

Curriculum Vitae

EDUCATION

- Ph.D.** Bioengineering, Pennsylvania State University, University Park, PA, USA. (2000 — 2004)
M.S. Electrical Engineering, University of Chinese Academy of Sciences, Beijing, China. (1997 — 2000)
B.S. Electronic Engineering and Information Science, University of Science and Technology of China, Hefei, China. (1991 — 1996)

ACADEMIC POSITIONS

- Associate Professor**, Department of Biomedical Engineering, the Hong Kong Polytechnic University, Hong Kong. (2014 — present)
Assistant Professor, Interdisciplinary Division of Biomedical Engineering, the Hong Kong Polytechnic University, Hong Kong. (2008 — 2014)
Post-Doctoral Fellow/Research Associate, Department of Biomedical Engineering, University of Southern California, Los Angeles, CA, USA. (2004 — 2008)
Research/Teaching Assistant, Department of Bioengineering, Pennsylvania State University, PA, USA. (2000 — 2004)

TEACHING EXPERIENCES

As Instructor and Supervisor

- Bionic Human and the Future of Being Human** (BME1D01, CAR)
Biomedical Imaging (BME 42113, undergraduate elective)
Applied Biosignal Processing (BME 5115, graduate elective)
Independent Project / Final Year Project (BME 4153, undergraduate compulsory).
Biosignal Processing (BME 31116, undergraduate compulsory).
Fundamentals of Biomedical Instrumentation I (BME 21120, undergraduate compulsory)
Biosignal and Image Processing (BME 3113, undergraduate compulsory).
Bioelectrical Technology II – Electronics (BME 3115, undergraduate compulsory).
Bioelectrical Technology I – Circuits and Systems (BME 2111, undergraduate compulsory).
Department of Biomedical Engineering, the Hong Kong Polytechnic University

RESEARCH PROJECTS total budget as PI 30M

External:

1. 2020/2021 RGC/GRF project (15104520), *Precise neuronal stimulation by non-invasive ultrasound*, **PI**, HK\$ 964,403, 2021-2024
2. 2019/2020 RGC/RIF project (R5029-19), *Forward-looking intravascular photoacoustic/ultrasound imaging technology for the assessment and guidance of cardiovascular chronic total occlusion intervention*, **Co-I**, HK\$ 4,325,440, 2020-2024.
3. GDSTC Key Technologies R&D Programme 廣東省重點領域研發計畫, *Development and Translation of Novel Techniques and Tools for Studying Brain Functions and Neural Circuits*, **PI**, RMB1,040,000, 2019-2021.
4. Innovation and Technology Midstream Research Program (MRP/018/18X), *Development of an Ultrasonic Deep Brain Stimulation Method for Non-invasive Parkinson's Disease Treatment*, **PI**,

HK\$ 8,500,000 2019-2021.

5. 2017 Hong Kong Scholars, *Ultrasound brain stimulation and neuro-modulation*, **PI**, HK\$ 700,000 2018-2020.
6. 2017/2018 RGC/GRF project (15102417), *Manipulate the neural excitability during learning and memory by ultrasound stimulation*, **PI**, HK\$ 706,861 2018-2020
7. Innovation and Technology Fund tier 3 (ITS/053/16) and Intern Fellowship, *Development of Quantitative High-Resolution Endoscopic Ultrasound System for Colorectal Tumor Early Detection and Accurate Staging*, **PI**, HK\$ 1,800,000, 2016-2018
8. 2016/2017 RGC/GRF project (15326416), *Selective neuron stimulation by nano-bubble medicated ultrasound*, **PI**, HK\$ 699,680 2017-2020
9. 2016 Natural Science Foundation of China (NSFC) general program, (中国自然科学基金, 面上项目) (11674271), *Oxygen-rich Nano gas Vesicle Mediated Sonodynamic Therapy(探索富氧纳米气泡介导的声动力疗法)*, **PI**, RMB 630,000, 2017-2020
10. Health and Medical Research Fund (HMRF) (03144266), *Molecular Ultrasound Assessment of Prostate Tumor Angiogenesis with Endoglin Targeted Microbubble*, **PI**, HK\$ 1,157,000, 2016-2019
11. Innovation and Technology Fund TCFS (GHP/009/14SZ) and Intern Fellowship, *Development of Multi-Modality Ultrasound Imaging Platform for Thyroid Diseases*, **PI**, HK\$ 2,600,000, 2016-2018
12. Shenzhen Basic Research Funding Scheme (JCYJ20160531184809079), *precise ultrasound modulation of neuronal cells (神经细胞的精准超声调控)*, **PI**, RMB 300,000, 2016-2019
13. 2015/2016 RGC/GRF project (15215615), *Investigate the functional mechanism of singlet oxygen for sonodynamic cancer therapy*, **PI**, HK\$ 700,000, 2015-2018
14. Innovation and Technology Fund tier 3 (ITS/059/15) and Intern Fellowship, *Development of Novel Transducer Technology for Intravascular Ultrasound Imaging*, **PI**, HK\$ 1,470,000, 2015-2017
15. 2013 Health and Medical Research Fund (HMRF) (01121836), *Dual-modality Imaging for Vulnerable Plaques Diagnosis*, **PI**, HK\$ 943,000, 2014-2016
16. 2013 Natural Science Foundation of China (NSFC) general program, (中国自然科学基金, 面上项目) (61372026), *Combining High Resolution Endoscopic Ultrasound and Near Infrared Diffuse Tomography for Colorectal Cancer Early Diagnosis (融合高分辨率超声和红外荧光的多模态成像方法对早期结肠直肠癌诊断的研究)*, **PI**, RMB 800,000, 2014-2017
17. 2013 National Program on Key Basic Research Project (973 Program) (中国国家重点基础研究发展计划(973计划)), *高性能声功能材料研究及其在高端超声换能器中的集成*, (2013CB632900), **Co-I**, RMB 17,230,000, 2013-2018.
18. Shenzhen Municipal Science and Technology funding(深圳市科技创新委员会)(ZD201111070101A), *High-frequency medical ultrasound imaging technology R & D and industrialization (高频医学超声成像关键技术研发及产业化)*. **Co-I**, RMB 5,000,000, 2012-2014.
19. 10/11 RGC/GRF project, *Acoustic tweezers for microparticle manipulation*, (5028/10P), **PI**, HK\$ 533,000, 2011-2013.
20. 09/10 RGC/GRF project, *Development of a high-speed high-frequency ultrasound microscopic imaging system for longitudinal assessment of the functions of adult zebrafish heart regeneration*, (5301/09E), **PI**, HK\$ 547,000, 2010-2013.
21. Shenzhen Municipal Science and Technology R & D funding, *Echo Particle Image Velocimetry Technique and its application in diagnosing stroke at early stage*, **Co-I**, RMB 200,000, 2009-2011.

22. Strategic Importance Project (1-ZE1K), *A Novel Technology for Modulation of Selective Neurons Using Non-invasive Ultrasound*, **PI**, HK\$, 2,000,000, 2020-2022.
23. PolyU Intra-Faculty Interdisciplinary Project, *Fundamental Investigation of Ultrasonic Neuromodulation*, **PI**, HK\$ 400,000, 2015-2017
24. PolyU Post-Doctoral Fellowship, *Study the mechanism of ultrasound induced brain stimulation*, **PI**, HK\$ 700,000, 2015-2017
25. PolyU Project Strategic Importance, *Next Generation Ultrasonic Transduction for Medicine and Imaging*, **Co-I**, HK\$ 2,400,000, 2015-2018.
26. 13/14 RGC/GRF fundable project, *Early Diagnosis of Colorectal Malignancies by Dual-modality Imaging: Endoscopic High Frequency Ultrasound and Photoacoustic Imaging*, **PI**, HK\$ 167,000, 2013-2015
27. PolyU Competitive Research Grants, *Dual-modality Imaging for Vulnerable Plaques Diagnosis*, **PI**, HK\$ 247,500, 2012-2014.
28. 11/12 RGC/GRF fundable project, *Atherosclerosis Early Diagnosis by Combining High-frequency Ultrasound Imaging and Fluorescence Spectroscopy*, **PI**, HK\$ 165,000, 2012-2014
29. Competitive Research Grants for Newly Recruited Junior Academic Staff, *Development of a coded excitation method for high frequency ultrasound imaging of deeper tissues*, **PI**, HK\$ 131,000, 2010-2012.
30. PolyU Competitive Research Grants, *Acoustic tweezers for particle manipulations*, **PI**, HK\$ 170,000, 2009-2011.

