Associate Professor (w/ tenure), Department of Electrical Engineering
Adjunct Associate Professor, Department of Biomedical Engineering
Director of SMALL (Sensors and MicroActuators Learning Laboratory)
University at Buffalo, The State University of New York (SUNY–Buffalo)
113C Davis Hall, Buffalo, New York 14260-1920, USA
Tel: 1-716-645-1025, Fax: 1-716-645-3656, kwangoh@buffalo.edu,
http://SMALL.Buffalo.edu, http://MicroTAS.org, http://www.linkedin.com/in/kwang-w-oh-11117221/

SUMMARY

Research Interest: BioMEMS, Lab-on-chip, Microfluidics, Microfabrication, Test Phantom
Droplet-based microfluidics, microfluidic circuits using electric circuits analogy, particle/cell sorting, cell study platform/3D model, lab-on-chip/point-of-care micropumping, blood sample preparation devices, magnetic bead-based immunoassay, micro SERS, micro PCR, innovative microfabrication technology, non-invasive/invasive health monitoring, acoustic test phantom arm/finger

Grants
Total fund more than $3 M (2006 - current) and $1.3 M (2012 - current)
Own share exceeding $1.4 M (2006 - current)

Scholarship
Peer-reviewed journal papers: 52, Peer-reviewed conf. proceedings: 65, Invited talk: 38
Issued US patents: 21, Special issues & Book chapters: 5, Cover-paged journal papers: 3
Google Scholar: citation = 3167, *h*-index = 26, *i10*-index = 47

Mentorship
Current PhD: 6, Current MS: 2; Graduated PhD: 5, Graduated MS: 6, PostDoc: 1, Undergraduate research students: 20, K-12 students: 5

Teaching
EE 203 Circuit Analysis 2 (Spring 07, 08, 09, 10, 11, 12) (Average # of students: 71)
EE 311 Electronic Devices and Circuits 2 (Spring 13, 15, 16, 17) (Average # of students: 94)
EE 528 *BioMEMS and Nanobiosensors* (Fall 06) (Average # of students: 21)
EE 428/528 *BioMEMS & LOC* (Fall 07, 08, 09, 10, 11, 12, 13, 14, 15, 16) (Average # of students: 9+17=26)
EE 526 *Wearable and Implantable Sensors* (Spring 15, 16, 17) (Average # of students: 45)
UE 141 Freshman Seminar Series: *Nanostructured Materials* (Fall 06), *Bringing Physics and Engineering Life* (Spring 11, 12) (Average # of students: 13)

Award
Emerging Investigators 2012, Lab Chip, Royal Society of Chemistry (RSC) (2013)
Honor of CEO, Samsung Electronics, for development of a micro PCR system (2003)

Professional
Guest Editor: Special Issue, "Biomedical Microfluidic Devices", *Micromachines* (IF: 1.295) (2016 - current)
Guest Editor: Special Issue, "On-Chip Sensors", *Sensors* (IF: 2.245) (2013 - 2015)
Symposium Co-chair: Micro, Nano & Bio Fluidics, NanoTech (2012 - current)
Editorial Board Member: Biomedical Engineering Letters, American Journal of Engineering and Applied Sciences, Advanced Health Care Technologies, Trans. Electr. Electron. Mater, Journal of Engineering
Track Chair: Biosensor, Nanotechnology, BioMEMS, 2015 World Congress on Medical Physics & Biomedical Engineering

EDUCATION

1997 - 2001 **Ph.D.** in Electrical & Computer Engineering, University of Cincinnati, Cincinnati, Ohio
Advisor: Prof. Chong H. Ahn

1995 - 1997 **M.S.** in Electrical & Computer Engineering, University of Cincinnati, Cincinnati, Ohio
Advisor: Prof. Chong H. Ahn, Co-advisor: Prof. K. P. Roenker

Spring 1995 Enrolled in a MS program in Semiconductor Science & Tech, Chonbuk National University, Jeonju, Korea; Studied interdisciplinary graduate courses in Semiconductor Science & Technology

1991 - 1995 **B.S.** in Physics (GPA: 3.98/4.0), Chonbuk National University, Jeonju, Korea; Focused on semiconductor physics and optics

EMPLOYMENT HISTORY

University at Buffalo (UB), The State University of New York (SUNY–Buffalo)

2012 - *Associate Professor*, Department of Electrical Engineering
2015 - *Adjunct Associate Professor*, Department of Biomedical Engineering
2006 - 2012 *Assistant Professor*, Department of Electrical Engineering
2006 *Visiting Assistant Professor*, Department of Electrical Engineering

Samsung Advanced Institute of Technology (SAIT), Bio Lab, Korea

2001 - 2006 *Member of Technical Staff,* On-chip sample preparation (2004-2005); Quantitative real-time micro PCR (2004-2006); Multifunctional lab-on-a-chip (2001-2004); A DNA-based lab-on-a-chip system using MEMS technology (2001-2006).
2004 - 2005 *Team Leader*, lead a small group (consisting of researchers from Electrical Engineering, Mechanical Engineering, Chemical Engineering, and Biology) for developing on-chip sample preparation technologies and microfluidics platforms.
2003 - 2004 *Knowledge Manager*, managed knowledge systematically and evaluated technical reports generated from researchers in the area of micro PCR, bio chip and BioMEMS.
2002 - 2005 *Six-Sigma Black Belt Consultant*, supported and trained Bio lab members as a part-time black belt consultant. Awarded one of the best practice projects at SAIT (2003) and Samsung Group (2004). Certified as a black belt consultant at Samsung Group (2004).
2001 - 2005 *Professional Research Agent*, Republic of Korea Army

University of Cincinnati, Cincinnati, Ohio

1996 - 2000 *Research Assistance,* A Generic Microfluidic System for Remote Sensors (MicroFlumes Program, DARPA, 1997-2000); Development of a Prototype Electrophoresis (CE) System on a Glass Chip Toward High Throughput Drug Synthesis (Procter & Gamble, Pharmaceutics, 1999-2000).
Winter 1999 *Teaching Assistance*, assisted students in a fabrication lab class (Silicon Semiconductor Fab Lab) for a silicon-based pressure sensor using a bulk micromachining technology.

RESEARCH GRANTS AND CONTRACTS

0. (**PENDING**) Co-PI (%effort: 33%), "Optimizing a ribozyme gene therapy for autosomal dominant retinitis pigmentosa", **R24 NIH National Eye Institute**, 12/2017-11/2022, $1.5 M, PI: Jack Sullivan (Pharmacology and Toxicology, UB & VA Medical Center)
1. (**NEW**) PI (%effort: 90%), "Creation and Implantation of a Test Target into a Test Phantom Finger for The Ultrasonic and Photoacoustic Characterization of a Biometric System," **NSF I/UCRC**: CITeR (Center for Identification Technology Research), 07/2017-06/2018, $50,000, Co-PI: Jun Xia (BME, UB)

2. PI (%effort: 100%), “Microfluidic 3D Capillary Network Test Phantom for Subdermal Vascular Imaging,” **NSF I/UCRC**: CITeR (Center for Identification Technology Research), 07/2016-06/2017, $40,000
3. PI (100%), “Investigation of a microfluidic test phantom for blood pressure simulation and monitoring,” **Qualcomm Research**, 04/2015-03/2017, $49,250
4. Co-PI (50%), “Therapeutic targeting of circulating tumor cells with self-replicating RNA lipid nanoparticles,” **Seed Funding Program - School of Pharmacy at SUNY-Buffalo**, 04/2015-12/2016, $10,000, PI: Juliane Nguyen (Department of Pharmaceutical Sciences)
5. Co-PI (%effort: 15%, 0.25-Summer-month), "Cell-cell adhesion and stem cell fate commitment," **NSF-CBET-1403086**, 06/2014-05/2017, $451,130, PI: Stelios T. Andreadis
6. Co-PI (0.5-month AY effort), "Development of an instrument for quantitative characterization of behavior of magnetic particles and magnetically-labeled biomaterials in emerging application," **NSF-CBET-1337860**, 09/2013-08/2017, $764,736 = $535,315+$229,421, PI: Mark Swihart, Co-PIs: Edward Furlani and Tymish Ohulchanskyy
7. PI (%effort: 100%), "Droplet-based microfluidic separation technology for high-throughput magnetic bead-based immunoassays," **NSF-ECCS-1002255**, Integrative, Hybrid & Complex Systems (IHCS) Program, 05/2010-04/2015, $300,000
8. Co-PI (%effort: 30%), "Development of STIM and DATS for protein and nanosystem," **NSF-DBI-0959989**, 02/2010-01/2013, $1,001,046, PI: Andrea Markelz, co-PIs: John Cerne and Edward Snell
9. PI (%effort: 100%), "Development of combinatorial microfluidic devices for stem cell applications," **Korea Institute of Science and Technology**, 04/2009-03/2010, $47K (including $14K Cost Share)
10. PI (0.75-month effort), "Design of a micropump using piezoelectric motors," **New Scale Technologies** (Victor, NY)/**NYSTAR** (New York State Office of Science, Technology and Academic Research) **CAT** (Center for Advanced Biomedical and Bioengineering Technology)/**TCIE** (The Center for Industrial Effectiveness), 07/2008-06/2009, $57K = $34K (from New Scale Tech) + $13K (from NYSTAR CAT) + $9.6K (from TCIE)
11. PI (%effort: 100%), "SGER: development of MEMS based microfluidic devices for biological target detection and sorting," **NSF-ECCS-0736501**, Electronics, Photonics and Device Technologies (EPDT) Program, 07/2007-12/2008, $69,710
12. PI (0.35-month effort), "Microvalve investigation and testing," **Minrad International Inc**. (Orchard Park, NY)/**TCIE** (The Center for Industrial Effectiveness), 03/2007-10/2007, $25K
13. Start-Up (3-month effort), **UB/NYSTAR**, 03/2006-08/2008, $225K

PUBLICATIONS: SUMMARY

	citation #	***h*-index**
Google Scholar (https://scholar.google.com/citations?user=JKReVGwAAAAJ)	**3167**	**26**

PUBLICATIONS: DISSERTATIONS

1. **Kwang W. Oh**, "Development of magnetically actuated microvalves and micropumps for surface mountable microfluidic systems," Doctoral Dissertation, University of Cincinnati, 2001
2. **Kwang W. Oh**, "Development of a photodiode and its flip-chip bonding technology for optical MEMS," Master Thesis, University of Cincinnati, 1997

PUBLICATIONS: SPECIAL ISSUES / BOOK CHAPTERS

1. **Kwang W. Oh**, "Special Issue: Biomedical Microfluidic Devices" in *Micromachines* (ISSN 2072-666X), 2017 (# of published paper in this special issue: 8 papers as of 06/2017)
2. **Kwang W. Oh**, "Special Issue: On-Chip Sensors" in *Sensors* (ISSN 1424-8220), 2014 (# of published paper in this special issue: 22 papers)

3. **Kwang W. Oh**, "Chapter 8: Lab-on-chip (LOC) devices and microfluidics" in *MEMS for Biomedical Applications*, Woodhead publishing, Woodhead Publishing, ISBN-13: 978-0-85709-129-1, 2012.
4. Dong S. Kim and **Kwang W. Oh**, "Chapter 10: Cyclic Olefin Copolymer (COC) Polymer Molding for LOC" in *Lab On A Chip Technologies*: Volume 1, pp. 139-159, ISBN: 978-1-904455-46-2, Caister Academic Press, Norfolk, UK, 2009
5. **Kwang W. Oh** and Chong H. Ahn, "2.02: Magnetic Actuation" in *Comprehensive Microsystems*: Volume 2, pp. 39-68, ISBN: 978-0-444-52194-1, Elsevier, Oxfordshire, UK, 2008

PUBLICATIONS: JOURNAL ARTICLES

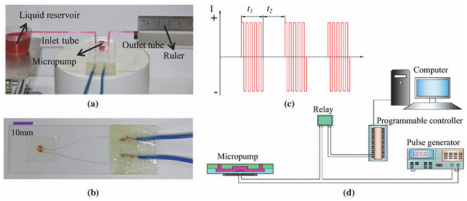
(Students' names are underlined)

