

SEOKHEUN "SEAN" CHOI, PH.D.

Associate Professor,

Director of Bioelectronics and Microsystems Laboratory (Web: <http://ws.binghamton.edu/choi>),

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■ PROFESSIONAL EXPERIENCE

Director, Center for Research in Advances Sensing Technologies & Environmental Sustainability (CREATES), SUNY Binghamton	<i>Jan. 2020 - Present</i>
Associate Professor, SUNY Binghamton Department of Electrical & Computer Engineering	<i>Sep. 2018 - Present</i>
Associate Director, Center for Research in Advances sensing Technologies & Environmental Sustainability (CREATES), SUNY Binghamton	<i>Feb. 2016 - Dec. 2019</i>
Assistant Professor, SUNY Binghamton Department of Electrical & Computer Engineering	<i>Sep. 2012 - Aug. 2018</i>
Research Assistant Professor, University of Cincinnati School of Electronic & Computing Systems (The Ohio Center for Microfluidic Innovation)	<i>Sep. 2011 - Aug. 2012</i>
Research Engineer, LG Chem. Ltd. (Korea) Battery Tech. Center, Research Park	<i>Dec. 2004 - Apr. 2006</i>

■ EDUCATION

Ph.D. Electrical Engineering, Arizona State University Ira A. Fulton School of Electrical, Computer & Energy Engineering Dissertation: Advancing Microfluidic-Based Protein Biosensor Technology for Use in Clinical Diagnostics	<i>Aug. 2007 - Aug. 2011</i>
M.S. Electrical Engineering, Sungkyunkwan University (Korea) School of Information & Communication Engineering, Thesis: Study on the ferroelectric domain using Piezoresponse Force Microscope	<i>Mar. 2003 - Aug. 2004</i>
B.S. Electrical Engineering, Sungkyunkwan University (Korea) School of Information & Communication Engineering	<i>Mar. 1996 - Feb. 2003</i> <i>(Military service Apr. 1997 - Jun. 1999)</i>

■ AWARDS/GRANTS/FELLOWSHIPS/SCHOLARSHIPS

Total of \$3.1M, of which ~ \$2.2M to the Choi's Lab

(a) External Funding (~\$2.82 million in research funding since 2011)

1. August 2020 ~ July 2023, **National Science Foundation** – (ECCS #2020486), \$345,000 (**co-PI**); Stretchable Papertronics
2. June 2019 ~ May 2022, **National Science Foundation** – (ECCS #1920979), \$452,581 (**PI**); Power-on-Skin: Energy Generation from Sweat-Eating Bacteria for Self-Powered Electronic Skins
3. Jun 2018 ~ May 2021, **Office of Naval Research** (N00014-18-1-2422), ~\$550,000 (**Sole PI**); Supercapacitive Micro-Bio-Photovoltaics for Sustainable Wireless Sensor Network
4. September 2017 ~ August 2020, **National Science Foundation** (ECCS # 1703394), \$315,000 (**Sole PI**); Unlocking the Promise of Bacterial Electrogenicity
5. July 2016 ~ June 2021, **National Science Foundation** (BREAD IOS# 1543944), \$867,536 (**co-PI**); Development and Field Testing of paper-based Biosensors to Increase Productivity of Smallholder Agriculture in Developing Countries
6. July 2015 ~ June 2018, **National Science Foundation** (ECCS #1503462), \$294,539 (**Sole PI**); An Origami Paper-Based Bacteria-Powered Battery for On-Chip Biosensors

(b) Internal Funding (~\$300k in research funding since 2011)

- The 2020 SUNY COVID-19 Seed Grant - (Co-PI) - \$5,000; Point-of-care assay for COVID-19 immune response
- The 2019-2020 IEEC (Sole PI) - \$25,000; High-Performance Paper PCBs
- The 2019-2020 Smart Energy Transdisciplinary Area of Excellence (PI) - \$15,000; Gut Pathogens
- The 2018-2019 IEEC (Sole PI) - \$50,000; Paper PCBs
- The 2018-2019 Smart Energy Transdisciplinary Area of Excellence (PI) - \$15,000; Bio-solar cells
- The 2017-2018 Smart Energy Transdisciplinary Area of Excellence (PI) - \$15,000; Biobatteries
- The 2015-2016 Health Sciences Transdisciplinary Area of Excellence (Co-PI) - \$15,000; Biosensors
- The 2014-2015 Interdisciplinary Collaboration Grant (PI) - \$15,000; Biological fuel cells
- ADL Small Grant (SUNY Binghamton) 2017 - \$2500; Textile-based biobatteries
- ADL Small Grant (SUNY Binghamton) 2016 - \$2500; A VOC sensor
- ADL Small Grant (SUNY Binghamton) 2015 - \$2500; A paper-based biobattery
- ADL Small Grant (SUNY Binghamton) 2013 - \$2500; A Micro-sized microbial fuel cell
- 2015 Summer Scholars and Artist's Program Fellowship; \$3000
- 2014 Summer Scholars and Artist's Program Fellowship; \$3000
- 2013 Summer Scholars and Artist's Program Fellowship; \$3000
- S3IP Undergraduate Research Initiative (Feb. 2016); \$2000
- S3IP Undergraduate Research Initiative (Sep. 2014); \$2000
- S3IP Undergraduate Research Initiative (Jan. 2013); \$2000
- Senior Project 2019-2020; \$1500 /
- Senior Project 2016-2017; \$5000 /
- Senior Project 2015-2016; \$4000 /
- Senior Project 2014-2015; \$5000/
- Senior Project 2013-2014; \$3500
- Start-up funding (2012~2014) – \$150,000