PATENTS & EXHIBITIONS

- Weibao Qiu, Yanyan Yu, **Lei Sun**. *Programmable high frequency ultrasound imaging system (超声波成像系统及成像方法)*. Chinese Patent No: CN 103284753 B
- **Lei SUN**, Lin SONG, Guohao WANG, Xuandi HOU, “Methods of Gas Vesicles Surface Modification and Use for Cancer Theranostic”. PCT Patent Application No. PCT/CN2020/093171 (Filed on 29/05/2020)
- **Lei SUN**, Zhihai QIU, Jinghui GUO, Shashwati KALA, Quanxiang XIAN, Jiejun ZHU, Ting ZHU, Xuandi HOU. “Targeted neuronal stimulation in mouse brains using non-invasive ultrasound”, United States Provisional Patent Application No. 63/058,529 (Filed on 30/07/2020)
- **Lei SUN**, Shashwati Kala, Jinghui Guo, Jiejun Zhu, Zhihai, QIU, Yaoheng Yang “A Non-Invasive Method for Selective Neural Stimulation by Ultrasound” non-provisional US Patent Pending US 15/949,991 (Filed May 2018).
- **Lei SUN**, Zhihai QIU. A US patent “Enhanced Selective Cellular Stimulation by Ultrasound” non-provisional US Patent Pending US 16/115,656 (Filed on August 2018).
- **Lei SUN**, Cheng LIU, Shiyong LI, Yanjuan GU, WT WONG, “Activatable Multispectral Photoacoustic Probes, Methods of Making Probes, and Methods of Use”. Provisional US patent 62/640,101 (Filed on March 2018)
- **Lei SUN**, Lin SONG, Guohao WANG, Xuandi HOU, “Biogenic gas vesicle and Methods Preparation and Use Thereof”. Provisional US Patent No. 62/853,747 (Filed on 29/05/2019)
- **Lei SUN**, Guohao WANG, Lin SONG, “Surface Modified Gas Vesicles”, Provisional US Patent No. 62/853,739 (Filed on 29/05/2019)
- David Raphael, Bingen Yang, Qifa Zhou, **Lei Sun**, Jinho Chang, Ruimin Chen, and K. Kirk Shung. Extrudable sensor arrays in needle endoscopes and acoustic forward-imaging needle endoscope. US Patent Pending, No: 61/318,502 (filed on April 2010).
- BIO International Convention 2018, Boston, MA, USA. Jun 4-7, 2018

- Hong Kong International Medical Devices and Suppliers Fair 2018, Hong Kong. May 7-9, 2018
- Jumpstarter Hong Kong, Jan 23-24, 2019.

RESEARCH STUDENT SUPERVISION

- 7 PhD on-going students: CAO Fei, XIAN Quanxiang, ZHU Jiejun, ZHU Ting, HOU Xuandi, JIANG Yizhou, LEI Ting as chief supervisor
- 5 PhD on-going students as co-supervisor
- 4 PhD graduates: QIU Weibao September 2012, LIU Cheng March 2018, QIU Zhihai February 2019, SONG Lin July 2020, as chief supervisor.
- 1 MPhil on-going student: Derek King Fung WONG
- 3 MPhil graduates: LIU Cheng January 2014, YANG Yaoheng January 2016, HUANG Yongmin September 2019, as chief supervisor

PROFESSIONAL SERVICES

- External grant reviewer, *Atlantic Innovation Fund of Atlantic Canadian Opportunities Agency* 2010.
- Journal reviewer,
 - *PNAS, Scientific Report, Pharmacological Research, PLOS One, International Journal of Nanomedicine, JoVE, Sensors, Medical Physics, Ultrasound in Medicine and Biology, IEEE Access, Journal of Neural Engineering, IEEE Transactions on Medical Imaging, Ultrasonics, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, IEEE Journal of Biomedical and Health Informatics, IEEE Transactions on Photonics Letter, IEEE Solid-State Circuit Letter, IEEE Transactions on Information Technology in BioMedicine, IEEE Transactions on Biomedical Circuits and Systems, International Journal of Hyperthermia, International Journal of Pharmaceutics, Interface Focus, Clinical Biomechanics, Ultrasonic Imaging, Australian Physical Engineering and Sciences in Medicine, Biomedical Signal Processing and Control, Biomedical Research International, Journal of Biological and Medical Engineering, Journal of Medical Imaging and Health Informatics,*
- Scientific Program Committee member of 7th International Symposium of Focused Ultrasound, Nov 2020.
- Co-Chair of 2017 International Conference on Biomedical Ultrasound, Dec 3-4 2017 (ICBMU)
- Sectary-general of 2017 WACBE
- Organization committee of 2013 International Conference on Biomedical Ultrasound (ICBMU)
- Conference session Chair,
 - Westlake International Forum on Ultrasound in Medicine and Biology. Hangzhou, China, Mar 7-9 2019
 - 3rd Brain Stimulation International Conference, Vancouver, Canada, Feb 2019
 - International Conference on Biomedical Ultrasound (ICBMU), Dec 2017
 - Annual Meeting of Society of Neuroscience (SfN), Washington DC, USA, Nov 2017
 - International Symposium on Therapeutic Ultrasound (ISTU) meeting, Nanjing China, May 2017
 - *Acoustics 2012*, Hong Kong, May 2012,
 - *WACBE World Congress on Bioengineering*, Hong Kong, July, 2009,
 - *International Conference of the IEEE Engineering in Medicine and Biology Society*, Vancouver, British Columbia, Canada, August 2008,
- Conference reviewer, *Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) 2009-2013.*
- Committee member of Medical Ultrasound Engineering Society of Chinese Society of Biomedical

Engineering (中国生物医学工程学会医学超声工程分会委员), since 2012

- Standing committee member of Instrumentation and Device Development Committee of China Association of Ultrasound and Engineering (中国超声医学工程学会仪器开发专业委员会常务委员), since 2012
- Member, Institute of Electrical and Electronic Engineers (IEEE), since 2004.

DEPARTMENTAL DUTIES

- Associate Head
- Divisional Research Committee (DRC) chair
- Animal Subjects Ethics sub-Committee (ASESC) member, 2018-2022
- Research seminar and research student coordinator
- Faculty board member
- Chairs and members of assessment panel for postgraduate independent study, registration, confirmation, and thesis examination.
- External examiner for thesis examination committee of MPhil student in the department of Electrical and Electronic Engineering at the University of Hong Kong.

HONORS AND AWARDS

1. **First Runner-up of Hong Kong Innovation Day (HKIA) Competition, February 2020.**
2. Best Poster Award, International Molecular Imaging Summit, October 2019 (PhD student: Song Lin)
3. Best Presentation Award, International Molecular Imaging Summit, October 2019 (PhD student: Song Lin)
4. WMIC Student Travel Stipend, September 2018 (Postdoc: LIU Cheng)
5. T&C Chen Fellowship, 83rd Cold Spring Harbor Laboratory Symposium on Quantitative Biology—Brains & Behavior: Order & Disorder in the Nervous System, Cold Spring Harbour Laboratory, NY, USA. May 2018 (PhD student: QIU Zhihai)
6. **Faculty Research Grant Achievement Award, the Hong Kong Polytechnic University, February 2018.**
7. **Faculty Industrial and Engineering Service Grant Achievement Award, the Hong Kong Polytechnic University, February 2018.**
8. Young investigator award of International Conference on Biomedical Ultrasound 2017, Hong Kong, December 2017 (GUO Jinghui)
9. Best student poster award of International Conference on Biomedical Ultrasound 2017, Hong Kong, December 2017 (PhD student: SONG Lin)
10. First Runner-up prize of Hong Kong medical and healthcare device industries association student research award, Hong Kong, November 2017. (PhD student: Qiu Zhihai)
11. Second Runner-up prize of Hong Kong medical and healthcare device industries association student research award, Hong Kong, November 2017. (PhD student: LIU, Cheng)
12. Travel Scholarship, Janelia conference: Emerging Tools for Acquisition and Interpretation of Whole-Brain Functional Data, HHMI, USA, November 2017
13. WMIC Industry Selected Poster Award by FujiFilm VisualSonics, September 2017 (PhD student: LIU Cheng)
14. WMIC Student Travel Stipend, September 2017 (PhD student: LIU Cheng)
15. Student Travel Stipend, Annual IEEE International Ultrasonics Symposium, September 2017,