Peer-Reviewed Journal Articles, Under Review/Under Revision (IF: Impact Factor)

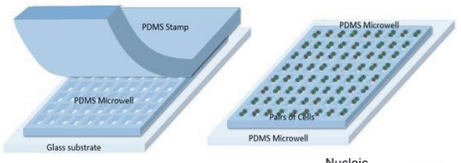
0. Phil Schneider, Liam Christie, Nicholas Eadie, Brett Bosinski, Domin Koh, Anyang Wang and **Kwang W. Oh**, "A Novel Approach to Low Cost, Rapid Prototyping of Microfluidic Devices using Wax," *Lab Chip*, to be submitted (2017)
0. Phil Schneider, Brett Bosinski, Liam Christie and **Kwang W. Oh**, "Microfluidic 3D Capillary Network Test Phantom for Subdermal Vascular Imaging," *Lab Chip*, to be submitted (2017)
1. Phil Schneider, Brett Bosinski, Evan Breloff, Domin Koh, Anyang Wang, and **Kwang W. Oh**, "Creation of Ultrasonically Equivalent Test Phantom Arm for Vascular Compliance Testing," *Sensors*, under review (2017) (IF: 2.287)
2. A. Wang, Y. Zhai, D. Koh, P. Schneider and **Kwang W. Oh**, "A hand-held microfluidic mixing under the vacuum-driven power-free pumping", *Microfluidics Nanofluidics*, under review (2017)
3. Domin Koh, Anyang Wang, Phil Schneider, Brett Bosinski and Kwang W. Oh*, "Introduction of a Simple Method to Create Strong Bonding Between Various Metals and Polydimethylsiloxane and Its Possible Applications," *Micromachines*, under review (2017)
4. Kangsun Lee, Choong Kim, Ji Yoon Kang and Kwang W. Oh, "Single-layered microfluidic network-based combinatorial dilution with a standard simplex-lattice design", *Lab Chip*, under review (2017)
5. Bendong Liu, Domin Koh, Anyang Wang, Phil Schneider and **Kwang W. Oh***, "The encapsulation of negative-pressure-driven PDMS microfluidic devices using paraffin wax," *Microfluidics Nanofluidics*, under revision (2017)

Peer-Reviewed Journal Articles, Published (IF: Impact Factor, GSC#: Google Scholar Citation Number)

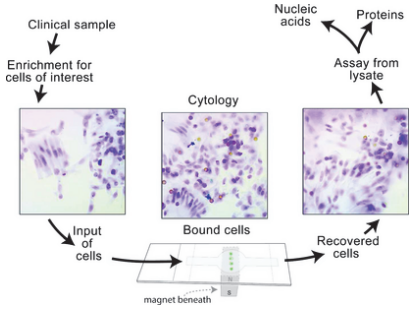
6. Bendong Liu, Jianchuang Sun, Desheng Li, Jiang Zhe and **Kwang W. Oh**, "A high flow rate thermal bubble-driven micropump with induction heating," *Microfluidics and Nanofluidics*, 20 (155), 2016 (IF: 2.537, GSC#:_)



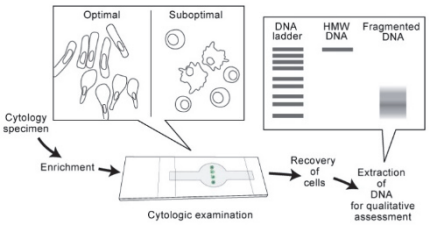
7. Hun Lee, Domin Koh, Linfeng Xu, Sindhu Row, Stelios T. Andreadis and **Kwang W. Oh***, "A simple method for fabrication of microstructures using PDMS stamp," *Micromachines*, 7 (10), 173, 2016 (IF: 1.269, GSC#:_)



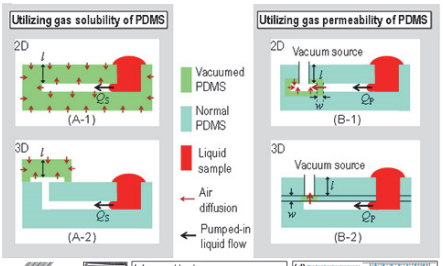
8. W. D. Mojica,*, **K. W. Oh**, H. Lee, E. P. Furlani, D. Sykes and A. M. Sands, "Microfluidics enables multiplex evaluation of the same cells for further studies," *Cytopathology*, 27, 277-283, 2016 (IF: 1.761, GSC#: 2)



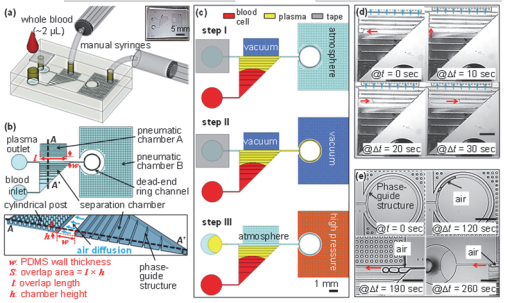
9. Wilfrido D. Mojica*, **Kwang W. Oh**, Hun Lee, Edward Furlani, and Amy M. Sands, "Maximizing derivable information from cytologic specimens for pathologic and molecular diagnostics," *Journal of the American Society of Cytopathology*, 4, 141-147, 2015 (GSC#: 2)



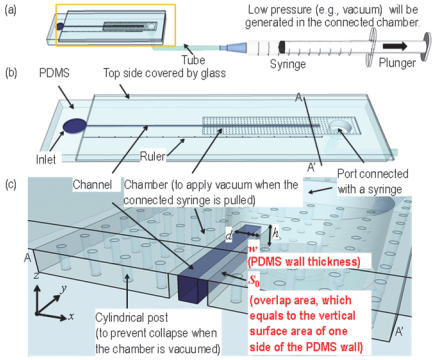
10. Linfeng Xu, Hun Lee, Deekshitha Jetta and **Kwang W. Oh***, "Vacuum-driven power-free microfluidics utilizing the gas solubility or permeability of polydimethylsiloxane (PDMS)", *Lab Chip*, 15, 3962-3979, 2015 (IF: 5.586, GSC#: 13)



11. Linfeng Xu, Hun Lee, Mariana Vanderlei Brasil Pinheiro, Phil Schneider and **Kwang W. Oh***, "Phaseguide-assisted blood separation microfluidic device for point-of-care (POC) applications," *Biomicrofluidics* 9, 014106 (12 pages), 2015 (IF: 3.357, GSC#: 9)

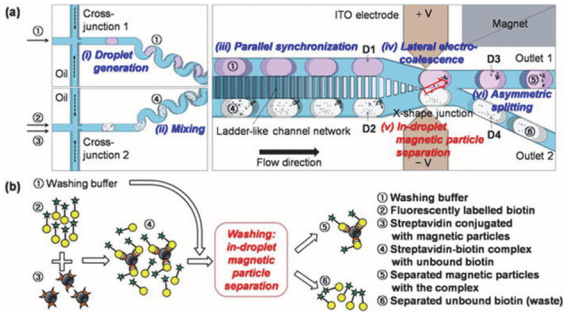


12. Linfeng Xu, Hun Lee, **Kwang W. Oh***, "Syringe-assisted point-of-care micropumping utilizing the gas permeability of polydimethylsiloxane," *Microfluidics and Nanofluidics*, 17, 745-750, 2014 (IF: 2.537, GSC#: 7)



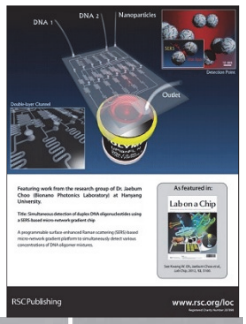
13. Hun Lee, Linfeng Xu, Domin Koh, Nikhila Nyayapathi and **Kwang W. Oh***, "Various on-chip sensors with microfluidics for biological applications," *Sensors*, 14, 17008-17036, 2014 (**invited paper**) (IF: 2.537, GSC#: 19)

14. Hun Lee, Linfeng Xu, and **Kwang W. Oh***, "Droplet-based microfluidic washing module for magnetic particle-based assays," *Biomicrofluidics*, 8, 044113 (10 pages), 2014 (IF: 3.357, GSC#: 10)



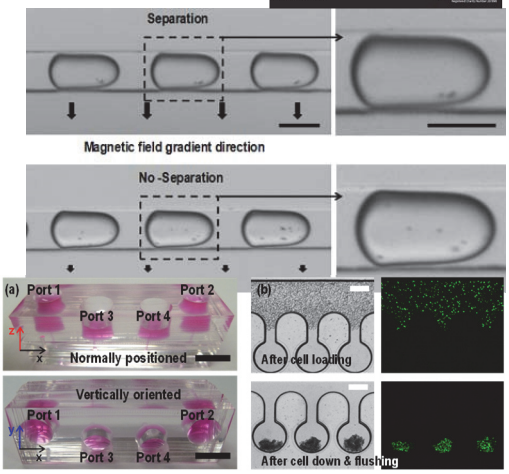
15. Krishna Prasad Bhat, **Kwang W. Oh**, and Douglas C. Hopkins*, "Feasibility of a MEMS sensor for gas detection in HV oil-insulated transformer," *IEEE Transactions on Industry Applications*, 49, 316 - 321, 2013 (IF: 2.537, GSC#: 2)

16. Namhyun Choi, Kang Sun Lee, Dong Woo Lim, Eun Kyu Lee, Soo-Ik Chang, **Kwang W. Oh*** and Jaebum Choo*, "Simultaneous detection of duplex DNA oligonucleotides using a SERS-based micro-network gradient chip," *Lab Chip*, 12, 5160-5167, 2013; ***featured on the cover of Lab Chip journal*** (IF: 6.115, GSC#: 23)



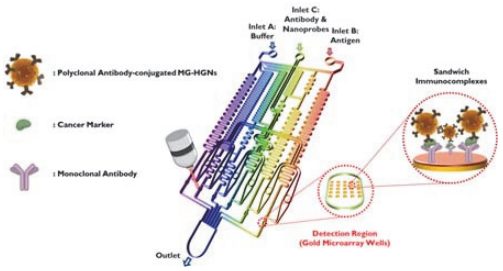
17. Hun Lee, Linfeng Xu, Byungwook Ahn, Kangsun Lee, and **Kwang W. Oh***, "Continuous-flow in-droplet magnetic particle separation in a droplet-based microfluidic platform," Special Issue: Magnetic-Based Microfluidics in *Microfluidics and Nanofluidics*, 13, 613-623, 2012 (**invited paper**) (IF: 2.537, GSC#: 24)

18. Kangsun Lee, Choong Kim, Jae Young Yang, Hun Lee, Byungwook Ahn, Linfeng Xu, Ji Yoon Kang, and **Kwang W. Oh***, "Gravity-oriented microfluidic device for cell spheroid formation," *Biomicrofluidics*, 6, 014114 (7 pages), 2012 (IF: 3.357, GSC#: 20)

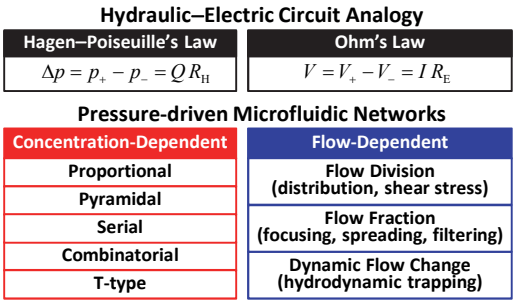


19. Linfeng Xu, Hun Lee, Rajagopal Panchapakesan and **Kwang W. Oh***, "Fusion and sorting of two parallel-trains of droplets by using a railroad-like channel network and guiding tracks," Special Issue on Emerging Investigators 2012, *Lab Chip*, 12, 3936-3942, 2012 (**invited paper**); ***featured on the cover of Lab Chip journal*** (IF: 6.115, GSC#: 20)