(c) Awards and Scholarship

- 2019-2020 SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities (2020)
- 2018 Career Champion from The Fleishman Center for Career and Professional Development at BU (2018)
- Breakthrough Innovation Award from The New York Academy of Science (2017)
- "Outstanding Reviewer Status" from Biosensors & Bioelectronics Journal (2016)
- NYS/UUP Individual Development Award (2016)
- LG Chem. Ltd.: Technological Achievement Award (2005)

RESEARCH INTERESTS

Micro-/Nano-technology for chemical/biological analysis and bioenergy harvesting, Biobatteries, Skin-mountable biobatteries, Implantable biobatteries, Biofuel cells, Microbial fuel cells, Supercapacitive biofuel cells, BioMEMS, Biosensors, Microfluidics, Flexible and stretchable electronics, Papertronics, Fibertronics, Green electronics, Point-of-care diagnostic devices, Micro-scale bioelectrochemical systems, Biosynthesis, Soft robotics, Artificial photosynthesis, Artificial Leaf, Living electronics, Gas sensors, 3-D printed biofilm, Antimicrobial susceptibility testing and Electromicrobiology.

RESEARCH ACCOMPLISHMENTS

Dr. Choi has made original and seminal contributions to discovery, characterization and understanding of fundamental properties of exoelectrogens (power-producing microorganisms), and their applications in energy sciences, sensors, & electronics. He is the world leader in paper biobatteries, textile biobatteries, & micro-biophotovoltaics.

- Choi invented paper-based microbial fuel cells and initiated the field of paper bioenergy (Energy harvesting).
<https://www.medicaldesignandoutsourcing.com/diagnostic-devices-developing-world/6/>
<https://www.sciencedaily.com/releases/2016/12/161221110606.htm>
<https://www.smithsonianmag.com/innovation/spit-powered-biobattery-made-single-sheet-paper-180961973/>
<https://www.sciencedaily.com/releases/2018/08/180808134159.htm>
<https://theconversation.com/paper-based-electronics-could-fold-biodegrade-and-be-the-basis-for-the-next-generation-of-devices-102759>
- Choi invented textile-based biobatteries for smart textiles (Flexible electronics & Energy harvesting).
<https://www.materialstoday.com/energy/news/stretchable-biobatteries-become-a-reality/>

<https://www.sciencedaily.com/releases/2017/12/171207114948.htm>
<https://www.technicaltextile.net/interviews/binghamton-university/lead-researcher/1742-1/>

- Choi pioneered small-scale biophotovoltaic cells for internet of things (Energy harvesting & IoT).
<https://phys.org/news/2017-03-self-sustaining-bacteria-fueled-power-cell.html>
<https://www.sciencedaily.com/releases/2016/04/160411152653.htm>
https://www.solarnovus.com/biological-solar-power-day-and-night_N8542.html
<https://www.binghamton.edu/news/story/2400/new-biosolar-cell-could-power-sensors-for-internet-of-things>

■ COURSES

EECE 605 (Fall) – Interfacing Engineering and Biology at Nanoscale (*Developed by Dr. Choi*)

This course covers aspects of bio-molecular function and the interface with synthetic nanomaterials to explore the possibility of devices and systems that are unprecedented in nature. Students will learn the principles of design of biological nanosystems, will be able to critically respond to the engineering issues surrounding the creation of nano-sensors/nano-robots/nano-devices, and will be able to appreciate their potential benefit and impact in health, agricultural, industrial and human environments. This course includes both lectures and hands-on laboratory components.

EECE 516 (Spring) – Introduction to Bioenergy (*Developed by Dr. Choi*)

This course is an undergraduate senior (4+1 program)/Graduate level course. This course is meant to provide an overview of the field of renewable energy/fuel made available from biologically derived materials with focus on its system implementations. In particular, the course will focus on innovative microsystems for bioelectricity, biofuel, biorefinery, and environmental applications. This course includes both lectures and hands-on laboratory components.