- Washington DC, USA (PhD student: QIU Zhihai)
16. Best Student Poster Award, The 14th International Conference on Photonics and Imaging in Biology and Medicine, Suzhou, China, August 2017. (PhD student: CAO Fei)
 17. Best Student Oral Presentation Award, The 8th WACBE World Congress on Bioengineering, July 2017. (PhD student: QIU Zhihai)
 18. Cold Spring Harbor Asia (Tianqiao and Chrissy Chen Institute) Fellowship Award, Francis Crick Symposium Transforming Neuroscience, May 2017. (PhD student: QIU Zhihai)
 19. Student Travel Fellowship, Annual International Symposium of Therapeutic Ultrasound, May 2017, Nanjing, China (MPhil student: YANG Yaoheng)
 20. Student Travel Fellowship, Annual International Symposium of Therapeutic Ultrasound, May 2017, Nanjing, China (PhD student: SONG Lin)
 21. Travel Scholarship, Janelia conference: From light to sound, frontiers in deep tissue imaging, HHMI, May 2017. (PhD student: QIU Zhihai)
 22. Young Investigator Travel Award, 2nd International Brain Stimulation Conference, Barcelona, Spain, March 2017 (PhD student: QIU Zhihai)
 23. Outstanding Poster Award at the Mechanobiology of Disease, Biophysical society, Singapore, September, 2016 (PhD student: QIU Zhihai)
 24. Second prize of Hong Kong medical and healthcare device industries association student research award, Hong Kong, November 2016 (PhD student: LIU Cheng)
 25. Student Travel Stipend, Annual IEEE International Ultrasonics Symposium, September 2015, Taipei, Taiwan (MPhil student: YANG Yaoheng)
 26. Best poster award of International Molecular Imaging Summit, Xiamen University, October 2015 (PhD student: LIU Cheng)
 - 27. Faculty Research Grant Achievement Award, the Hong Kong Polytechnic University February 2015.**
 28. Student Travel Stipend, Annual IEEE International Ultrasonics Symposium, September 2014, Chicago, USA (PhD student: LIU Cheng)
 29. Honorary Professor of Shenzhen Institute of Advanced Technology, 2013.
 30. Honorary Professor of Research Institute of Tsinghua University in Shenzhen 2013
 31. First prize of Hong Kong medical and healthcare device industries association student research award, Hong Kong (MPhil student: LIU, Cheng), November 2013.
 32. Honorary Professor of Research Institute of Tsinghua University in Shenzhen, 2012.
 33. First prize of Hong Kong medical and healthcare device industries association student research award, Hong Kong (Ph. D student: QIU, Weibao), November 2011.
 34. Best paper award for young scientist, Annual Conference of the Chinese Society of Biomedical Engineering (Ph. D student: QIU, Weibao), December 2010.
 35. Travel Award for IEEE Ultrasonics Symposium, Honolulu, Hawaii, October 2003.

JOURNAL PUBLICATIONS

- [J1] Yang, Xiao; Lin, Pengfei; Fei, Chunlong; Qiu, Zhihai; Chen, Qiang; Sun, Xinhao; Wu, Yan; **Lei, Sun**; Feng, Wei; Xu, Zhuo. Temporal evolutionary acoustic pattern generated by a 3D printed Fresnel lens-focused transducer. *Micromachines* (**Revision**) (IF:2.523, 23/64 in Instruments and Instrumentation)
- [J2] C Liu, Y Yang, Chen Y, Dai JY, **L Sun**. Quantitative Characterization of the Colorectal Cancer in a

- Rabbit Model Using High-frequency Endoscopic Ultrasound. Ultrasonics. (Revision) (IF:3.065, 6/32 in Acoustics)
- [J3] Xiaoni Li, Ning Zhao, Botao Jia, Lin Yang, **Lei Sun**, Dawei Wu. Nonlinear Dynamic Modeling, Identification, and Driving of Traveling Wave Rotary Ultrasonic Motors, Nonlinear Dynamics (Revision) (IF:4.867, 11/136 in Mechanics)
- [J4] Z Qiu, Q Xian, J Guo, **L Sun**. Behavioural and functional assessment of ultrasound neural stimulation on *C elegans*. Ultrasonics (submitted)
- [J5] Z Qiu, S Kala, J Guo, Q Xian, J Zhu, T Zhu, X Hou, KF Wong, M Yang, H Wang, **L Sun**. Targeted neuronal stimulation in mouse brains using non-invasive ultrasound Cell Reports:32(7), 18 August 2020, DOI:10.1016/j.celrep.2020.108033 (IF:8.109, 30/195 in Cell Biology)
- [J6] L Song, G Wang, X Hou, S Kala, Z Qiu, KF Wong, F Cao, **L Sun**. Biogenic nanobubbles for effective oxygen delivery and enhanced photodynamic therapy of cancer. Acta Biomaterialia 2020 DOI:10.1016/j.actbio.2020.03.034 (IF:6.319, 3/32 in Biomaterials)
- [J7] S Xu, F Xie, L Tian, S Fallah, F Babaei, SHC Manno, FAM Manno III, L Zhu, KF Wong, Y Liang, RRamalingam, **L Sun**, X Wang, R Plumb, L Gethings, YW Lam and SH Cheng Estrogen accelerates heart regeneration by promoting the inflammatory response in zebrafish. Journal of Endocrinology. 2020 DOI:10.1530/JOE-19-0413 (IF:4.381, 31/145 in Endocrinology and Metabolism)
- [J8] G Wang, L Song, X Hou, S Kala, KF Wong, L Tang, Y Dai, **L Sun**. Surface-modified GVs as nanosized contrast agents for molecular ultrasound imaging of tumor. Biomaterials. 2020 DOI: 10.1016/j.biomaterials.2020.119803 (IF:10.273, 1/32 in Biomaterials)
- [J9] Z Qiu, J Guo, S Kala, J Zhu, Q Xian, W Qiu, G Li, L Meng, HC Chan, H Zheng, **L Sun**. The mechanosensitive ion channel Piezo1 significantly mediates in vitro ultrasonic stimulation of neurons. iScience 21, 448-457, Nov 22 2019 doi: 10.1016/j.isci.2019.10.037 (IF=4.447, 15/71 in Multidisciplinary Sciences)
- [J10] Liu Z, Au M, Wang X, Chan PB, Lai P, **Sun L**, Zheng Y, Rong L, Wen C. Photoacoustic imaging of synovial tissue hypoxia in experimental post-traumatic osteoarthritis. Prog Biophys Mol Biol. 2019;148:12-20. (IF:3.973, 21/72 in Biophysics)
- [J11] Liu C, Yan F, Xu Y, Zheng H, **Sun L**. *In vivo* molecular ultrasound assessment of Glioblastoma neovasculature with endoglin-targeted microbubbles. Contrast Media & Molecular Imaging 2018 doi: 10.1155/2018/8425495 (IF:1.98, 75/129 in Radiology - Nuclear Medicine and Medical Imaging)
- [J12] Fei C, Yang Y, Guo F, Zhou Q, **Sun L**. PMN-PT single crystal ultrasonic transducer with half-concave geometric design for IVUS imaging. IEEE Trans Biomed Eng 2018, 65(9), 2087-2093. (IF:4.288, 9/78 in Biomedical Engineering)
- [J13] Song L, Huang Y, Hou X, Yang Y, Kala S, Qiu Z, Zhang R, **Sun L**. PINK1/Parkin mediated mitophagy promotes resistance to sonodynamic therapy. Cellular Physiology and Biochemistry 2018;49(5):1825-1839. (IF:5.500, 8/83 in Physiology)
- [J14] Liu C, Li S, Gu Y, Xiong H, Wong WT, **Sun L**. Multispectral photoacoustic imaging of tumor protease activity with a gold nanocage based activatable probe. Molecular Imaging and Biology 2018, 20(6), 919-929. (IF:3.608, 25/128 in Radiology - Nuclear Medicine and Nuclear Imaging)
- [J15] Qiu W, Xia J, Shi Y, Mu P, Wang X, Gao M, Wang C, Xiao Y, Yang G, Liu J, **Sun L**, Zheng H. A delayed-excitation data acquisition method for high-frequency ultrasound imaging. IEEE Trans Biomed Eng. 2018, 65(1), 15-20. (IF:4.288, 9/78 in Biomedical Engineering)
- [J16] Yang Y, Qiu Z, Hou X, **Sun L**. Ultrasonic characteristics and cellular properties of *Anabaena* gas