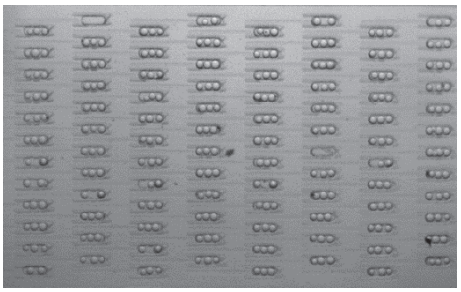
20. Moonkwon Lee, Kangsun Lee, **Kwang W. Oh***, Jaebum Choo*, "SERS based immunoassay using a gold-array embedded gradient chip," Special Issue on Optofluidics, *Lab Chip*, 12, 3720-3227, 2012 (**invited paper**) (IF: 6.115, GSC#: 58)



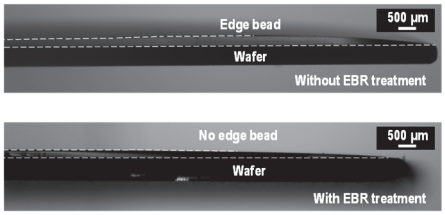
21. **Kwang W. Oh***, Kangsun Lee, Byungwook Ahn, Edward P. Furlani, "Design of pressure-driven microfluidic networks using electric circuit analogy," *Lab Chip*, 12, 515-545, 2012; ***listed as one of top ten most accessed articles*** (http://blogs.rsc.org/lc/2012/03/06/top-ten-most-accessed-articles-in-january/) (IF: 6.115, GSC#: 198)



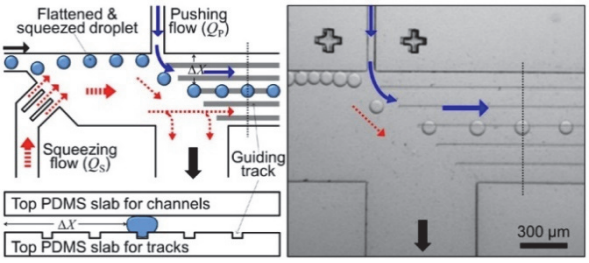
22. Jing Xu, Byungwook Ahn, Kangsun Lee, Hun Lee, Rajagopal Panchapakesan, Linfeng Xu, and **Kwang W. Oh***, "Droplet-based microfluidic device for multiple-droplet clustering," *Lab Chip*, 12, 725-730, 2012; ***highlighted on the LOC blog*** ("Hot articles on bubble removal, microfluidic wound-healing assays, multiplexed screening and more") at http://blogs.rsc.org/lc/ (IF: 6.115, GSC#: 19)



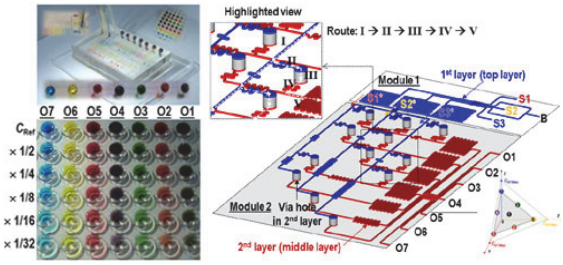
23. Hun Lee, Kangsun Lee, Byungwook Ahn, and **Kwang W. Oh***, "A new fabrication process for SU-8 thick photoresist structures by simultaneously removing edge-bead and air bubbles," *Journal of Micromechanics and Microengineering*, 21, paper 125006, 2011 (IF: 1.731, GSC#: 17)



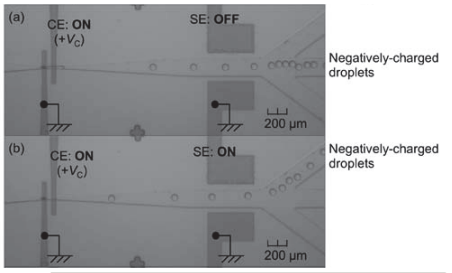
24. Byungwook Ahn, Kangsun Lee, Hun Lee, Rajagopal Panchapakesan, Linfeng Xu, Jing Xu, and **Kwang W. Oh***, "Guiding, distribution, and storage of trains of shape-dependent droplets," *Lab chip*, 11, 3915-3918, 2011 (IF: 6.115, GSC#: 13)



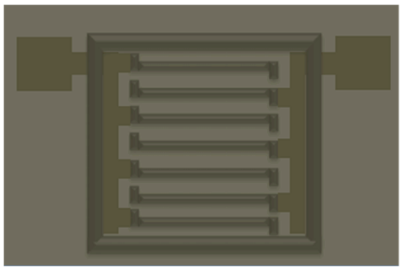
25. Kangsun Lee, C. Kim, Y. Kim, Byungwook Ahn, Rajagopal Panchapakesan, J. Bang, Jungkwun Kim, Y. K. Yoon, J. Y. Kang, and **Kwang W. Oh***, "Microfluidic concentration-on-demand combinatorial dilutions," *Microfluidics and Nanofluidics*, 11, 75-86, 2011 (IF: 2.537, GSC#: 14)



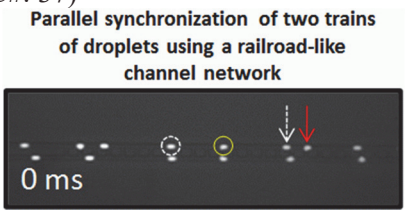
26. Byungwook Ahn, Kangsun Lee, Rajagopal Panchapakesan, Preethi Gopalan, and **Kwang W. Oh***, "On-demand electrostatic droplet charging and sorting," *Biomicrofluidics*, 5, paper 024113, 2011 (IF: 3.357, GSC#: 39)



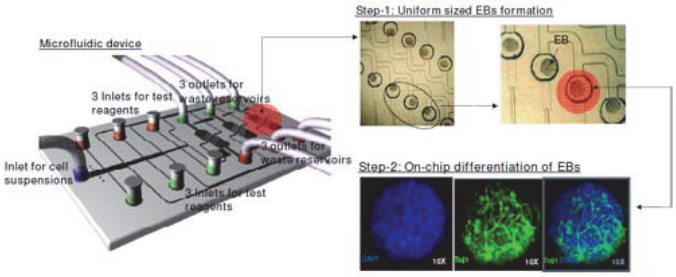
27. Deepu K. George, Rohit Singh, Chejin Bae, Byungwook Ahn, **Kwang Oh**, Andrea Markelz, "Dynamical Alignment of Solution Phase Proteins for Structural Measurements," *Biophysical Journal*, 2011; DOI: 10.1016/j.bpj.2010.12.1434



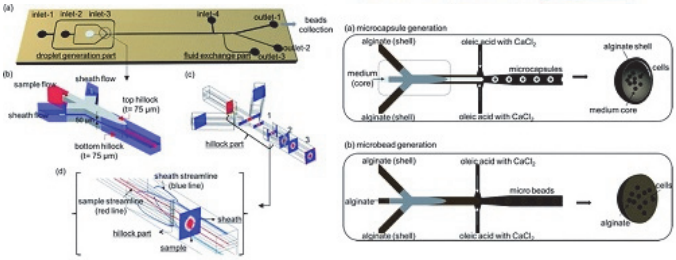
28. Byungwook Ahn, Kangsun Lee, Hun Lee, Rajagopal Panchapakesan, and **Kwang W. Oh***, "Parallel synchronization of two trains of droplets using a railroad-like channel network," *Lab Chip*, 11, 3956-3962, 2011; ***featured on a cover page of Lab Chip*** issue of 11 (23), 2011 (IF: 6.115, GSC#: 37)



29. Choong Kim, Kangsun Lee, Jae Hoon Bang, Young Eyn Kim, Min-Cheol Kim, **Kwang W. Oh**, Soo Hyun Lee and Ji Yoon Kang, "3-Dimensional cell culture for on-chip differentiation of stem cells in embryoid body," *Lab Chip*, 11, 874-882, 2011 (IF: 6.115, GSC#: 53)



30. Choong Kim, Seok Chung, Young Eun Kim, Kangsun Lee, Soo Hyun Lee, **Kwang W. Oh**, and Ji Yoon Kang, "Generation of core-shell microcapsules with three-dimensional focusing device for efficient formation of cell spheroid," *Lab Chip*, 11, 246-252, 2011 (IF: 6.115, GSC#: 80)



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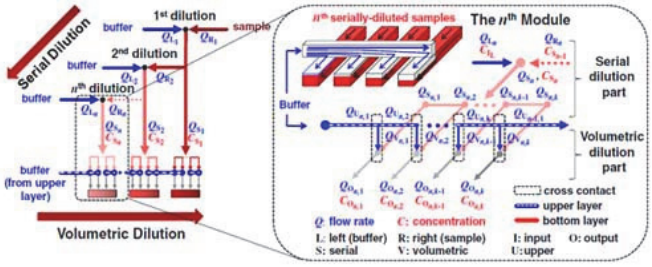

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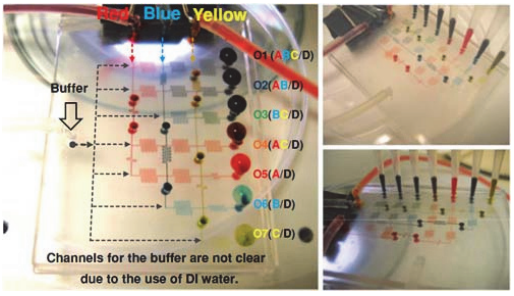

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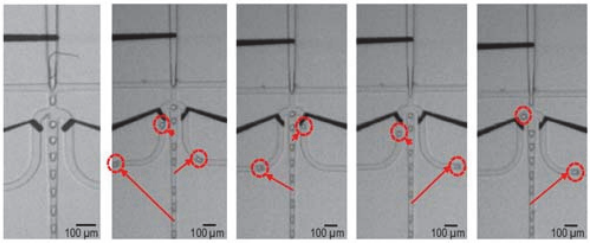

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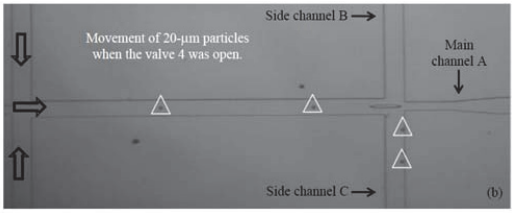

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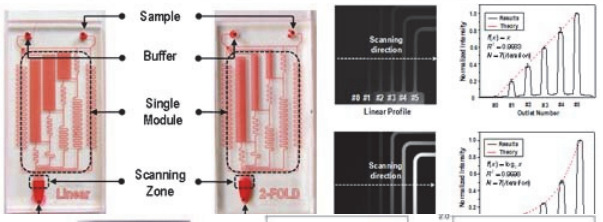

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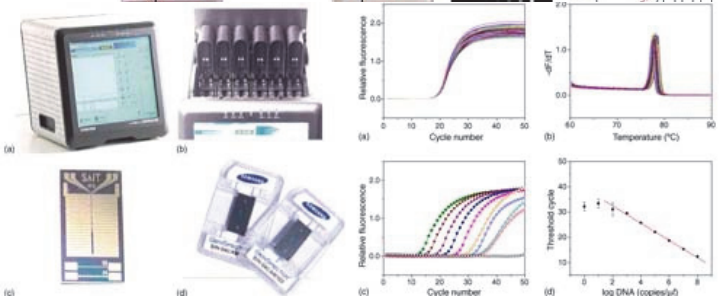

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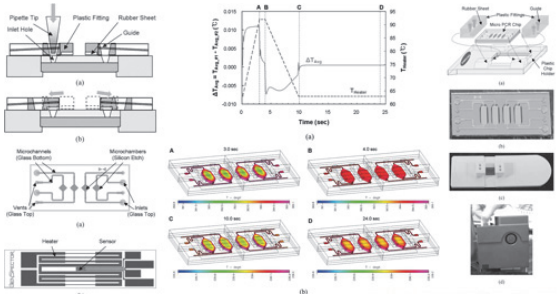

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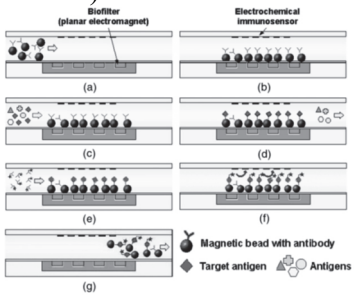

