J65-J67.
- J32. X. Qiu, R. Tang, J. Zhu, J. Oiler, C. Yu, Z. Wang, and H. Yu, “Experiment and theoretical analysis of relative humidity sensor based on film bulk acoustic-wave resonator”, *Sensors and Actuators B-Chemical*, 2010: v. 147, issue 2, pp: 381-384
- J31. X. Qiu, D. Welch, J. Christen, J. Zhu, J. Oiler, C. Yu, Z. Wang, and H. Yu, “Reactive Nanolayers for Physiologically Compatible Microsystem Packaging”, *Journal of Material Science-Material in Electronics*, 2010: v. 21, issue 6, pp: 562-566
- 2009
- J30. C. Yu, Z. Wang, H. Yu, and H. Jiang, “A Stretchable Temperature Sensor Based on Elastically Buckled Thin Film Devices on Elastomeric Substrates”, *Applied Physics Letter*, 2009: Vol.95, 141912
- J29. C. Yu, H. Gao, H. Yu, H. Jiang, and G. J. Cheng, “Laser Dynamic Forming of Functional Materials Laminated Composites on Patterned Three-dimensional Surfaces with Applications on Flexible Microelectromechanical System”, *Applied Physics Letter*, 2009: Vol. 95, 091108
- J28. X. Qiu, J. Zhu, J. Oiler, C. Yu, Z. Wang and H. Yu, “Localized Parylene-C bonding with reactive multilayer foils”, *Journal of Physics D: Applied Physics*, 2009: Volume: 42 Issue: 18 Article Number: 185411
- J27. W. Xu, X. Zhang, H. Yu, A. Abbaspour-Tamijani and J. Chae, “In-Liquid Quality Factor Improvement for Film Bulk Acoustic Resonators by Integration of Microfluidic Channels”, *IEEE electron device letters*, 2009: Volume: 30 Issue: 6 Pages: 647-652
- J26. X. Qiu, J. Zhu, J. Oiler, C. Yu, Z. Wang, and H. Yu, “Film Bulk Acoustic-wave Resonator Based Ultraviolet Sensor”, *Applied Physics Letter*, 2009: vol. 94, 16 DOI: 10.1063/1.3122342
- J25. H. Yu, C. Y. Lee, W. Pang, H. Zhang, A. Brannon, J. Kitching, and E. S. Kim, “HBAR-Based 3.6 GHz Oscillator with Low Power Consumption and Low Phase Noise”, *IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control*, 2009. 56(2): p. 400-403
- J24. L. Ai, H. Yu, A. Paraboschi, F. Yu, E. S. Kim, R. Li and T. K. Hsiai, “Optimization of Intravascular Shear Stress Assessment in Vivo”, *Journal of Biomechanics*, 2009: Volume: 42 Issue: 10 Pages: 1429-1437

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2008

- J22. H. Yu, L. Ai, M. Rouhanizadeh, D. Patel, E. Kim, and T. Hsiai, “*Flexible Polymer Sensors for In Vivo Intravascular Shear Stress Analysis*,” Journal of Microelectromechanical Systems, 2008. 17(5): p. 1178-1186
- J21. C. Y. Lee, W. Pang, S. C. Hill, H. Yu and E. S. Kim, “*Airborne Particle Generation Through Acoustic Ejection of Particles-in-droplets*”, Aerosol Science and Technology, 2008: Volume: 42 Issue: 10 Pages: 832-841
- J20. C. Y. Lee, H. Yu, W. Pang, and E. S. Kim, “*Droplet-based microreactions with oil encapsulation*”, Journal of Microelectromechanical systems, 2008: Volume: 17 Issue: 1 Pages: 147-156
- J19. L. Ai, M. Rouhanizadeh, J. C. Wu, W. Takabe, H. Yu, M. Alavi, R. Li, Y. Chu, and J. Miller, D. D. Heistad and T. K. Hsiai, “*Shear stress influences spatial variations in vascular Mn-SOD expression: implication for LDL nitration*”, *Am. J. Physiol.-Cell Physiol.*, 2008: 294(6), C1576-C1585
- J18. C. Y. Lee, W. Pang, H. Yu and E. S. Kim, “*Subpicoliter droplet generation based on a nozzle-free acoustic transducer*”, Applied Physics Letters, 2008. 93, 034104 ; <http://dx.doi.org/10.1063/1.2958342>
- J17. J. M. Cannata, J. A. Williams, Q. Zhou, L. Sun, K. K. Shung, H. Yu and E. S. Kim, “*Self-focused ZnO transducers for ultrasonic biomicroscopy*”, Journal of Applied Physics, 2008. 103(8): art no 084109
- J16. C. Y. Lee, W. Pang, S. J. Chen, D. Chi, H. Yu, and E. S. Kim, “*Surface micromachined, complementary-metal-oxide-semiconductor compatible tunable capacitor with 14 : 1 continuous tuning range*”, Applied Physics Letters, 2008: Volume: 92 Issue: 4 Article Number: 044103