- vesicles. Ultrasound in Medicine and Biology. 2017, 43(12), 2862-2870. (IF:2.645, 7/31 in Acoustics)
- [J17] Zhou B, Leung YK, **Sun L**. The Effects of Low-Intensity Ultrasound on Fat Reduction of Rat Model. BioMed Research International. 2017:4701481.
- [J18] Xu F, Ma W, Huang Y, Qiu Z, **Sun L**. Deep brain stimulation of pallidal versus subthalamic for patients with Parkinson's disease: a meta-analysis of controlled clinical trials, Neuropsychiatric Disease and Treatment, 2016, 12, 1435-1444.
- [J19] Yu Y, Qiu W, **Sun L**. Feasibility of multiple micro-particle trapping - A simulation study. Sensors. 2015, 15(3), 4958-4974.
- [J20] Chen Y, Lam KH, Zhou D, Yue Q, Yu Y, Wu J, Qiu W, **Sun L**, Zhang C, Luo H, Chan HLW, Dai J. High performance relaxor-based ferroelectric single crystals for ultrasonic transducer applications. Sensors. 2014; 14(8):13730-13758.
- [J21] Qiu W, Ye Z, Yu Y, Chi L, Mu P, Li G, Wang C, Xiao Y, Dai J, **Sun L**, Zheng H. A digital multigate doppler method for high frequency ultrasound. Sensors. 2014; 14(8):13348-13360.
- [J22] Liu TY, Lee PY, Huang CC, **Sun L**, Shung KK. A study of the adult zebrafish ventricular function by retrospective Doppler-gated ultra-high-frame-rate echocardiography. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control, Vol. 60, No. 9, pp.1827-1837, 2013.
- [J23] Qiu W, Yu Y, Tsang FK, **Sun L**. A Novel Modulated Excitation Imaging System for Micro-Ultrasound. IEEE Transactions on Biomedical Engineering. 2013; 60(7):1884-1890.
- [J24] Zhou X, **Sun L**, Yu Y, Qiu W, Lien CL, Shung KK, Yu W. Ultrasound Bio-Microscopic Image Segmentation for Evaluation of Zebrafish Cardiac Function. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control 2013; 60(4) 718-726.
- [J25] Qiu W, Yu Y, Chabok H, Tsang FK, Zhou Q, Shung KK, **Sun L**. A Flexible Annular Array Imaging Platform for Micro-Ultrasound. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control. 2013; 60(1) 178-186.
- [J26] Qiu W, Chen Y, Yu Y, Cheng WF, Tsang FK, Dai J, Shung KK, Zhou Q, **Sun L**. An open system for intravascular ultrasound imaging. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control 2012;59(10):2201-2210.
- [J27] Qiu W, Yu Y, Tsang FK, **Sun L**. A multi-functional, reconfigurable pulse generator for high frequency ultrasound imaging. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control 2012;59(7):1558-67.
- [J28] Qiu W, Yu Y, Tsang FK, **Sun L**. An FPGA based open platform for ultrasound biomicroscopy. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control 2012; 59(7):1432-42.
- [J29] Arthur F.T. Mak, Yanyan Yu, Linda P.C. Kwan, **Lei Sun**, Eric W.C. Tam. Deformation and reperfusion damages and their accumulation in subcutaneous tissues during loading and unloading: A theoretical modeling of deep tissue injuries. Journal of Theoretical Biology 2011; 289:65-73.
- [J30] Tsui PH, Huang CC, **Sun L**, Dailey SH, Shung KK. Characterization of lamina propria and vocal muscles in human vocal fold tissue by ultrasound Nakagami imaging. Medical Physics 2011;38(4):2019-2026.
- [J31] Zhang L, Xu X, Hu C, **Sun L**, Yen JT, Cannata JM, Shung KK. A high frequency high frame rate duplex ultrasound linear array imaging system for small animal imaging. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control 2010;57(7):1548-1557.
- [J32] Chang JH, **Sun L**, Yen JT, Shung KK. Low-Cost, High-Speed Back-End Processing System for High-Frequency Ultrasound B-Mode Imaging. IEEE Transactions on Ultrasonics Ferroelectrics

- Frequency Control 2009;56(7):1490-1497.
- [J33] Sun Y; Park J; Stephens DN; Jo JA; **Sun L**; Cannata JM; Saroufeem RMG; Shung KK; Marcu L. Development of a dual-modal tissue diagnostic system combining time-resolved fluorescence spectroscopy and ultrasonic backscatter microscopy. Rev Sci Instrum. 2009;80(6):065104.
- [J34] **Sun L**, Xu X, Feng C, Johnson JA, Shung KK. A high frame rate duplex ultrasound system for *in vivo* cardiovascular research in mice. IEEE Transactions on Biomedical Engineering 2008;55(8):2039-2049.
- [J35] **Sun L**, Lien C, Xu X, Shung KK. *In vivo* cardiac imaging of adult zebrafish using high frequency ultrasound (45-75 MHz). Ultrasound in Medicine and Biology 2008;34(1):31-39.
- [J36] Xu X, **Sun L**, Cannata JM, Yen JT, Shung KK. High-frequency ultrasound Doppler for biomedical applications with a 30 MHz linear array. Ultrasound in Medicine and Biology 2008;34(4):638-646.
- [J37] Cannata JM, Williams JA, Zhou Q, Yu H, **Sun L**, Shung KK, Kim ES. Self-Focused ZnO Transducers for Ultrasonic Biomicroscopy. Journal of Applied Physics, 103: 084109. 2008.
- [J38] **Sun L**, Richard WD, Cannata JM, Ching F, Johnson JA, Yen JT, Shung KK. A high frame rate high frequency ultrasonic system for cardiac imaging in small animals. IEEE Transactions on Ultrasonics Ferroelectrics Frequency Control 2007;54(8):1648-1655.
- [J39] Huang CC, **Sun L**, Dailey SH, Wang SH, Shung KK. High frequency ultrasonic characterization of human vocal fold tissue. Journal of Acoustical Society of America 2007;122(3):1827-1832.
- [J40] Zhou Q, Xu X, Gottlieb EJ, **Sun L**, Cannata JM, Ameri H, Humayun MS, Han P, Shung KK. PMN-PT single crystal, high-frequency ultrasonic needle transducers for pulsed-wave Doppler application. IEEE Transactions on Ultrasonics, Ferroelectrics Frequency Control 2007;54(3):668-675.
- [J41] Huang CC, Ameri H, DeBoer C, Rowley AP, Xu X, **Sun L**, Humayun MS, Shung KK. Evaluation of the hardness of the lens in cataract surgery using high-frequency ultrasonic parameter *in vitro*. Ultrasound in Medicine and Biology 2007;33(10):1609-1616.
- [J42] Huang CC, Zhou Q, Ameri H, Wu D, **Sun L**, Humayun MS, Shung KK. Determining the acoustic properties of the lens using a high-frequency ultrasound needle transducer. Ultrasound in Medicine and Biology 2007;33(12):1971-1977.
- [J43] **Sun L**, Collins CM, Schiano JL, Smith MB, Smith NB. Adaptive real-time closed-loop temperature control for ultrasound hyperthermia using magnetic resonance thermometry. Concepts in Magnetic Resonance. Part B: Magnetic Resonance Engineering 2005;27B:51-63.