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56. A. Han, **K. W. Oh**, S. Bhansali, H. T. Henderson, and C. H. Ahn, "A low temperature biochemically compatible bonding technique using fluoropolymers for biochemical microfluidic systems," *Proc. in IEEE MEMS 2000*, Miyazaki, Japan, pp. 414-418 (with a poster presentation) (GSC#: 50)
57. N. Okulan, S. Bhansali, A. Han, S. Dharmatilleke, J.-W. Choi, M. Patel, **K. W. Oh**, H. T. Henderson, and C. H. Ahn, "Development of planar microfluidic systems using conventional and low temperature assembling schemes for components," *Proc. in ASME The International Mechanical Engineering Conference and Exposition (IMECE)*, Winter Annual Meeting of ASME, Nashville, TN (1999) (with a poster presentation) (GSC#: 6)
58. S. Bhansali, A. Han, M. Patel, **K. W. Oh**, C. H. Ahn and H. T. Henderson, "Resolving chemical/bio-compatibility issues in microfluidic MEMS systems," *Proc. in SPIE Conference on Microfluidic Devices and Systems II*, Vol. 3877, Santa Clara, California, pp. 101-109 (1999) (with an oral presentation) (GSC#: 9)
59. D. J. Sadler, **K. W. Oh**, C. H. Ahn, S. Bhansali, and H. T. Henderson, "A new magnetically actuated

microvalve for liquid and gas control applications," *Proc. in Transducers 1999*, Sendai, Japan, pp. 1812-1815 (with a poster presentation) (GSC#: 51)

60. **K. W. Oh** and C. H. Ahn, "Flip-chip packaging with micromachined conductive polymer bumps," *Proc. in Adhesives in Electronics 1998*, Binghamton, NY, pp. 224-228 (with an oral presentation) (GSC#: 4)
61. **K. W. Oh**, C. H. Ahn, and K. P. Roenker, "Optical characteristics of GaAs MSM photodiodes flip-chip bonded upon micromirrors using micromachined conductive polymer bumps," *Proc. in SPIE 1998 Symposium on Microelectronic Structures and MEMS for Optical Process IV*, Vol. 3513, Santa Clara, CA, pp. 50-58 (with an oral presentation) (GSC#: 1)
62. K. Kramer, **K. W. Oh**, C. H. Ahn, J. J. Bao, and K. R. Wehmeyer, "Optical MEMS-based fluorescence detection scheme with applications to capillary electrophoresis," *Proc. in SPIE 1998 Symposium on Micromachining and Microfabrication*, Vol. 3515, doi:10.1117/12.322098, Santa Clara, CA (with an oral presentation) (GSC#: 14)
63. **K. W. Oh**, and C. H. Ahn, "Development of an innovative flip-chip bonding technique using micromachined conductive polymer bumps," *Proc. in IEEE Solid-State Sensor and Actuator Workshop 1998*, Hilton Head, SC, pp. 170-173 (with an oral presentation) (GSC#: 19)
64. C. H. Ahn, **K. W. Oh** and K. P. Roenker, "Micromachined optical I/O couplers for optoelectronic multichip modules (OE-MCMs)," *Proc. in Electronic and Photonic Packaging 1997*, vol. EEP-19-1, pp. 447-453 (with an oral presentation) (GSC#: 6)
65. S. Koh, **K. W. Oh**, K. P. Roenker, C. H. Ahn, "Design and fabrication of optoelectronic multichip module prototypes using MEMS fabrication techniques," *Proc. in SPIE Optoelectronics 1997*, Vol. 3008-05 (with an oral presentation) (GSC#: 4)

Peer-Reviewed Conference Papers (Presentation Only w/o Proceedings)

66. **Kwang W. Oh**, "Creation and implantation of a test target into a test phantom finger for the ultrasonic and photoacoustic characterization of a biometric system," NSF I/UCRC: CITeR (Center for Identification Technology Research), Spring Program Review 2017, Saratoga Springs, NY, May 17-18, 2017 (oral presentation)
67. **Kwang W. Oh**, "Microfluidic 3D capillary network test phantom for subdermal vascular imaging," NSF I/UCRC: CITeR (Center for Identification Technology Research), Spring Program Review 2016, Niagara Falls, NY, May 31-June 2, 2016 (oral presentation)
68. **Kwang W. Oh**, "Droplet-based microfluidics," Micro & Nano Fluidics, TechConnect World 2012 (NanoTech/MicroTech/BioTech/CleanTech 2012), Santa Clara, California, June 18-21, 2012 (invited talk)
69. Linfeng Xu, Rajagopal Panchapakesan, Kangsun Lee, Byungwook Ahn, Hun Lee, Jing Xu, and **Kwang W. Oh**, "Structure-enhanced self-powered microfluidic pumps and stickers," Micro & Nano Fluidics, TechConnect World 2012 (NanoTech/MicroTech/BioTech/CleanTech 2012), June 18-21, 2012, Santa Clara, California (oral presentation).
70. Deepu George, Rohit Singh, Chejin Bae, Byungwook Ahn, **Kwang W. Oh**, and A. G. Markelz, "THz measurements of molecular solution phase dynamical alignment," International Workshop on OTST (Optical Terahertz Science and Technology) 2011, March 13 , 2011, Santa Barbara, CA, USA
71. Rajagopal Panchapakesan and **Kwang W. Oh**, "Smart autonomous energy harvesting from live plants," Nanotechnology in biology and Medicine, the 2nd Integrated Nanostructured Systems (INS) Workshop, May 13, 2009, UB, NY, USA (poster)
72. Kangsun Lee, Choong Kim, Byungwook Ahn, Yongeun Kim, Ji Yoon Kang, and **Kwang W. Oh**, "Microfluidic network based micro-reactor platforms for biological assay," Nanotechnology in biology and Medicine, the 2nd Integrated Nanostructured Systems (INS) Workshop, May 13, 2009, UB, NY, USA (poster)
73. Byungwook Ahn, Rajagopal Panchapakesan, Kangsun Lee, **Kwang W. Oh**, "Two phase droplet; generation, sorting and droplet charge with E-field," Nanotechnology in biology and Medicine, the 2nd Integrated Nanostructured Systems (INS) Workshop, May 13, 2009, UB, NY, USA (poster)
74. Rajagopal Panchapakesan and Kwang W. Oh, "Label-free real-time micro PCR using surface acoustic wave," Multifunctional Nanomaterials and Nanodevices, the 1st annual Integrated Nanostructured Systems (INS) Workshop, May 18 – 19, 2007, UB, NY, USA (poster)
75. Byungwook Ahn and Kwang W. Oh, "A novel braille device using meltable magnetic nanoparticles," Multifunctional Nanomaterials and Nanodevices, the 1st annual Integrated Nanostructured Systems (INS) Workshop, May 18 – 19, 2007, UB, NY, USA (poster)

76. D. J. Sadler, **K. W. Oh**, C. H. Ahn, S. Bhansali, and H. T. Henderson, "A new magnetically actuated microvalve for gas and liquid control applications," Symposium on Nano-, Micro-, and Mesoscale Technologies in Science and Engineering, May 13, 1999, University of Cincinnati, Cincinnati, OH, USA (poster)
77. **K. W. Oh**, C. H. Ahn, and K. P. Roenker, "Optical characteristics of GaAs MSM photodiodes flip-chip bonded upon micromirrors using micromachined conductive polymer bumps," Symposium on Nano-, Micro-, and Mesoscale Technologies in Science and Engineering, May 13, 1999, University of Cincinnati, Cincinnati, OH, USA (poster)
78. **K. W. Oh** and C. H. Ahn, "Flip-chip packaging with micromachined conductive polymer bumps," Symposium on Nano-, Micro-, and Mesoscale Technologies in Science and Engineering, May 13, 1999, University of Cincinnati, Cincinnati, OH, USA (poster)
79. C. H. Ahn, H. T. Henderson, W. R. Heineman, H. B. Halsall, J. H. Nevin, A. J. Helmicki, S. Bhansali, K. T. Schlueter, J.-W. Choi, **K. W. Oh**, A. Han, N. Okulan, M. Patel, S. Dharmatilleke, C. Lannes, A. Wijayawardhana , S. Purushothama, "A generic microfluidic system for remote sensors," Symposium on Nano-, Micro-, and Mesoscale Technologies in Science and Engineering, May 13, 1999, University of Cincinnati, Cincinnati, OH, USA (poster)

INVITED TALKS

Invited Talks (Off Campus)

1. Byungwook Ahn, Hun Lee, Linfeng Xu, Jing Xu, Kangsun Lee, Rajagopal Panchapakesan, Preethi Goplan, and **Kwang W. Oh**, "Continuous-Flow Passive/Active Manipulation of Droplet Trains and Its Application for In-Droplet Magnetic Particle Separation," Lab on a Chip International Symposium: Droplet-based Microfluidics, November 12–13, 2016, Hangzhou, China (Invited Talk)
2. Linfeng Xu and **Kwang W. Oh**, "On-chip blood plasma separation using vacuum-assisted micropumping for point-of-care application," BioSensor, NanoTechnology, BioMEMS in 2015 World Congress on Medical Physics & Biomedical Engineering, Toronto, Canada, June 7-12, 2015 (Invited Talk)
3. **Kwang W. Oh**, "Biomedical microfluidic devices: promising tools for lab-on-chip (LOC)/point-of-care (POC) and high-throughput/cell study applications," Bioengineering Department, University of Texas at Dallas, March 2, 2015
4. Hun Lee, Linfeng Xu, and **Kwang W. Oh**, "A journey of trains of droplets in droplet-based microfluidic devices," Proceedings of The 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC 2014), August 26 – 30, 2014, Chicago, Illinois, pp. 778-781, 2014 (Invited Talk)
5. Biomedical IT Convergence Center, Gumi, Korea, June 25, 2014
6. Chonbuk National University, Korea, June 24, 2014
7. Advanced Institutes of Convergence Technology, Seoul National University, Korea, June 19, 2014
8. Sungkyunkwan University, Korea, June 12, 2014
9. Korea Advanced Institute of Science and Technology, Korea, June 11, 2014
10. Pohang University of Science and Technology, Korea, June 5, 2014
11. Hanyang University, Korea, June 2, 2014
12. Kyunghee University, Korea, May 29, 2014
13. UNIST, Korea, May 28, 2014
14. Mechanical Engineering, Chonbuk National University, Korea, May 22, 2014
15. Department of Biomedical Engineering, Chung-Ang University, Korea, May 21, 2014
16. New Business Division (Healthcare), SK Telecom, Korea, May 19, 2014
17. Department of Electrical Engineering, Kwangwoon University, Korea, May 13, 2014
18. Center for BioMicrosystems, Korea Institute of Science and Technology (KIST), Korea, May 13, 2014
19. "Active and passive manipulation of microdroplets in droplet-based microfluidics platform," University of Toronto, Canada, September 27, 2012
20. "Droplet-based microfluidics," Micro & Nano Fluidics, TechConnect World 2012 (NanoTech/MicroTech/BioTech/CleanTech 2012), Santa Clara, California, June 18-21, 2012 (Invited Talk)