Before 2008

- J15. H. Yu, W. Pang, H. Zhang, and E. S. Kim “*Ultra temperature-stable bulk-acoustic-wave resonators with SiO₂ compensation layer*”, IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control, 2007: Volume: 54 Issue: 10 Pages: 2102-2109, 2007
- J14. W. Pang, H. Zhang, Hao, H. Yu, C. Y. Lee, and E. S. Kim, “*Electrical frequency tuning of film bulk acoustic resonator*”, IEEE/ASME Journal of Microelectromechanical Systems, 2007: Volume: 16 Issue: 6 Pages: 1303-1313
- J13. H. Yu, Q. Zou, J.W. Kwon, D. Huang and E.S. Kim, “*Liquid Needle*”, Journal of Microelectromechanical Systems, 2007: vol. 16, no. 4, pp. 445-453
- J12. C. Y. Lee, S. Kamal-Bahl, H. Yu, J. W. Kwon, and E. S. Kim, “*On-demand DNA synthesis on solid surface by four directional ejectors on a chip*”, IEEE/ASME Journal of Microelectromechanical Systems, 2007: Volume: 16 Issue: 5 Pages: 1130-1139
- J11. C.Y. Lee, H. Yu and E.S. Kim, “*Nanoliter Droplet Coalescence in Air by Directional Acoustic Ejection*”, Applied Physics Letter, 2006: 89, 223902, <http://dx.doi.org/10.1063/1.2398886>
- J10. J. W. Kwon, H. Yu, Q. Zou and E. S. Kim, “*Directional droplet ejection by nozzleless acoustic ejectors built on ZnO and PZT*”, Journal of Micromechanics and Microengineering, 2006: Volume: 16 Issue: 12 Pages: 2697-2704
- J9. H. Yu, J.W. Kwon and E.S. Kim, “*Microfluidic Mixer and Transporter Based on PZT Self-Focusing Acoustic Transducers*”, IEEE/ASME Journal of Microelectromechanical Systems, 2006: vol. 15, no. 4, pp. 1015-1024
- J8. H. Zhang, W. Pang, H. Yu and E.S. Kim, “*High-tone Bulk Acoustic Resonators on Sapphire, Crystal Quartz, Fused Silica and Silicon Substrates*”, Journal of Applied Physics, 2006: 99, 124911_2006
- J7. W. Pang, L. Yan, H. Zhang, H. Yu, E.S. Kim and W.C. Tang, “*Femtogram Mass Sensing Platform Based on Lateral-extensional-mode (LEM) Piezoelectric Resonator*”, Appl. Phys. Lett. 2006: 88, 243503

- J6. W. Pang, H. Yu, H. Zhang and E. S. Kim, "Temperature-compensated film bulk acoustic resonator above 2 GHz", IEEE electron device letters, 2005: Volume: 26 Issue: 6 Pages: 369-371
- J5. H. Yu, J.W. Kwon and E.S. Kim, "ChemBio Extraction on a Chip by Nanoliter Droplet Ejection", Lab on a Chip, 2005: vol. 5, no. 3, pp. 344 - 349
- J4. J.W. Kwon, H. Yu and E.S. Kim, "Film Transfer and Bonding Techniques for Covering Single-Chip Ejector Array with Microchannels and Reservoirs", Journal of Microelectromechanical Systems, 2005: vol. 14, no 6, pp.1399-1408
- J3. G. Soundararajan, M. Rouhanizadeh, H. Yu, L. Demaio, E. S. Kim and T. K Hsiai, "MEMS Shear Stress Sensors for Microcirculation", Sensors and Actuators A-Physical, 2005: Volume: 118 Issue: 1 Pages: 25-32
- J2. C. Ge, H. Yu and S. Y. Luo "Effect of Spacers Located in a FED on Electronic Field and Electron", Journal of Tsinghua University, 2001: Vol.41 No.7 P.13-16
- J1. S. Y. Luo, H. F.Sheng, Y. F. Xu and H. Yu, "Current Research of FED Spacer Fabrication Technology", Microfabrication technology (China),1999, 2: 57-65