CONFERENCE PROCEEDINGS AND ABSTRACTS

- [C1] Quanxiang Xian, Zhihai Qiu, Jinghui Guo, Shashwati Kala, Jiejun Zhu, **Lei Sun**. Sonogenetic stimulation of mouse brain by non-invasive ultrasound, World Molecular Imaging Congress 2020, online virtual meeting, Oct 7-9, 2020. **(Oral)**
- [C2] Lin Song, Xuandi Hou, Yaoheng Yang, **Lei Sun**. Gas-filled Protein Nanostructures as Cavitation Nuclei for Molecule-Specific Sonodynamic Therapy, World Molecular Imaging Congress 2020, online virtual meeting, Oct 7-9, 2020. **(Oral)**
- [C3] Jiejun Zhu, Jinghui Guo, S Kala, Zhihai Qiu, Lei Sun. Molecular mechanism of ultrasound neuron stimulation, World Molecular Imaging Congress 2020, online virtual meeting, Oct 7-9, 2020.
- [C4] Xuandi Hou, Zhihai Qiu, Ting Zhu, **Lei Sun**. A genetic targeted mechanogenetics by noninvasive ultrasound, World Molecular Imaging Congress 2020, online virtual meeting, Oct 7-9, 2020.
- [C5] Quanxiang Xian, Zhihai Qiu, Jinghui Guo, Shashwati Kala, Jiejun Zhu, Lei Sun. Targeted Surface

- and Deeper Brain Stimulation by Non-Invasive Ultrasound, 2020 IEEE International Ultrasonics Symposium, online virtual, Sep 7-11 2020.
- [C6] Xuandi Hou, Zhihai Qiu, Ting Zhu, Lei Sun. Ultrasonic Modulation of Neural Activity Mediated by Biogenic Nano Gas Vesicles. 2020 IEEE International Ultrasonics Symposium, online virtual, Sep 7-11 2020.
- [C7] L Song, G Wang, X Hou, S Kala, KF Wong, **L Sun**. Development of nanooxygen carrier for enhanced cancer therapy. International Molecular Imaging Symposium & Doctoral Forum on Molecular Imaging, Xiamen China, Oct 18-20 2019. **(Oral)**
- [C8] Q Xian, Z Qiu, J Guo, S Kala, J Zhu, **L Sun**. Targeted deeper brain stimulation by non-invasive ultrasound. Cold Spring Harbor Asia Conference Neurobiology of Behavior & Neuropsychiatric Disorders. Suzhou, China, September 16-20 2019. **(Oral)**
- [C9] X Hou, Z Qiu, J Zhu, J Guo, S Kala, T Zhu, **L Sun**. Acoustic mechanogenetics—A noninvasive tool for probing brain function. Cold Spring Harbor Asia Conference and Francis Crick Symposium—Transforming Neuroscience: Questions & Experiments. Suzhou, China, April 15-19 2019. **(Oral)**
- [C10] Z Qiu, J Guo, S Kala, J Zhu, Q Xian, X Hou, T Zhu, **L Sun**. Ultrasound brain stimulation via activation of Piezo1. Cold Spring Harbor Asia Conference and Francis Crick Symposium—Transforming Neuroscience: Questions & Experiments. Suzhou, China, April 15-19 2019. **(Oral)**
- [C11] **L Sun**. Targeted neuro-modulation by noninvasive ultrasound. Westlake International Forum on Ultrasound in Medicine and Biology. Hangzhou China, Mar 7-9, 2019 **(Invited Oral)**
- [C12] Zhihai Qiu, Shashwati Kala, Jinghui Guo, Quanxiang Xian, Jiejun Zhu, **Lei Sun**. Non-invasive and selective brain stimulation by ultrasound via activation of mechanosensitive ion channels. 3rd International Brain stimulation conference. Vancouver, Canada, Feb 24-27, 2019. **(Oral)**
- [C13] Fei Cao, Zhihai Qiu, Kinfung Wong, Puxiang Lai, and Lei Sun "Nonlinear photoacoustic generation by pump-probe excitation", Proc. SPIE 10878, Photons Plus Ultrasound: Imaging and Sensing 2019, 108784R (27 February 2019); <https://doi.org/10.1117/12.2507342>
- [C14] Z Qiu, J Guo, S Kala, **Sun L**. Non-invasive and selective brain stimulation by ultrasound. Society of Neuroscience Annual Meeting Neuroscience 2018, San Diego, CA, USA, Nov 3-7, 2018 **(Oral)**
- [C15] Q Xian, Z Qiu, J Guo, **Sun L**. Behavioral and functional assessment of low frequency low intensity ultrasound stimulation on *Caenorhabditis elegans*. Society of Neuroscience Annual Meeting Neuroscience 2018, San Diego, CA, USA, Nov 3-7, 2018
- [C16] T Zhu, X Hou, Z Qiu, J Guo, **Sun L**. Ultrasonic sensitivity of neurons targeted by gene encoded nanoscale gas vesicles. Society of Neuroscience Annual Meeting Neuroscience 2018, San Diego, CA, USA, Nov 3-7, 2018
- [C17] L Song, G Wang, X Hou, Z Qiu, **L Sun**. Tumor hypoxic microenvironment alteration and cancer therapy with biogenic nanoparticle based oxygen delivery. 2018 IEEE International Ultrasonics Symposium, Kobe, Japan, Oct 22-25 2018.
- [C18] G Wang, X Hou, L Song, **L Sun**. Tumor retention of nanoscale gas vesicles for molecular ultrasound imaging. 2018 IEEE International Ultrasonics Symposium, Kobe, Japan, Oct 22-25 2018. **(Oral)**
- [C19] F Cao, Z Qiu, KF Wong, P Lai, **L Sun**. Investigation of nonlinear photoacoustic property of porphyrin by pump-probe excitation. 2018 IEEE International Ultrasonics Symposium, Kobe, Japan, Oct 22-25 2018.
- [C20] J Guo, Z Qiu, R Zhang, J Wang, L Meng, H Zheng, HC Chan, **L Sun**. Ultrasound stimulates insulin secretion via activating mechanical sensitive ion channels in pancreatic islet β cells. 2018 IEEE International Ultrasonics Symposium, Kobe, Japan, Oct 22-25 2018.