21. "Microvalves for drug delivery," Johnson & Johnson Vision Care, Jacksonville, FL, August 06, 2010
22. "Microfluidic circuits, devices, and applications," Gwangju Institute of Science and Technology (GIST), Korea, November 16, 2009
23. "Microfluidic systems and droplet-based microfluidics," Physics Department, Chonbuk National University, Korea, November 5, 2009
24. "BioMEMS and droplet-based microfluidics," Department of Electrical Engineering, UB, September 25, 2009
25. "Droplet-based microfluidics and BioMEMS," Department of Mechanical Engineering, University of Akron, OH, November 21, 2008
26. "Miniaturization of polymerase chain reaction (PCR) devices and systems," Siloam Biosciences, BioSTART incubator complex on the University of Cincinnati Medical Campus, Cincinnati, OH, October 24, 2008
27. "Advanced BioMEMS and microfluidics research at SMALL@SUNY–Buffalo," Department of Electrical Engineering, Kwangwoon University, Korea, August 12, 2008
28. "Small technology: the tools to answer biological questions," Dean's Council Meeting, School of Engineering and Applied Sciences, UB, April 27 & 28, 2006
29. "BioMEMS & microfluidics: the tools to answer biological questions," Department of Electrical Engineering, University of South Florida, Tampa, FL, April 13, 2006
30. "BioMEMS & microfluidics," Department of Mechanical Engineering, Pohang Science and Technology University (POST), Pohang, Korea, February 17, 2006
31. "World-to-chip microfluidic interfacing for PCR assay chips," Symposium for Microfluidics in Biotech Industry Applications, The Korean Society for Biotechnology and Bioengineering, Jinju City Hall, Korea, October 27-29, 2005
32. "Biochips & microfluidics," Center for Applied NanoBioscience, Biodesign Institute, Arizona State University, Pheonix, AZ, January 28, 2005
33. "Microfluidics," Biochip T/F at Samsung Electronics, Giheung, Korea, July 21, 2004.
34. "Biochips: lab-on-a-chip," Pediatric Department, Samsung Medical Center, Seoul, Korea, December 28, 2001
35. "Lab-on-a-chip using MEMS (BioMEMS)," The Korean Intellectual Property Office, Seoul, Korea, December 7, 2001
36. "Lab-on-a-chip using MEMS," the 33rd International Symposium for 10-year-anniversary of Korean Society of Life Science, Busan, Korea, September 14, 2001
37. "BioMEMS and MOEMS," SAIT, Samsung Electronics, Suwon, Korea, October, 2000
38. "MEMS for BioMEMS and MOEMS," LG Corporate Institute of Technology, LG Electronics, Seoul, Korea, October, 2000

Invited Talks (On Campus)

39. "Microfabrication Technologies and Applications in Cell Culture and Tissue Engineering," CE 564 Tissue Engineering, UB, October 25, 2016
40. "Microfabrication Technologies and Applications in Cell Culture and Tissue Engineering," CE 564 Tissue Engineering, UB, October 20, 2015
41. "Microfabrication Technologies and Applications in Cell Culture and Tissue Engineering," CE 564 Tissue Engineering, UB, October 7, 2014
42. "Microfabrication Technologies and Applications in Cell Culture and Tissue Engineering," CE 564 Tissue Engineering, UB, September 26, 2013
43. "Microfabrication Technologies and Applications in Cell Culture and Tissue Engineering," CE 564 Tissue Engineering, UB, October 2, 2012
44. "SMALL (Sensors and MicroActuators Learning Lab): What we do is micro plumbing," INS Winter Workshop, UB, January 12, 2012
45. "Biosensors for lab-on-a-chip (LOC) and point-of-care-test (POCT)," DMS604 Large-scale Sensing Systems, Department of Media Study, UB, September 19, 2011
46. "Microfabrication Technologies and applications in Cell Culture and Tissue Engineering," CE 564 Tissue Engineering, Department Chemical/Biological Engineering, UB, March 8, 2011
47. "INR seminar series: SMALL (Sensors and MicroActuators Learning Lab)," Internships in Nanomaterials Research Summer Seminar, UB, July 20, 2010

48. "Sample delivery: microfluidics," IDEX Day on campus, SEAS, UB, January 21, 2010
49. "INR seminar series: SMALL (Sensors and MicroActuators Learning Lab)," Internships in Nanomaterials Research Summer Seminar, UB, July 28, 2009
50. "SMALL for big things," UB Nanoscale Science and Technology Club (UB Nano Club), UB, November 11, 2008
51. "INR seminar series: SMALL (Sensors and MicroActuators Learning Lab)," Internships in Nanomaterials Research Summer Seminar, UB, July 29, 2008
52. "BioMEMS based microfluidic cell sorting system - enjoy a happy marriage between biomedical problems and engineering tools to find creative multidisciplinary solutions," Integrated Nanostructed Systems (INS) Nano/Biotechnology Workshop, UB, June 11, 2007
53. "Small (hybrid nano & micro) technology: BioMEMS, microfluidics, nanobiosensors, microactuators - the tools to answer biological questions," The New York State Center of Excellence in Bioinformatics & Life Sciences (CoE), UB, December 18, 2006
54. "Small technology: the tools to answer biological questions," Dean's Council Meeting, School of Engineering and Applied Sciences, UB, April 27 – 28, 2006
55. "The tools to answer biological questions: BioMEMS, microfluidics, and nanobiotech," Administrative Council meeting, Department of Electrical Engineering, UB, March 21, 2006

PATENTS

1. Linfeng Xu and **Kwang W. Oh**, "A blood separation microfluidic device for point-of-care (POC) applications," US R-6891 (filed: 05/01/2014)
2. Linfeng Xu and **Kwang W Oh**, "Syringe assisted microfluidic pumping for point-of-care applications," US R-6694 (filed: 11/18/2011)
3. **K. W. Oh**, K. Namkoong, C.S. Park, "Microvalve having magnetic wax plug and flux control method using magnetic wax," US 8,167,265 (05/01/2012)
4. K. S. Ock, **K. W. Oh**, S. H. Kim, and J. T. Kim, "Multi-channel fluorescence measuring optical system and multi-channel fluorescence sample analyzer," US 7,928,408 (04/19/2011) (GSC#: 4)
5. **K. W. Oh**, and Yoojin Seo, "Semiautomatic operating device for microchip," US 7,892,490 (02/22/2011)
6. **K. W. Oh**, J. S. Park, and K. Namkoong "Microvalve having magnetic wax plug and flux control method using magnetic wax," US 7,874,305 (01/25/2011)
7. **K. W. Oh**, J. T. Kim, Y. K. Cho, K. Namkoong, C. S. Park, and Y. -K. Cho, "Polymerase chain reaction (PCR) module and multiple PCR system using the same," US 7,799,557 (09/21/2010) (GSC#: 4)
8. **K. W. Oh**, J. T. Kim, K. Namkoong, and C. S. Park, "Real-time PCR monitoring apparatus and method," US 7,767,439 (08/03/2010) (GSC#: 8)
9. J. T. Kim, **K. W. Oh**, Y. J. Seo, C. S. Park, and K. Namkoong, "Polymerase chain reaction module and multiple-polymerase chain reaction system including the module," US 7,754,452 (07/13/2010) (GSC#: 1)
10. C. S. Park, J. H. Kim, K. Namkoong, and **K. W. Oh**, "Fluid mixing device using cross channels," US 7,736,050 (06/15/2010)
11. K. Namkoong, Y. S. Lee, **K. W. Oh**, C. H. Ko, and J. I. Han, "Handheld centrifuge," US 7,645,223 (01/12/2010)
12. Y. S. Lee, J. I. Han, H. Y. Lee, **K. W. Oh**, and K. Namkoong, "Isolation and purification method of biomolecules using hydrogel," US 7,579,151 (08/25/2009) (GSC#: 4)
13. J. I. Han, Y. S. Lee, **K. W. Oh**, and K. Namkoong, "Cell lysis using free radicals," US 7,517,690 (04/14/2009)
14. **K. W. Oh**, J. S. Park, and K. Namkoong, "Microvalve having magnetic wax plug and flux control method using magnetic wax," US 7,478,792 (01/20/2009) (GSC#: 12)
15. **K. W. Oh**, and K. Namkoong, "Valve," US 7,424,995 (09/16/2008)
16. **K. W. Oh** and Yoojin Seo, "Microchip assembly," US 7,413,707 (08/19/2008) (GSC#: 1)
17. J. I. Han and **K. W. Oh**, "Micro PCR device, method for amplifying nucleic acids using the micro PCR device, and method for measuring concentration of PCR products using the micro PCR device," US 7,371,530 (05/13/2008)
18. **K. W. Oh**, Y. S. Lee, Y. K. Cho, and G. B. Lim, "Apparatus for circulating carrier fluid," US 7,329,535

(02/12/2008) (GSC#: 2)

19. G. Ok, J. T. Kim, **K. W. Oh**, and S. Kim, "Optical detection apparatus for multi-channel multi-color measurement and multi-channel sample analyzer employing the same," US 7,274,455 (09/25/2007) (GSC#: 52)
20. G. Ok, **K. W. Oh**, and J. T. Kim, "Optical system for analyzing multi-channel samples and multi-channel sample analyzer employing the same," US 7,209,237 (04/24/2007) (GSC#: 1)
21. Y. K. Cho, S. H. Kim, **K. W. Oh**, D. S. Yoon, and G. B. Lim, "Method and sensor for detecting the binding of biomolecules by shear stress measurement," US 7,112,452 (09/26/2006) (GSC#: 6)

MENTORSHIP

Students' names are underlined

Visiting Scholar/Post-Doc/Visiting Student

2015 Bendong Liu, PhD (Mechanical Engineering, Beijing University of Technology, China, 2008)
Current position: Associated Professor, College of Mechanical Engineering and Applied Electronics Technology, Beijing University of Technology, Beijing, China. (2008-current)

Spring 2013 Christopher Steven (PhD, international visiting student from Prof. Duncan Graham's lab, Pure and Applied Chemistry University of Strathclyde, Glasgow, UK)

Doctoral (PhD) Students, in Progress

Fall 2016- Zhonghang Zhang, MS (EE, UB, 2016), BS (EE, 2014)
Expected graduation date: Spring 2020

Fall 2016- Phil Schneider, MS (EE, UB, 2016), BS (EE, UB, 2014)
Expected graduation date: Spring 2018

Spring 2015- Evan Breloff, BS (EE, UB, 2013)
Expected graduation date: Spring 2019

Fall 2013- Anyang Wang, MS (EE, Tohoku University, 2014), BS (EE, Tohoku University, 2012)
Expected graduation date: Spring 2018

Fall 2013- Nikhila Nyayapathi, BS (Electronics and Instrumentation Eng., Birla Institute of Technology & Science-Pilani, India, 2011)
Expected graduation date: Spring 2018

Sum. 2013- Domin Koh, BS (EE, UB, 2013)
Expected graduation date: Fall 2018

Doctoral (PhD) Students, Graduated

Fall 10 - 2015 Hun Lee, PhD (EE, UB, 2015); MS (EE, Dankook University, Korea, 2009), BS (Electronic and Computer Eng., Dankook University, Korea, 2007)
PhD thesis title: *Droplet-based microfluidic platform for immunoassay applications using magnetic particles* (Defense Date: 03/10/2015)
Committee member: Prof. Edward P. Furlani, Prof. Qiaoqiang Gan, Prof. Wayne Anderson
Current position: SK Hynix, Korea

Sum 11 - 2014 Linfeng Xu, PhD (EE, UB, 2014), MS (EE, UB, 2011), BS (Informatics and Control Eng., Shanghai University of Electric Power, China, 2009)
PhD thesis title: *Study of point-of-care microfluidics pumping and blood sample preparation* (Defense Date: 12/22/2014)
Committee member: Prof. Edward P. Furlani, Prof. Qiaoqiang Gan, Prof. Wayne Anderson
Current position: Intuitive Biosciences, Madison, Wisconsin

Spr. 07 - 2012 Rajagopal Panchapakesan, PhD (EE, UB, 2012), MS (Mechanical Eng., UB, 2007), BS (Mechanical Eng., Anna University, India, 2005)
PhD thesis title: *Droplet feedback mechanisms on a digital microfluidic platform and development of hyperbilirubinemia panel* (Defense Date: 01/09/2013)
Committee member: Prof. Edward P. Furlani, Prof. Qiaoqiang Gan
Current position: Illumina, San Diego, CA

Spr. 08 - 2011 Kangsun Lee, PhD (EE, UB, 2011), MS (EE, Dankook University and KIST, Korea, 2006), BS (EE, Dankook University, Korea, 2004)
PhD thesis title: *Pressure-driven microfluidic networks using electric circuit analogy for on-chip cell assay applications* (Defense Date: 08/17/2011)
Committee member: Prof. Alexander N. Cartwright, Prof. Edward P. Furlani
Current position: LG Electronics Advanced Institute of Technology, Korea

Fall 06 - 2011 Byungwook Ahn, PhD (EE, UB, 2011), BS (EE, Aju University, Korea, 2005)
PhD thesis title: *Dynamic control of water-in-oil droplets in a continuous flow by active and passive methods* (Defense Date: 08/15/2011)
Committee member: Prof. Esther S. Takeuchi, Prof. Edward P. Furlani
Current position: LG Electronics; Former position: Post-doc at Emory University School of Medicine and Georgia Institute of Technology (advisor: Wilbur A. Lam, MD, PhD)