Refereed Conference Proceedings

- C51. J. Oiler, E. Shock, H. Harnett and H. Yu, "MEMS Harsh Environment Sensor Array-Enabled Hot Spring Physical Parameter Mapping", IEEE Sensors 2013, Taiwan.
- C50. R. Tang, H. Huang, Y. Yang, J. Oiler, M. Liang and H. Yu, "Three Dimensional Catheter-based Thermal Sensor for Intravascular Flow Monitoring", Transducers 2013, Barcelona, Spain. June 2013,
- C49. H. Huang, M. Liang, R. Tang, J. Oiler, T. Ma, and H. Yu, "An Electrolyte Droplet-based Low Frequency Accelerometer Based on Molecular Electronic Transducer", Transducers 2013, Barcelona, Spain. June 2013, accepted.
- C48. H. Huang, B. Carande, R. Tang, J. Oiler, Z. Dmitriy, V. Agafonov, and H. Yu, "Development of a Micro Seismometer Based on Molecular Electronic Transducer Technology of Planetary Exploration", Micro Electro Mechanical System (MEMS), 2013 IEEE 20th International Conference on, page: 629-632, Digital Object Identifier: 10.1109/MEMSYS.2013.6474320
- C47. J. Oiler, H. Yu, R. Tang, T. Ma and H. Huang, "Thermoelectric Cool-Film Flow Sensor", IEEE sensors 2012, Taipei, Taiwan, pages: 1-5.
- C46. X. Qiu, R. Tang, R. Liu, S. Guo, and H. Yu, "A Micro Initiator Realized by Reactive Ni/Al Nanolaminates for MEMS Applications", Transducers 2011, Beijing, China, 2011. Page(s): 1665-1668
- C45. R. Tang, X. Qiu, J. Zhu, J. Oiler, H. Huang, H. Wang, and H. Yu, "pH Measurements with ZnO Based Surface Acoustic Wave Resonator", Transducers 2011, Beijing, China, 2011. Page(s): 1132-1135
- C44. Z. Wang, X. Qiu, R. Tang, J. Oiler, J. Zhu, H. Huang, H. Wang, J. Shi, and H. Yu, "Ozone Sensor Using ZnO Based Film Bulk Acoustic Resonator", Transducers 2011, Beijing, China, 2011. 1124-1127
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- C42. J. Zhu, S. Chen, C. Lin, J. Oiler, H. Wang, Y. Chen, and H. Yu, "The Fabrication of 3D Aspherical Silicon Microlenses Using a Shadow Mask", Transducers 2011, Beijing, China, 2011. Page(s): 2370-2373
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- C40. X. Qiu, R. Tang, J. Zhu, J. Oiler, Z. Wang and H. Yu "Acetone Sensor Based on Film Bulk Acoustic Resonator", IEEE SENSORS 2010, Waikoloa, HI, 2010. Page(s): 1546-1549
- C39. X. Qiu, R. Tang, J. Zhu, J. Oiler, Z. Wang and H. Yu "Lateral Field Excitation Film Bulk Acoustic Resonator As Infrared Sensor", IEEE SENSORS 2010, Waikoloa, HI, 2010. Page(s): 623-626
- C38. C. Yu, Z. Wang, J. Zhu, X. Qiu, J. Oiler, H. Yu and H. Jiang, "A Mechanically Stretchable Temperature Sensor based on Buckled Thin Film Devices on an Elastomeric Substrate", IEEE

- 23rd International Conference on MicroElectroMechanical Systems (MEMS), Hongkong, pp: 675-678, 24-28 Jan. 2010
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