- [C21] Z Qiu, J Guo, S Kala, J Zhu, **L Sun**. Ultrasound brain stimulation via activation of Piezo1. 2018 IEEE International Ultrasonics Symposium, Kobe, Japan, Oct 22-25 2018.
- [C22] P Lin, C Fei*, Q Chen, X Sun, Y Wu, Z Qiu, **L Sun**. Temporal evolutionary acoustic pattern generated by a 3D printed Fensnel lens-focused transducer. 2018 IEEE International Ultrasonics Symposium, Kobe, Japan, Oct 22-25 2018.
- [C23] G Wang, X Hou, L Song, **L Sun**. Tumor retention of nanoscale gas vesicle for molecular ultrasound imaging. World Molecular Imaging Congress 2018, Seattle, WA, USA, Sep 12-15, 2018. **(Oral)**
- [C24] L Song, G Wang, X Hou, Z Qiu, **L Sun**. Tumor hypoxic microenvironment alteration and cancer therapy with biogenic nanoparticle based oxygen delivery. World Molecular Imaging Congress 2018, Seattle, WA, USA, Sep 12-15, 2018.
- [C25] C Liu, D Shan, C Liu, L Wang, P Lai, J Yang, **L Sun**. In Vivo Multispectral Photoacoustic Imaging of Tumor Protease Activity with a Citrate-based Biodegradable Polymeric Nano-Probe. World Molecular Imaging Congress 2018, Seattle, WA, USA, Sep 12-15, 2018.
- [C26] F Cao, Z Qiu, L Song, P Lai, **L Sun**. Investigate Mitochondrial Oxygen Condition by Photoacoustic Imaging. World Molecular Imaging Congress 2018, Seattle, WA, USA, Sep 12-15, 2018.
- [C27] **Lei Sun**. Selective and Non-invasive Ultrasound Brain Stimulation. International Alzheimer's Diseases Conference 2018. Hong Kong, Sept 7-8 2018. **(Invited Oral)**
- [C28] J Guo, T Zhong, Z Qiu, P Lai, **Sun L**. Temporal evolutionary single neuron optogenetics by using a multi-modal fibre. Gordon Research Conference – 2018 Molecular and Cellular Neurobiology. Hong Kong, Jul 1- 6 2018
- [C29] Z Qiu, J Guo, S Kala, **Sun L**. Non-invasive and selective brain stimulation by ultrasound. Gordon Research Conference – 2018 Molecular and Cellular Neurobiology. Hong Kong, Jul 1- 6 2018
- [C30] Q Xian, Z Qiu, J Guo, **Sun L**. Behavioral and functional assessment of low frequency low intensity ultrasound stimulation on *Caenorhabditis elegans*. Gordon Research Conference – 2018 Molecular and Cellular Neurobiology. Hong Kong, Jul 1- 6 2018
- [C31] T Zhu, X Hou, Z Qiu, J Guo, **Sun L**. Ultrasonic sensitivity of neurons targeted by gene encoded nano-scale gas vesicles. Gordon Research Conference – 2018 Molecular and Cellular Neurobiology. Hong Kong, Jul 1- 6 2018
- [C32] Qiu Z, Guo J, Kala S, **Sun L**. Noninvasive and selective ultrasound brain stimulation. 83rd Cold Spring Harbor Laboratory Symposium on Quantitative Biology—Brains & Behavior: Order & Disorder in the Nervous System. Cold Spring Harbor, NY, USA, May 30 - June 4, 2018
- [C33] Qiu Z, Guo J, Kala S, Chan H, **Sun L**. Fundamentals and toolkits for precise ultrasonic neuron stimulation. 3rd International Symposium on Mechanobiology, Singapore, Dec 11-14, 2017. **(Oral)**
- [C34] **L Sun**. Precise ultrasound neuro-modulation. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017. **(Oral)**
- [C35] J Guo, **L Sun**. Ultrasound regulates insulin release via the activation of mechanosensitive ion channels in pancreatic beta cells. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017. **(Oral)**
- [C36] C Liu, **L Sun**. A novel strategy for in vivo imaging of tumor protease activity with molecular photoacoustic imaging. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017. **(Oral)**
- [C37] L Song, **L Sun**. Development of ultrasound sensitive gas vesicles for oxygen delivery in cancer therapy. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017

- [C38] F Cao, **L Sun**. Detection of oxygen level with photoacoustic imaging. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017
- [C39] Z Qiu, **L Sun**. Imaging of ultrasound stimulation on neural development with light-sheet microscopy. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017
- [C40] X Hou, **L Sun**. The study of PpIX-GVs mediated sonodynamic therapy. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017
- [C41] Q Xian, **L Sun**. Test low frequency ultrasound neuron stimulation on free moving *C. elegans*. International Conference in Biomedical Ultrasound 2017. Hong Kong, Dec 2-4, 2017
- [C42] Qiu Z, Guo J, Kala S, Zhu J, Wang J, Chan H, **Sun L**. Fundamentals and toolkits for precise ultrasonic neuron stimulation. Society of Neuroscience Annual Meeting Neuroscience 2017, Washington DC, USA, Nov 11-15, 2017. **(Oral)**
- [C43] Qiu Z, Xian Q, **Sun L**. Investigate the behavioral and functional response of *Caenorhabditis elegans* by ultrasound stimulation. Society of Neuroscience Annual Meeting Neuroscience 2017, Washington DC, USA, Nov 11-15, 2017. **(Oral)**
- [C44] Cao F, Zhang R, Qiu Z, **Sun L**. Study Piezo1 localization and transportation dynamics by light-sheet microscopy. Society of Neuroscience Annual Meeting Neuroscience 2017, Washington DC, USA, Nov 11-15, 2017
- [C45] Zhang R, Qiu Z, **Sun L**. Ultrasound modulate on axonal function. Society of Neuroscience Annual Meeting Neuroscience 2017, Washington DC, USA, Nov 11-15, 2017
- [C46] Janelia Farm Conference—Emerging Tools for Acquisition and Interpretation of Whole-Brain Functional Data, Janelia Farm, USA. Nov 5-8, 2017. **(Oral)**
- [C47] F Cao, Z Qiu, R Zhang, P Lai, and **L Sun**. Nonlinear Photoacoustic Imaging by Pump-Probe Excitation. PIBM 2017 - The 14th International Conference on Photonics and Imaging in Biology and Medicine. Suzhou, China, Sep 26-28, 2017
- [C48] R Zhang, Z Qiu, F Cao, J Guo, and **L Sun**. Study Piezo1 Localization and Transportation Dynamics by Light-sheet Microscopy. PIBM 2017 - The 14th International Conference on Photonics and Imaging in Biology and Medicine. Suzhou, China, Sep 26-28, 2017
- [C49] Liu C, Li S, Gu Y, Wong WT, **Sun L**. Multi-wavelength Spectroscopic Molecular Photoacoustic Nano-probe for Improved Visualization of Tumor Protease Activity In Vivo by Using Coupled Gold Nanocages & Chromophores. World Molecular Imaging Congress 2017, Philadelphia, USA, Sep 13-16, 2017.
- [C50] Liu C, Li S, Gu Y, Wong WT, **Sun L**. In Vivo Spectroscopic Photoacoustic Imaging of Tumor Protease Activity by Using Gold Nanocage-based Activatable Nanoprobe. 2017 IEEE International Ultrasonics Symposium, Washington DC, USA, Sep 6-9 2017.
- [C51] Qiu Z, Guo J, Yang Y, Wang J, Zhang R, Zhu J, Kala S, Chan HC, **Sun L**. Precise control of neuronal activity by ultrasound: fundamentals and toolkits. 2017 IEEE International Ultrasonics Symposium, Washington DC, USA, Sep 6-9 2017.
- [C52] Mu, P, Xia, J, Wang, X, Wang, C, Xiao, Y, Yang, G, **Sun, L**, Zheng, H, Qiu, W. A delayed-excitation imaging method for micro-ultrasound. 2017 IEEE International Ultrasonics Symposium, Washington DC, USA, Sep 6-9 2017.
- [C53] L Song, X Zhu, Z Qiu, **L Sun**. Subcellular localization of sonosensitizer for autophagy cooperated apoptosis in sonodynamic therapy. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017. **(Oral)**
- [C54] C Liu, S Li, J Chi, Y Xu, Y Gu, **L Sun**. Activatable nano-probe for molecular photoacoustic imaging