M.S. Students, in Progress

Spring 16 - Yaguang Zhai, BS (Physics, Jilin University, China, 2014)
Expected graduation date: Spring 2017

Spring 16 - Rittick Banerjee, BS (EE, 2014)
Expected graduation date: Spring 2017

MS Students with Thesis, Graduated

Spr. 15 - 2016 Emily Oakley, MS (EE, UB, 2016), BS (BME, The George Washington University, 2013)
MS thesis title: *Surface markers for image-guided interstitial photodynamic therapy* (Defense Date: 05/05/2016)
Committee member: Prof. Edward P. Furlani, Prof. Gal Shafirstein, D.Sc. (supervisor, Photodynamic Therapy Center, Roswell Park Cancer Institute (UB/RPCI))
Current position: PhD student at UB/RPCI (under Prof. Gal Shafirstein)

Fall 14 - 2016 Phil Schneider, MS (EE, UB, 2016), BS (EE, UB, 2014)|
MS thesis title: *A feasibility study of an acoustic test phantom arm* (Defense Date: 04/28/2016)
Committee member: Prof. Edward P. Furlani, Prof. Jennifer Zirnheld
Current position: PhD student at UB (under Prof. Kwang W. Oh)

Sum. 13 - 2015 Deekshitha Jett, MS (EE, UB 2015), BS (Electronics & Communication Eng., Jawaharlal Nehru Technological University, India, 2012)
MS thesis title: *Vacuum-assisted and Phaseguide-assisted blood typing device for point-of-care diagnostics* (Defense Date: 05/19/2015)
Committee member: Prof. Qiaoqiang Gan, Prof. Wayne Anderson
Current position: PhD student at UB (under Prof. Susan Hua, Mechanical Engineering)

Spr. 10 - 2011 Jing Xu, MS (EE, UB, 2011), BS (Communication Eng., Nanjing University of Information Science and Technology, China, 2007)
MS thesis title: *Development of droplet-based microfluidic devices for microdroplet trapping, storing and clustering* (Defense Date: 07/28/2011)
Committee member: Prof. Edward P. Furlani, Prof. Albert Titus)
Current position: CEC Huada Electronic Design Co., Ltd, San Francisco, CA

Spr. 10 - 2011 Linfeng Xu, MS (EE, UB, 2011), BS (Informatics and Control Eng., Shanghai University of Electric Power, China, 2009)
MS thesis title: *Vacuum-assisted self-powered microfluidic pumping for lab-on-chip (LOC) application* (Defense Date: 05/26/2011)
Committee member: Prof. Wayne Anderson, Prof. Edward P. Furlani
Current position: Intuitive Biosciences, Madison, Wisconsin

Sum 09 - 2010 Preethi Gopalan, BS (EE, SRM University, India, 2008), MS (EE, UB, 2010)
MS thesis title: *Development of droplet-based microfluidic devices for microdroplet trapping and pairing* (Defense Date: 06/28/2010)
Committee member: Prof. Wayne Anderson, Prof. YK Yoon
Current position: Intel

MS Students without Thesis

Spr. 13 - 2014	Rahul Prakash K Moodbidri, BS (Electronics and Telecommunication Eng., K J Somaiya Institute of Engineering and IT, Mumbai, India, 2012) Graduation date: Summer 2014
Fall 11	Deepika Kalra, B. Tech. (EE, Doon Valley Institute of Eng. & Tech., India, 2010) Graduation date: Spring 2013 Current position: CAD engineer at Intel Corporation
Fall 09 - 2010	Nicholis Geile, BS (EE, UB, 2009), MS (EE, UB, 2010) Current position: Engineer at Moog
Fall 07 - 2009	Paul Kay, BS (part-time, EE, UB, 1997) Current position: District Environmental Coordinator at UPS

International Exchange Students (MS)

Fall 08 - Spr. 09	Imene Ben Hassan (African Woman), Exchange MS students (EE, ENSEA, France, 2009), SHIP–ENSEA Intern Program Current position: Engineer - Bureau Veritas, France
Fall 07 - Spr. 08	Romain Louge, Exchange MS students (EE, ENSEA, France, 2008), SHIP-ENSEA Intern Program

** SHIP (SMALL Honors Internship Program) is **Oh**'s outreach program.*

Undergraduate Research Students

Winter 16 -	Liam Christie (Freshmen, EE, UB 2021), SHIP-Undergraduate Intern Program
Summer 16 -	Adam Trimper (Freshmen, EE, UB 2020), SHIP-Undergraduate Intern Program
Spr. 16 – Spr. 17	Alexander Villalta (Senior, EE, UB 2017), SHIP-Undergraduate Intern Program
Fall 15 -	Brett Bosinski (Sophomore, EE, UB 2018), UG Research Fellowships recipient, SHIP-Undergraduate Intern Program
Fall 14	Beom Jin Oh (Senior, EE, UB 2015), UG Research Fellowships recipient, SHIP-Undergraduate Intern Program
Spring 14	Phil Schneider (Senior, EE, UB 2014), UB Engineering Senior Scholarship recipient, SHIP-Undergraduate Intern Program, EE 499 Independent Study (topic: Ultrasonic display, Spring 2014)
Fall 13 - 2014	Mariana Vanderlei Brasil Pinheiro (Junior, Woman, international exchange student, scholarship recipient from Brazil Scientific Mobility Program, Universidade Federal do Rio Grande do Norte-UFRN, Brazil), SHIP-Undergraduate Intern Program, EE 499 Independent Study (topic: Droplet-based microfluidics, Spring 2014)
Spr.13 - 2013	Danilo Sulino Silveira Pinto (Junior, international exchange student, scholarship recipient from Brazil Scientific Mobility Program, Universidade Federal de Goias: UFG), SHIP–Undergraduate Intern Program, EE 499 Independent Study (topic: Microfluidic device for cell immune-staining, Spring 2013) Current position: Estagiário na Redutep Soluções Industriais, Brazil
Summer 13	Vinicius Abreu (Junior, international exchange student, scholarship recipient from Brazil Scientific Mobility Program, Centro Universitario da FEI), SHIP-Undergraduate Intern Program Current position: Edison Engineering Development at GE Power Conversion, Brazil
Spring 13	Christopher Adams, BS (EE, UB, 2013), SHIP-Undergraduate Intern Current position: Application Engineer at INNCOM by Honeywell
Summer 12	Frank A Segui (Puerto Rican), BS (EE, UB, 2014), SHIP-CSTEP (Collegiate Science & Technology Entry Program)
Fall 11	Ailin Lin, BS (EE, UB, 2013), SHIP–Undergraduate Intern Program
Spring 11	Miguel Gadea, BS (EE, UB, 2011), SHIP-Undergraduate Intern Program, EE 499 Independent Study (topic: Hydrodynamic Microfluidic circuits, Spring 2011)
Spring 11	Seongeun Jin, BS (EE, UB, 2011), SHIP-Undergraduate Intern Program, EE 499 Independent Study (topic: Flow cytometry, Spring 2011)

	Current position: Engineer at Cisco Systems
Sum 10 - 2011	Yen Jen Chen (Woman), BS (EE, UB, 2011), SHIP-Undergraduate Intern, EE 499 Independent Study (topic: Microfluidic circuits, Fall 2010) Current position: Equipment Engineer at GlobalFoundries
Spr. 10 - 2010	Patrick Smith, BS (EE, UB, 2011), SHIP-Undergraduate Intern Program, EE 499 Independent Study (topic: Microfluidic circuits, Fall 2010) Current position: Marine Student Naval Aviator -North Whiting Field - VT3
Summer 10	Anirudh Venugopal, International BS Summer Intern (EE, Anna University, Chennai, India 2012), SHIP-Undergraduate Intern Program Current position: Device Engineer at Vibrant Sciences LLC
Spring 08	Anthony R. Full, BS (EE, UB), SHIP-Undergraduate Intern Program, EE 499 Independent Study (topic: Universal Microfluidic Gradients, Spring 08)
Fall 07 - 2009	Ledum Nordee, BS (EE, UB, 2009), SHIP-CSTEP (Collegiate Science & Technology Entry Program), African American Current position: Power Systems Engineer, Eaton Corp., Franklin, MA
Fall 06 - 2008	William Cuthbert, UB Honors students, BS (EE, UB, 2008), SHIP-Undergraduate Intern Program, EE 499 Independent Study (topic: Magnetics-based Bidirectional Non-invasive Brain-computer Interfacing, Spring 08) Current position: Technical Support and Sales at ANT-Neuro

K-12

07/06 - 08/12/11	David Kulczyk, 12th grader from St. Francis in Buffalo, SHIP-INR Intern Program
07/07 - 08/13/10	Eric Birdsong (African American), 12th grader from the Math, Science, and Technology Preparatory School at Seneca in Buffalo, SHIP-INR Intern Program
07/06 - 08/14/09	Andrew Clark (African American), 12th grader from the Math, Science, and Technology Preparatory School at Seneca in Buffalo, SHIP-INR Intern Program
07/09 - 08/15/08	David Walker (African American), 12th grader from the East High School in Buffalo, SHIP-INR Intern Program
07/07 - 08/08/08	Ryan Glover, 12th grader from the St. Joseph's Collegiate Institute High School, SHIP-BEAM Intern Program

6-Sigma Black Belt (BB) Mentor

Fall 07 - 2008	Shrideep Sadhale, MS (Mechanical Eng., UB, 2008) Project with Tapecon, Buffalo, NY through TCIE Current position: Operational Excellence Consultant at GlaxoSmithKline
Fall 2007	Philip John, MS (Industrial Eng., UB, 2008) Project with Winfield Industries, Buffalo, NY through TCIE

Doctoral Dissertation Committee

12/2016	Ye Jia, "Interface characterization of atomic layer deposited dielectrics on novel III-Nitride semiconductors" (Advisor: Dr. Uttam Singisetti)
10/2016	Hong Liying, Nanyang Tech University, Singapore, "Biomedical applications of nanoparticles synthesized using miniaturized devices" (Advisor: Dr. Yong Ken Tye) (as an external appraiser)
10/2015	Xie Zeng, "Plasmonic interferometers: from physics to biosensing applications" (Advisor: Dr. Qiaogianq Gan)
09/2015	Song Peiyi, Nanyang Tech University, Singapore, "Engineering of MEMS Based Microfluidics Devices for Individualised Biomedical Applications" (Advisor: Dr. Yong Ken Tye) (as an external appraiser)
02/2015	Jing Xu, "Microfabricated flow calorimeter for RF power measurement" (Advisor: Dr. Albert Titus)
01/2015	Zhiyong Zhan, "CMOS spectrum evaluation device" (Advisor: Dr. Albert Titus)
12/2014	Bile Neji, "Microfabricated DC substitution calorimeter for RF power measurement" (Advisor: Dr. Albert Titus)
08/2014	Chong Tong, "Plasmonic nanostructures for enhanced ZnO/Si heterojunction optoelectronic

devices" (Advisor: Dr. Wayne Anderson)

02/2014 Mahyar Nasabi, "Surface tension assisted lithography" (Advisor: Dr. Arnan Mitchell), RMIT University, Melbourne, Australia (as an external appraiser)

12/2012 Eric Kozarsky, "Metal induced growth of thin Si films for photovoltaics: new approaches and applications" (Advisor: Dr. Wayne Anderson)

09/2012 Steve Shih, University of Toronto, "Automating digital microfluidics: towards high-throughput screening" (Advisor: Dr. Aaron Wheeler) (as an external appraiser)

08/2012 Lien Tu, "Custom CMO integrated sensor systmes" (Advisor: Dr. Alber Titus)

08/2012 Gayatri Venugopal, "Nonlinear and tunable metamaterials for optics on a chip devices" (Advisor: Dr. Natasha Litchinitser)

07/2011 Bin Qu, "An EMCCD-array, high-resolution imaging system for fluoroscopy and angiography" (Advisor: Dr. Alexander N. Cartwright)

05/2011 Yongwoo Jeong, "Bio-inspired hardware/software motion sensor system" (Advisor: Dr. Albert Titus)

11/2010 Jungkwun Kim, "Advanced multidirectional UV lithography for three dimensional (3-D) micro-/nano structures" (Advisor: Dr. YK Yoon)

Master Thesis Committee

05/2017 Ajeya Anand, "Electrical stimulation therapy for wound healing" (Advisor: Dr. Ed. Furlani)

07/2016 Yanbo Guo, "Improved portable SPR sensor for heavy metal detection" (Advisor: Dr. Qiaogianq Gan)

05/2016 Jordan Radice, "Decentralized digital electrode design for non-contact biopotential applications" (Advisor: Dr. Albert H. Titus)

05/2014 Chu Wang, "Thin-film interference for surface plasmon resonance system and ultra-thin film ultraviolet super absorber structure" (Advisor: Dr. Qiaogianq Gan)

12/2013 Young Hwa Kim, "Metasurfaces for plasmon-enhanced birefringence and optical rotation" (Advisor: Dr. Edward P. Furlani)

08/2013 Yen Jen Chen, "Fabrication and Evaluation of MIS Junctions on ZnO" (Advisor: Dr. Wayne Anderson)

05/2012 Qian Xie, "Plasmonics analysis of nanostructures for bioapplications" (Advisor: Dr. Edward Furlani)

05/2012 Ratna Reddy Chada, "Theoretical and experimental characterization of plasmonic materials and grating based SPR sensing" (Advisor: Dr. Edward Furlani)

10/2011 Manoj Devendhiran, "A microfabricated dc-substitution calorimeter for low power measurement" (Advisor: Dr. Albert H. Titus)

05/2011 Krishna Prasad Bhat, "Power transformer monitoring using embedded MEMS gas sensor" (Advisor: Dr. Douglas C. Hopkins)

05/2011 Chong Tong, "ZnO/Si heterojunction solar cell simulation and experimental evaluation" (Advisor: Dr. Wayne Anderson)

12/2008 Pitfee Jao, "Micromachined polymeric scaffold with neuron factor gradient for guided spiral ganglion neuron growth" (Advisor: Dr. YK Yoon)

12/2008 Guotang Pan, "Modeling Organic Thin Film Transistor for Integrated Circuit Design" (Advisor: Dr. Albert Titus)

07/2008 Madjid Semah, "Digital signal processing of an electrocardiogram measured with non-touching electrodes" (Advisor: Dr. Darold C. Wobschall)

07/2008 Sofien Elouni, "Measure of the electro-cardiogram at a distance in a car environment: analog part" (Advisor: Dr. Darold C. Wobschall)

07/2008 Sungyong Cha, "Air-lifted reflector antennas driven by a CBCPW Fed monopole for 2.4 GHz applications" (Advisor: Dr. YK Yoon)

01/2008 Apra Pandey, "Development of Set-up for Biopotential Measurement on Surface of Fertilized Eggs" (Advisor: Dr. Alexander Verevkin)

08/2007 Andrew Kucharski, "Preparation and Structure Analysis of Thin Graphene Flakes for Nanodevice Fabrication" (Advisor: Dr. Jonathan P. Bird)

01/2007 Troy Mckay, "Investigation of thermal impedance and stress in direct attached ceramic-AlSiC

structures for use in power packaging" (Advisor: Dr. Douglas Hopkins)

08/2006 Avarachan Cherian, "A simple wirelss electro cardiogram for home use" (Advisor: Dr. Darold C. Wobschall)

08/2006 Chiou-Yi Lee, "The Prototype of IEEE 14514 teds conversion software" (Advisor: Dr. Darold C. Wobschall)

TEACHING

Graduate Courses

Spring 2017 EE 526 Wearable & Implantable Sensors, PPT updates, 58 graduates (evaluation: 4.5/5.0)
Fall 2016 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 22 graduates (evaluation: 4.69/5.00)
Spring 2016 EE 526 Wearable & Implantable Sensors, PPT updates, 44 graduates (evaluation: 4.57/5.00)
Fall 2015 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 28 graduates (evaluation: 4.77/5.00)
Spring 2015 EE 526 Wearable & Implantable Sensors, new course, 40 graduates (evaluation: 4.70/5.00)
Fall 2014 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 14 graduates (evaluation: 4.67/5.00)
Fall 2013 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 22 graduates
Fall 2012 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 10 graduates
Fall 2011 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 18 graduates
Fall 2010 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 9 graduates
Fall 2009 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 20 graduates (evaluation: 3.50/4.00)
Fall 2008 EE 528 BioMEMS and Lab-on-a-chip, PPT updates, 8 graduates
Fall 2007 EE 528 BioMEMS and Lab-on-a-chip, course major modification, 10 graduates (evaluation: 3.74/4.00)
Fall 2006 EE 528 BioMEMS and Nanobiosensors, new course, 21 graduates (evaluation: 3.64/4.00)

Undergraduate Courses

Spring 2017 EE 311 Electronic Devices and Circuits 2, lecture (3 hr/week) and laboratory (5 sessions x 2 hr/week x 13 labs), PPT updates, 84 undergraduates (evaluation: 4.6/5.0)
Fall 2016 EAS 198 SEM: The places you will go (Session: D), seminar (1 hr/week), new course for transfer Student (offered based on a new UB Curriculum), 29 undergraduates
Fall 2016 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 19 graduates
Spring 2016 EE 311 Electronic Devices and Circuits 2, lecture (3 hr/week) and laboratory (5 sessions x 2 hr/week x 13 labs), major course modification, 107 undergraduates (evaluation: 4.85/5.00)
Fall 2015 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 8 undergraduates
Spring 2015 EE 311 Electronic Devices and Circuits 2, lecture (3 hr/week) and laboratory (4 sessions x 2 hr/week), PPT updates, 80 undergraduates (evaluation: 4.68/5.00)
Fall 2014 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 10 undergraduates
Fall 2013 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 10 undergraduates
Spring 2013 EE 311 Electronic Devices and Circuits 2, lecture (3 hr/week) and laboratory (5 sessions x 2 hr/week), major course modification, 103 undergraduates
Fall 2012 EE 203 Circuit Analysis 2, PPT updates, 43 undergraduates
Fall 2012 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 8 undergraduates
Fall 2012 UE 141 Freshman Seminar Series - Bringing Physics and Engineering to Life, 1 credit, offered 3 lectures and 2 labs (with Prof. Markelz and Prof. Snell), 1 credit, 20 undergraduates
Spring 2012 EE 203 Circuit Analysis 2, PPT updates, 58 undergraduates
Fall 2011 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 7 undergraduates
Spring 2011 UE 141 Freshman Seminar Series - Bringing Physics and Engineering to Life, 1 credit, offered 3 lectures and 2 labs (with Prof. Markelz and Prof. Snell), 1 credit, 5 undergraduates
Spring 2011 EE 203 Circuit Analysis 2, PPT updates, 50 undergraduates
Fall 2010 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 7 undergraduates
Spring 2010 EE 203 Circuit Analysis 2, PPT updates, 67 undergraduates (evaluation: 2.97/4.00)
Fall 2009 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 6 undergraduates

Spring 2009 EE 203 Circuit Analysis 2, PPT updates, 52 undergraduates (evaluation: 3.32/4.00)
Fall 2008 EE 428 BioMEMS and Lab-on-a-chip, PPT updates, 11 undergraduates
Spring 2008 EE 203 Circuit Analysis 2, major course modification, 70 undergraduates
Fall 2007 EE 428 BioMEMS and Lab-on-a-chip, course major modification, 4 undergraduates
Spring 2007 EE 203 Circuit Analysis 2, lecture, major course modification, 86 undergraduates (evaluation: 3.33/4.00)

Guest Lectures

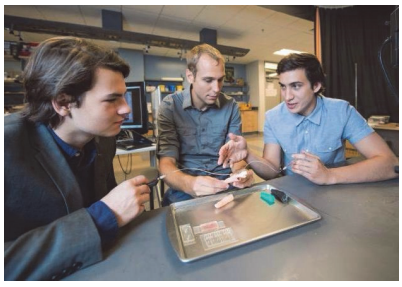
Fall 2015 CE 564 Tissue Engineering, "Microfabrication Technologies and Applications in Cell Culture and Tissue Engineering" (10/20/2015)
Fall 2014 CE 564 Tissue Engineering (10/07/2014)
Fall 2013 CE 564 Tissue Engineering (9/26/2013)
Fall 2012 CE 564 Tissue Engineering (10/02/2012)
Fall 2011 DMS 604 Large-scale Sensing Systems, "Biosensors for lab-on-a-chip (LOC) and point-of-care-test (POCT)" (09/19/2011)
Spring 2011 CE 564 Tissue Engineering, "Microfabrication Technologies and applications in Cell Culture and Tissue Engineering" (03/08/2011)
Fall 2006 UE 141 Freshman Seminar Series - Nanostructured Materials, "Nano/microfluidics for Biomedical Applications" (11/01/2006)

AWARDS AND HONORS

2013 ***Emerging Investigators 2012, Lab Chip***, Royal Society of Chemistry. "*This newest cohort of Emerging Investigators is, in a word, a group of control freaks: controlling fluids, controlling forces, controlling fields*" (from Editorial: Mission impossible to mission control, *Lab Chip*, 12, 3851-3852); featured on **the cover page of *Lab Chip* journal** (*Lab Chip*, 12, 3936-3942, 2012).
03/2012 Professional Development Award, UUP, SUNY
05/2011 Professional Development Award, UUP, SUNY
05/2010 Professional Development Award, UUP, SUNY
02/2010 Research Initiatives Travel Award, SEAS, UB
11/2009 Research Initiatives Travel Award, SEAS, UB
06/2009 Professional Development Award, UUP, SUNY
08/2005 Outstanding Researcher Award, Bio Lab, SAIT
2004 Outstanding Paper Award, in SAMSUNG Journal of Innovative Technology
2004 Knowledge Management Best Practice Award, SAIT
2004 Six Sigma Best Practice Award, Samsung Group
2003 Six Sigma Best Practice Award, SAIT
2003 *Honor of CEO, Samsung Electronics,* for the commercialization of a Micro PCR system
1998 Conference Travel Award, Adhesives in Electronics '98, Binghamton, NY
1998 Conference Travel Award, Solid-State Sensor and Actuator Workshop '98, Hilton Head Island, SC
1995 - 2000 University Graduate Scholarship, University of Cincinnati
1995 University Graduate Scholarship, Chonbuk National University
02/1995 Honor of Dean, College of Natural Sciences, Chonbuk National University
1993 - 1995 Yangback Foundation Fellowship (full tuition scholarship), Daenong Group
1991 - 1995 University Tuition Scholarship, Chonbuk National University

Recognition of Work, in Press/News

2016 A recent research activity ("Bioelectrical Engineering at EE: With funding from the NSF, Professor Kwang Oh's project, *Microfluidic 3D Capillary Network Test Phantom for Subdermal Vascular Imaging* will create a physiologically accurate model of the human finger…") has been featured on UB Electrical Engineering Newsletter (A newsletter for



students, alumni and friends of the UB EE, 11/29/2016) (http://engineering.buffalo.edu/electrical/research/research_news/kwang-oh-nsf.html, http://myemail.constantcontact.com/UB-Electrical-Engineering-News.html?soid=1121826710202&aid=nYnDNoKTWCw)

2016 An online news ("Microfluidics made easy" by Eleanor Hall, CHEMISTRY WORLD, RSC) regarding a paper (by Grover, Lab Chip, 2016, DOI: 10.1039/C6LC00758A) (http://www.chemistryworld.com/1017561.article)

2012 A Paper ("Simultaneous detection of duplex DNA oligonucleotides using a SERS-based micro-network gradient chip," *Lab Chip*, 12, 5160-5167, 2012) has been featured on **the cover of *Lab Chip* journal**.

2012 A paper ("Design of pressure-driven microfluidic networks using electric circuit analogy," *Lab Chip*, 12, 515-545, 2012) has been listed as one of top ten most accessed articles in December 2011. One of "Lab on a Chip 2012 Review Articles" (http://pubs.rsc.org/en/journals/articlecollectionlanding?sercode=lc&themeid=98c80633-4b70-41f3-947e-47c20869cad3)

2012 A paper ("Droplet-based microfluidic device for multiple-droplet clustering," *Lab Chip*, 12, 725-730, 2012) has been listed as one of top ten most accessed articles in December 2011. It has been highlighted on the LOC blog ("Hot articles on bubble removal, microfluidic wound-healing assays, multiplexed screening and more") at http://blogs.rsc.org/lc/2011/12/23/hot-articles-on-bubble-removal-microfluidic-wound-healing-assays-multiplexed-screening-and-more/.