- of tumor protease activity. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017. **(Oral)**
- [C55] Z Qiu, J Guo, Y Yang, J Wang, R Zhang, J Zhu, S Kala, HC Chan, **L Sun**. Ultrasound toolkits for precise control of neuron activity. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017. **(Oral)**
- [C56] Z Qiu, R Zhang, J Wang, J Zhu, Q Xian, Y Yang, J Guo, S Kala, HC Chan, **L Sun**. Modulation CREB activity by ultrasound. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017. **(Oral)**
- [C57] C Liu, Y Xu, J Chi, F Yan, **L Sun**. In vivo molecular ultrasound imaging of glioblastoma angiogenesis using endoglin-targeted microbubble. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017
- [C58] Y Yang, Z Qiu, X Hou, **L Sun**. Nano gas vesicle a non-linear molecular reporter with dual-resonance for ultrasound imaging. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017
- [C59] Y Yang, X Hou, Z Qiu, R Zhang, **L Sun**. Enhanced sonodynamic therapy by oxygen-rich nano gas vesicle. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017
- [C60] F Cao, P Lai, **L Sun**. Detection of oxygen level with photoacoustic imaging. The 8thWACBE world congress on bioengineering. Hong Kong, Jul 30 – 2 Aug, 2017
- [C61] Janelia Farm Conference—From Light to Sound: Frontier in Deep Tissue Imaging, Janelia Farm, USA. June 4-7, 2017
- [C62] Yang Y, Hou Xu, Qiu Z, Zhang R, and **Sun L**. Enhanced sonodynamic therapy using oxygen-rich nano gas vesicle. 17th International Symposium on Therapeutic Ultrasound, Najing, China, May 31- June 2, 2017.
- [C63] Song L, Huang Y, Zhu X, and **Sun L**. Subcellular localization of sonosensitizer for autophagy cooperated apoptosis in sonodynamic therapy. 17th International Symposium on Therapeutic Ultrasound, Najing, China, May 31- June 2, 2017.
- [C64] Qiu Z, Guo J, Yang Y, Wang J, Zhang R, Zhu J, Kala S, Chan H, and **Sun L**. Developing a sonogenetic toolkit for precise control of neuronal activity. CSH Cold Spring Harbor Asia Conference and Francis Crick Symposium—Transforming Neuroscience: Questions & Experiments. Suzhou, China, May 8-12 2017.
- [C65] Qiu Z, Zhang R, Yang Y, Kala S, Wang J, Guo J, Xian Q, Chan H, and **Sun L**. Modulating CREB activity by ultrasound. CSH Cold Spring Harbor Asia Conference and Francis Crick Symposium—Transforming Neuroscience: Questions & Experiments. Suzhou, China, May 8-12 2017.
- [C66] Qiu Z, Song L, Wang J, Kala S, **Sun L**. Sensing ultrasound promotes axon growth during development. 2nd International Brain Stimulation Conference, Barcelona, Spain, March 5-8, 2017
- [C67] Qiu Z, Yang Y, Guo J, Kala S, Yang L, Chan HC, **Sun L**. Acoustic mechanogenetics: A promising tool for probing brain function. 2nd International Brain Stimulation Conference, Barcelona, Spain, March 5-8, 2017
- [C68] Qiu Z, Cao F, Yang Y, **Sun L**. Imaging of ultrasound stimulation on zebrafish neural development with light-sheet microscopy. 2nd International Brain Stimulation Conference, Barcelona, Spain, March 5-8, 2017
- [C69] Qiu Z, Guo J, Yang L, Yang Y, Huang Y, Kala S, Chan H, **Sun L**. Control of neuron activity by sonogenetics. Society of Neuroscience Annual Meeting 2016, San Diego, USA, Nov 12-16, 2016. **(Oral)**

- [C70] Qiu Z, Yang Y, Guo J, Kala S, Chan H, and **Sun L**. Acoustic mechanogenetics: A noninvasive tool for probing brain function. Cold Spring Harbor Asia Conference—Probing Neural Networks with Light: Imaging Structure & Function in the Living Brain. Suzhou, China, Oct 17-21 2016. **(Oral)**
- [C71] Qiu Z, Yang Y, Guo Y, Kala S, Chan HC, **Sun L**. Acoustic Mechanogenetics for Controlling Neuron Activity and Signaling. Mechanobiology of Diseases, Singapore. Sept 27-30, 2016.
- [C72] **Sun L**, Characterization of nano gas vesicle for ultrasound theranostics, 13th Annual Ultrasonic Transducer Engineering Conference, Torrance, USA, May 16-17 2016. (invited **Oral**)
- [C73] Yang Y, Qiu Z, **Sun L**. Biogenic nano gas vesicle—An active probe for cellular biophysics. Cold Spring Harbor Asia conference on New Advances in Optical Imaging of Live Cells and Organisms. Suzhou, China, Dec 7-11 2015. **(Oral)**
- [C74] Liu C, Yang Y, Qiu Z, Huang Y, **Sun L**. In vivo assessment of protease activity in colorectal cancer by using activatable molecular photoacoustic imaging. 2015 IEEE Ultrasonics Symposium, Taipei, Taiwan, Oct 21-24 2015.
- [C75] C Liu, Y Yang, Z Qiu, Y Huang, F Yan, **L Sun**. Molecular ultrasound assessment of colorectal tumor angiogenesis with endoglin-targeted contrast microbubbles. 2015 IEEE Ultrasonics Symposium, Taipei, Taiwan, Oct 21-24 2015.
- [C76] Y Huang, Z Qiu, Y Yang, C Liu, **L Sun**. Study of cell death induced by cell membrane localized sonodynamic therapy. 2015 IEEE Ultrasonics Symposium, Taipei, Taiwan, Oct 21-24 2015.
- [C77] Y Yang, Z Qiu, C Liu, Y Huang, J Dai, **L Sun**. Acoustic characterization of nano gas vesicles. 2015 IEEE Ultrasonics Symposium, Taipei, Taiwan, Oct 21-24 2015.
- [C78] Guo F, Liu C, Yang Y, Chen Y, Yang B, Dai J, **Sun L**. Development of Focused IVUS Transducer Using PMN-0.33PT Single Crystal. 2014 IEEE Ultrasonics Symposium, Chicago, USA, Sept 3-6 2014. **(Oral)**
- [C79] Qiu W, Ye Z, Chi L, Mu P, Li G, Wang C, Xiao Y, Qian M, **Sun L**, Zheng H. A programmable ultrasound platform for multi-gate Doppler measurement. 2014 IEEE Ultrasonics Symposium, Chicago, USA, Sept 3-6 2014.
- [C80] **(invited)** Liu C, Yang Y, Qiu W, **Sun L**. Characterization of the colorectal cancer by quantitative high frequency endoscopic ultrasound. International Conference on Biomedical Ultrasound. Taipei, Taiwan, Oct 22-23, 2013. **(Oral)**
- [C81] Liu C, Chen Y, Qiu W, Yu Y, Dai J, **Sun L**. A Novel High-frequency Endoscopic Ultrasound System for In Vivo Imaging of Colorectal Cancer in a Rabbit Model. The 6th WACBE World congress on bioengineering. Beijing, August 5-8, 2013.
- [C82] Liu C, Yang Y, Huang C, **Sun L**. Characterization of the colorectal cancer in a rabbit model using quantitative high-frequency endoscopic ultrasound. 2013 IEEE UFFC Joint symposia, Prague, Czech Republic, July 21-25 2013.
- [C83] Liu C, Chen Y, Qiu W, Yu Y, Dai J, **Sun L**. A Novel high-frequency endoscopic ultrasound system for colorectal cancer diagnosis. 2013 IEEE UFFC Joint symposia, Prague, Czech Republic, July 21-25 2013.
- [C84] Qiu W, Yu Y, FK Tsang, Qian M, Zheng H, **Sun L**. A modulated excitation imaging system for micro-ultrasound. 2013 IEEE UFFC Joint symposia, Prague, Czech Republic, July 21-25 2013.
- [C85] Yu Y, Qiu W, **Sun L**. Particle trapping study in multiple-focus acoustic field. 2013 IEEE UFFC Joint symposia, Prague, Czech Republic, July 21-25 2013.
- [C86] Liu T-Y, Lee P-Y, Huang C-C, **Sun L**, Shung KK. A study of the adult zebrafish ventricular function by retrospective doppler-gated ultrahigh-frame-rate echocardiography. 2013 IEEE UFFC Joint symposia,

Prague, Czech Republic, July 21-25 2013.