2011 A paper ("A new fabrication process for uniform SU-8 thick photoresist structures by simultaneously removing edge bead and air bubbles," *Journal of Micromechanics and Microengineering* (JMM), Vol 21, pp125006, 2011) has been downloaded more than 250 times within 1.5 month period after online publication (from 11/03/2011 to 12/20/2011). To put this into context, across all IOP (Institute of Physics) journals only 10% of articles were accessed over 250 times at the 4th quarter of 2011.

2011 **On the cover of *Lab Chip* journal** our work (Byungwook Ahn, Kangsun Lee, Hun Lee, Rajagopal Panchapakesan and Kwang W. Oh, "Parallel synchronization of two trains of droplets using a railroad-like channel network," *Lab Chip*, 11, 3956-3962, 2011) has been highlighted with an image describing our method for droplet combination in microfluidic devices that allows passive parallel synchronization.

2011 "EE's Oh researches droplet manipulation," *Buffalo Engineer*, Spring 2011, UB (http://www.eng.buffalo.edu/newsletter- UBENGINEERING_ PDF/Spring2011_newsletter.pdf)

2010 "Equipped to succeed: Federal instrumentation grants stimulate research and the economy," *Research Navigator* (Office of the Vice President of Research Quarterly Newsletter), Spring 2010, UB, by Lauren N. Maynard (http://www.research.buffalo.edu/ovpr/navigator/)

2007 JMM Highlights of 2006, selected to highlight the quality of research published in Journal of Micromechanics and Microengineering (JMM). The chosen 25 articles showcase top recent contributions and have been selected for being the most downloaded or of the highest quality according to the referees (Kwang W. Oh and Chong H Ahn, "A review of microvalves," *JMM*, 16, R13-R39, 2006).

2006 "New faculty builds on UB's strategic strengths: the big picture on nano- and microtechnology," *UB Engineering Today* (one of publications heralding important faculty/staff achievements and/or organizational developments), Dec. 2006, UB (http://www.eng.buffalo.edu/images/NewHire.pdf)

Recognition of Work, with Advisee

May 2017 Brett Bosinski, Western New York Prosperity Scholarship (2017-2020).

April 2017 Phil Schneider, the 1st place winner of UB's first annual Three Minute Thesis (3MT) competition, UB's Graduate School and Blackstone LaunchPad

Dec. 2016 Adam Trimper, Barbara and Jack Davis Scholarship, SEAS, UB

Dec. 2016 Brett Bosinski, Matthew R. Grappone Scholarship, SEAS, UB

Nov. 2016 Phil Schneider, Brett Bosinski, Adam Trimper, Best Posters Awards, NSF I/UCRC: CITeR (Center for Identification Technology Research), Fall Program Review 2016, New York,

NY, November 13-15, 2016

Sum. 2016 Brett Bosinski's interview was featured on UB EE website. He said that "Engineering is about making things work, and I needed to find the major that was going to work for me. I chose Electrical Engineering because I wanted a better understanding of how modern technology works in order to be able to develop new technologies that will help shape society for a better future."

Sum. 2016 Rittick Banerjee, Internship, Apple Inc.

Spr. 2016 Phil Schneider, Internship, Qualcomm

Fall 2014 Phil Schneider, Western New York Prosperity Scholarship (2013-2017)

Fall 2014 Linfeng Xu, MicroTAS 2014 CBMS Travel Grant

Spr. 2014 Phil Schneider, Senior Scholarship, SEAS, UB

Fall 2013 Linfeng Xu, Mark Diamond Research Award, GSA, UB

2011-2012 Rajagopal Panchapakesan, Internship at Advanced Liquid Logic Inc., Research Triangle Park, NC

Sum. 2011 Yen Jen Chen, Arthur A. Schomburg Fellowship for her Graduate Study at UB, Summer intern at E-Sensors, Buffalo

Spr. 2011 Kangsun Lee, Mark Diamond Research Award, GSA, UB

Fall 2010 Byungwook Ahn, Mark Diamond Research Award, GSA, UB

2010 Nicholis Geile, NASA/New York Space Grant Summer Research Program through Cornell University at Moog Inc.

Spr. 2010 Rajagopal Panchapakesan, Mark Diamond Research Award, GSA, UB

PROFESSIONAL MEMBERSHIP

IEEE *Member*, Institute of Electrical and Electronics Engineers

ASME *Member*, American Society of Mechanical Engineers

KSEA *Member*, Korean-American Scientists and Engineers Association

PROFESSIONAL ACTIVITY AND SERVICE TO SCIENTIFIC COMMUNITY

Editorship

2016 – 2017 *Guest Editor*, Special Issue: "Biomedical Microfluidic Devices", *Micromachines*, MDPI (IF: 1.295).

2016 – *Editorial Board Member*, *American Journal of Engineering and Applied Sciences*, Science Publications

2015 – *Editorial Board Member*, *Biomedical Engineering Letters*, Springer

2014 – *Editorial Board Member*, *Advanced Health Care Technologies*, Dove Medical Press

2013 – 2015 *Guest Editor*, Special Issue: "On-Chip Sensors", *Sensors*, MDPI (IF: 2.245).

2012 – *Editorial Board Member*, *Journal of Engineering* (a peer-reviewed, open access journal that publishes original research articles as well as review articles in Chemical, Civil, Computer, Electrical, Industrial and Mechanical Engineering), Hindawi Publishing

2011 – 2012 *Editorial Specialist*, The Global Network of Korean Scientists & Engineers (KOSEN)

2009 – *Editorial Board Member* (International Editor), an international journal, Transactions on Electrical and Electronic Materials (*Trans. Electr. Electron. Mater.*), published by the Korean Institute of Electrical and Electronic Material Engineers

Conference Chair/Organizer

2017 *Workshop Instructor*: *Micro & Bio Fluidics, Lab-on-Chip*, May 14, 2017, 9:00 am - 5:00 pm, Gaylord National Convention Center, Washington, DC (the topics in the lecture course include: Micro- and Nano-fluidics, Micro- and Nano-fluidic Devices, Biofluidics, Microfluidic Platform Technologies, Modeling and Simulation, Lab-on-a-Chip, Future Directions)

2012 - *Symposium Co-Chair*: *Micro & Bio Fluidics, Lab-on-Chip* (http://www.techconnectworld.com/Nanotech2017/sym/Micro_Bio_Fluidics_Lab-on-Chip.html);

NanoTech 2017, Washington DC, May 14-17, 2017;
NanoTech 2016, Washington DC, May 22-25, 2016;
NanoTech 2015, Washington DC, June 14-18, 2015;
NanoTech 2014, Washington DC, June 15-19, 2014;
NanoTech 2013, Washington DC, May 12-15, 2013;
NanoTech 2012, Santa Clara, California, June 18-21, 2012

2014 - *Scientific Advisory Committee*, International Electronic Conference on Sensors and Applications
ECSA 2016, MDPI & Journal Sensors, November 15-30, 2016;
ECSA 2014, MDPI & Journal Sensors, June 1-16, 2014

2014 - 2015 *Track Chair: Biosensor, Nanotechnology, and BioMEMS*, 2015 World Congress on Medical Physics & Biomedical Engineering, Toronto, Canada, June 7-12, 2015.

2009 - 2010 *Co-organizer: Energy and Power in Micro and Nano Systems*, ASME IMECE (International Mechanical Engineering Congress & Exposition), Vancouver, Canada, Nov. 12-18, 2010

2009 *Co-organizer: Nanotechnology in Biology and Medicine,* the 2nd annual Integrated Nanostructured Systems (INS) Workshop, UB, May 2009

2009 *Co-organizer: Energy and Power in Micro and Nano Systems*, *ASME IMECE* (International Mechanical Engineering Congress & Exposition), Lake Buena Vista, Florida, Nov. 13-19, 2009

2007 *Co-organizer*: *Multifunctional Nanomaterials and Nanodevices,* the 1st annual Integrated Nanostructured Systems (INS) Workshop, UB, May 18-19, 2007

Grant Proposal Review Panel

2016 NSF-CCSS
2015 NSF-CCSS
2014 NSF-EPMD, NSF-CCSS, Swiss National Science Foundation
2013 NSF-EPMD
2012 ORAU
2011 NSF-CCSS
2010 NSF-CAREER, NSF-MRI, NSF-IHCS, NSF-IDR
2009 NSF-EFRI
2008 NSF-IHCS
2007 European Young Investigators Awards (EURYI), Consiglio Nazionale delle Ricerche & European Science Foundation
2007 NSF-EPDT
2006 NSF-EPDT

Journal/Conference/Book Referee

Journal Reviewer: Analytical Chemistry, Analytical Methods, Applied Physics Letters, Biomedical Engineering Letters, Biomicrofluidics, Sensors, Biotechnology Journal, ChemComm, Lab Chip, Microelectronics Engineering, Microfluidics and Nanofluidics, SAMSUNG Journal of Innovative Technology, IEEE Sensors Journal, Sensors and Actuators A & B, Journal of MEMS, Journal of Micromechanics and Microengineering, Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3), Physics of Fluids, Small

Conference Proceeding Reviewer: ECSA 2016, ECSA 2014, NanoTech 2016, NanoTech 2015, NanoTech 2014, NanoTech 2013, NanoTech 2014, IMECE 2007, IMECE 2008, IMECE 2009, IMECE 2010, World Congress on Medical Physics & Biomedical Engineering 2015

Book Proposal Reviewer: Introduction to Nanobiosensors, Artech House, Inc. (12/2008)

ACADEMIC SERVICE ACTIVITIES

Department (EE)

2015 - *EE Representative* in the Tenure and Promotion Committee of SEAS
2013 - *Member of Graduate Financial Aid*, reviewed policy for TA & scholarship arrangement
2006 - *Member of Graduate Admission Committee*, reviewed applicants for graduate admission

03/2010 *Judge*, Graduate Student Poster Contest
10/2008 *Member of Publicity Committee*, published a two-page flyer of BS in EE department
2007 - 2008 *Member of New Eng. Building Committee* (Clean Room, Research Space)
Fall 2007 *Member of Graduate Seminar*

School (SEAS)

2015 - Tenure and Promotion Committee of SEAS, made recommendations for tenure and promotion of faculty to the rank of Associate Professor
07/13/2010 Participation, to a UB-Tapecon meeting, discussed potential research opportunity between Tapecon and UB
01/21/2010 Participation, to IDEX Day on campus
2007 - 2008 6-Sigma Black Belt Mentor, mentored two students, The Center for Industrial Effectiveness (TCIE)
05/14/2007 Participation, to UB Alumni Event, "Building the Path to Success: UB and Moog, Inc."
05/12/2007 Participation, UB Engineering Commencement Marshals

University (UB)

05/2016 Value-Add (for a team "Micro Fluidic Bubble Fuse"), Pre-Seed Workshop 2016 (05/17, 05/19, 05/26), UB Center of Excellence, Bioinformatics and Life Sciences
04/06/2011 *Judge*, UB's Annual Sigma Xi Student Research Poster Contest
04/01/2010 *Judge*, UB's Annual Sigma Xi Student Research Poster Contest
2009 *Co-organizer and section chair*, Nanotechnology in Biology and Medicine, the 2nd annual Integrated Nanostructured Systems (INS) Workshop, UB, May 2009
2008 - 2009 *Nano Club Advisor*, Nanoscale Science and Technology student club
2007 Co-organizer and section chair, Multifunctional Nanomaterials and Nanodevices, the 1st annual Integrated Nanostructured Systems (INS) Workshop, UB, NY, May 18-19, 2007
03/2006 - *Member*, UB 2020 Strategic Strength in Integrated Nanostructured Systems (INS)
03/2006 - *Member*, The New York State Center of Excellence in Bioinformatics & Life Sciences (NYS CoE)