- [C87] Qiu W, Zheng H, **Sun L**. Open System for Micro-Ultrasound. 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Osaka, Japan, July 2013.
- [C88] **(invited) Sun L**. Open system for high frequency ultrasound imaging. 11th Annual Ultrasonic Transducer Technology Conference. Los Angeles, CA, April 2013.
- [C89] **(invited) Sun L**, Dai JY, Qiu W, Yu Y, Chen Y. Biomedical applications of micro-ultrasound. 2012 International Symposium on Integrated Functionalities (ISIF 2012), Hong Kong, China, June 2012.
- [C90] Qiu W, Yu Y, Tsang FK, **Sun L**. An Flexible Annular Array Imaging Platform for Micro-Ultrasound. 2012 IEEE Ultrasonics Symposium, Dresden, Germany, October 7-10 2012. P.2172-2175
- [C91] Yu Y, Qiu W, **Sun L**. Radiation forces study of multiple trapping acoustic tweezers. 2012 IEEE Ultrasonics Symposium, Dresden, Germany, October 7-10 2012.
- [C92] Qiu W, Chen Y, Yu Y, Tsang FK, Dai JY, **Sun L**. An Open System for Intravascular Ultrasound Imaging. 2012 IEEE Ultrasonics Symposium, Dresden, Germany, October 7-10 2012. P.643-646
- [C93] Qiu W, Chen Y, Cheng WF, Yu Y, Tsang FK, Dai JY, **Sun L**. An open system for intravascular ultrasound imaging. Acoustics 2012 Hong Kong, Hong Kong, May 2012.
- [C94] Qiu W, Yu Y, **Sun L**. A programmable and compact open platform for ultrasound bio-microscopy. 2011 IEEE Ultrasonics Symposium, Orlando, FL, October 2011.
- [C95] Yu Y, Qiu W, **Sun L**. Particle trapping of acoustic tweezers. 2011 IEEE Ultrasonics Symposium, Orlando, FL, October 2011.
- [C96] **(invited) Qiu W**, Yu Y, **Sun L**. A programmable real-time high frequency ultrasound imaging platform. The 5th world congress on bioengineering. Tainan, Taiwan, August 2011.
- [C97] Qiu W, Tsang FK, Yu Y, Sun L. A Flexible and High Speed Digital Scan Converter for High Frequency Ultrasound Imaging. Chinese Society of Biomedical Engineering 30-year Anniversary and 2010 Annual Meeting, Beijing, December 2010.
- [C98] Yu Y, Lien CL, Shung KK, **Sun L**. Zebrafish cardiac functional regeneration using high frequency ultrasound imaging. BME 2010 Biomedical Engineering International Conference, Hong Kong, November 2010.
- [C99] Qiu W, Yu Y, Shung KK, **Sun L**. Real-time high frequency ultrasound imaging system based on high speed FPGA. 2010 IEEE Ultrasonics Symposium, San Diego, CA, October 2010.
- [C100] Yu Y, Zhou X, Yu W, CL Lien, Shung KK, **Sun L**. Cardiac parameters analysis for zebrafish heart regeneration based on high frequency ultrasound imaging. 2010 IEEE Ultrasonics Symposium, San Diego, CA, October 2010.
- [C101] **(invited) Sun L**, Qiu W, Yu Y. Development of an ultrasound microscopic imaging system for zebrafish. 10th Annual Ultrasonic Transducer Technology Conference. Los Angeles, CA, April 2010.
- [C102] **Sun L**, Lien CL, Wu Q, Chang JH, Shung KK. Longitudinal study of adult zebrafish heart regeneration using high frequency echocardiography. Proceedings of the 2008 IEEE Ultrasonics Symposium, Beijing China, 2008.
- [C103] Zhang L, Xu X, Hu C, **Sun L**, Yen JT, Cannata JM, Shung KK. Improved high-frequency high frame rate duplex ultrasound linear array imaging system. Proceedings of the 2008 IEEE Ultrasonics Symposium, Beijing China, 2008.
- [C104] Raphael DT, **Sun L**, Wu D, Zhang Y, Berger J. 35MHz UBM ultrasound imaging of excised ovine lumbar spinal nerve roots. Proceeding of American Anesthesiologist, Orlando, FL, October 2008.
- [C105] **Sun L**, Lien C, Shung KK. In vivo cardiac imaging of adult zebrafish using high frequency ultrasound. Proceedings of the 2007 IEEE Ultrasonics Symposium, New York, October 2007.

- [C106] Huang C, **Sun L**, Dailey SH, Wang S, Shung KK. Characterization of human vocal fold tissues by high frequency ultrasound. Proceedings of the 2007 IEEE Ultrasonics Symposium, New York, October 2007.
- [C107] Xu X, Zhang L, **Sun L**, Yen JT, Cannata JM, Shung KK. High-frequency Duplex Ultrasound Imaging System for Biomedical Applications Using a 30 MHz Linear Array. Proceedings of the 2007 IEEE Ultrasonics Symposium, New York, October 2007.
- [C108] Chang JH, Yen JT, **Sun L**, Shung KK. High-Speed Backend Processing System for High Frame Rate High Frequency Ultrasound B-mode Imaging, Proceedings of the 2007 IEEE Ultrasonics Symposium, New York, October 2007.
- [C109] Cannata JM, Williams JA, Zhou Q, Yu H, **Sun L**, Kim ES, Shung KK. Self-focused ZnO transducers for ultrasonic biomicroscopy. Proceedings of the 2007 IEEE Ultrasonics Symposium, New York, October 2007.
- [C110] **Sun L**, Xu X, Lien C, Cannata JM, Shung KK. High frequency ultrasound in pre-clinical and clinical applications. 8th Annual Ultrasonic Transducer Engineering Conference, Los Angeles, CA, April 2007.
- [C111] Xu X, **Sun L**, Cannata JM, Zhou Q, Wu D, Yen JT, Shung KK. High-frequency ultrasound Doppler system for biomedical applications with 30 MHz linear array and PMN-PT needle transducer. 8th Annual Ultrasonic Transducer Engineering Conference, Los Angeles, CA, April 2007.
- [C112] **Sun L**, Feng C, Cannata J, Johnson J, Shung KK. High frame rate high frequency ultrasound imaging system for small animal cardiac imaging. 5th International Conference on Ultrasonic Biomedical Microimaging, Cargese, France, September 2006.
- [C113] **Sun L**, Sangkatumvong S, Shung KK. A high resolution digital ultrasound system for imaging of zebrafish. Proceedings of the 2006 IEEE Ultrasonics Symposium, Vancouver, Canada, October 2006, pp.2202-2205.
- [C114] **Sun L**, Feng C, Cannata, JM, Johnson JA, Yen JT, Shung KK. A real-time high frame rate high frequency ultrasonic system for cardiac imaging in small animals. Proceedings of the 2006 IEEE Ultrasonics Symposium, Vancouver, Canada, October 2006, pp.2206-2209.
- [C115] **Sun L**, Johnson J, Cannata J, Yen J, Feng C, Shung KK. Development of a high frame rate ultrasonic system for cardiac imaging in small animals. Proceeding of SPIE Medical Imaging 2006, San Diego, CA, February 2006, pp. 61470R1-7.
- [C116] Chang JH, Yen JT, **Sun L**, Shung KK. Implementation of high frame rate digital scan converter for high frequency ultrasound mechanical sector scanner. Proceedings of the 2006 IEEE Ultrasonics Symposium, Vancouver, Canada, October 2006, pp.2226-2229.
- [C117] Kim HH, Cannata, JM, Liu R, **Sun L**, Shung KK, Silverman RH, Babar S. Dual element transducers for high frequency harmonic imaging. Proceedings of the 2006 IEEE Ultrasonics Symposium, Vancouver, Canada, October 2006, pp.2325-2328.
- [C118] Jo JA, Fang Q, Papaioannou T, Qiao JH, Fishbein MC, Beseth B, Dorafshar AH, Reil T, Baker D, Freischlag J, Shung KK, **Sun L**, Marcu L. Diagnosis of vulnerable atherosclerotic plaques by time-resolved fluorescence spectroscopy and ultrasound imaging. Proceedings of the 28th IEEE EMBS Annual International Conference, New York, NY, August 2006, pp.2663-2666.
- [C119] Xu X, Hu C, **Sun L**, Yen J, Shung KK. High frequency high frame rate ultrasound imaging system for small animal imaging with linear arrays. Proceedings of the 2005 IEEE Ultrasonics Symposium, Amsterdam, Netherlands, September 2005, pp. 1431-1434.
- [C120] **Sun L**, Collins CM, Smith MB, Smith NB. Fast adaptive control for MRI-guided ultrasound

hyperthermia treatment for prostate disease: in vitro and in vivo results. Proceedings of the International Society of Magnetic Resonance in Medicine, Twelfth Scientific Meeting, Kyoto, Japan, 2004. (cited 1 time)

[C121] **Sun L**, Schiano JL, Smith NB. Novel adaptive control system for ultrasound hyperthermia treatment of prostate disease. Proceedings of the 2003 IEEE Ultrasonics Symposium, Honolulu, HI, October 2003, pp. 1274-1277. (cited 6 times)

[C122] **Sun L**, Schiano JL, Smith NB. An adaptive control method for ultrasound prostate hyperthermia. International Association of Science and Technology for Development (IASTED) International Conference, Applied Modeling and Simulation (AMS 2002), Boston, MA, September 2002, pp 347-352.