EECE 505 (Fall) – BioMEMS and Bioelectronics (*Developed by Dr. Choi*)

This course is an undergraduate senior (4+1 program)/Graduate level course. This course is meant to provide an overview of the field of bioMEMS, Biosensors and bioelectronics. It will familiarize students with micro/nanofabrication techniques, Lab-on-a-chip, microfluidics, various microfluidic components, biofuel cells, drug delivery, neural interface, and microsystems for cellular studies and tissue engineering. This course includes both lectures and hands-on laboratory components.

EECE 332 (Fall) – Semiconductor devices

This course is an undergraduate junior/senior level core course for EE (Electrical Engineering) students. This course covers basic theory of semiconductors, p-n junctions, bipolar junction transistors, and MOS field effect devices

EECE 323 (Spring) – Electromagnetics

This course is an undergraduate junior/senior level core course for EE (Electrical Engineering) students. This course covers fundamentals of electromagnetic fields, Maxwell's equations, plane waves & reflections and application to transmission lines, antennas, propagation, electromagnetic interference, electronics packaging & wireless communication

EECE 497/499/597/697 – Independent Study

These courses are designed to allow students to work individually with a faculty member on a project or topic of mutual interest.

EECE 489 – Senior Project

Design projects in cooperation with local industry, other external clients, and university sponsored projects - outlining specifications, proposals, time schedules, and paper designs. Periodic design reviews with client, written and oral progress reports, final presentation. Evaluation based on individual and team performance.

■ PROFESSIONAL ACTIVITIES AND LEADERSHIP

Proposal Reviewer

- Swiss National Science Foundation – Proposal review (July 2018)
- NSF Review Panels (Nov. 2011, Feb. 2013, Mar. 2017, Feb. 2018, Aug. 2018)
- NSF proposal Ad hoc review (Sep. 2018)
- Mitacs Globalink Partnership Award – Proposal review (Oct. 2017 & May 2018)
- European Research Council Executive Agency - Proposal review (Sep. 2017)
- Israel Ministry of Science, Technology and Space - Proposal review (Apr. 2017)
- National Science Centre, Poland (2016)

-French National Research Agency – Proposal review (2015)

-India Alliance Fellowship application reviewer (2013)

Journal Referee (85 Journals)

Sep. 2009 - Present

ACS Applied Materials & Interfaces; ACS Industrial & Engineering Chemistry Research; ACS Sensors; ACS Sustainable Chemistry & Engineering; Acta Biomaterialia; Advances in Bioscience and Bioengineering; **Advanced Materials**; **Advanced Energy Materials**; **Advanced Functional Materials**; Advanced Intelligent Systems; **Advanced Science**; Advanced Sustainable Systems; Analytical Chemistry; Applied Surface Science; Batteries; Bioresource Technology; Biochemistry and Biotechnology Research; Bioelectrochemistry; Biosensors and Bioelectronics; Bioinspiration & Biomimetics; Biotechnology Progress; Chemical Engineering Journal; ChemElectroChem; ChemCom; ChemSusChem; Colloids and Surfaces B: Biointerfaces; Computers and Electronics in Agriculture; Desalination and Water Treatment; Electroanalysis; Electrochemistry Communication; Energies (MDPI); Energy (Elsevier); Energy & Fuels; Environmental Science & Technology letters; Enzyme and Microbial Technology; Fuel Cells; Fermentation; Frontiers of Energy; Frontiers of Optoelectronics; IEEE Sensors; IEEE Transactions on Biomedical Engineering; International Journal of hydrogen energy; International Journal of Environmental Analytical Chemistry; Journal of the Association for Laboratory Automation; Journal of Biotechnology; Journal of Chemical Technology and Biotechnology; Journal of Controlled Release; Journal of Hazardous Materials; Journal of Industrial & Engineering Chemistry; Journal of Materials Chemistry A; Journal of Microbial Biochemical Technology; Journal of Microelectromechanical Systems; Journal of the Electrochemical Society; Journal of Power Sources; Lab on a Chip; Materials Research Bulletin; **Materials Today**; Micro and Nano Letter; Micro and Nano Systems Letters; Microchemical Journal; Microelectronic Engineering; Microfluidics and Nanofluidics; Micromachines; **Microsystems & Nanoengineering (Nature)**; Microsystem Technologies; Molecules; **Nano Energy**; Nanoscale; NPJ Flexible Electronics; **Nature Electronics**; **Nature Sustainability**; Physical Chemistry Chemical Physics; Open Journal of Applied Biosensor; PLOS ONE; Renewable & Sustainable Energy Reviews; RSC Advances; Science of the Total Environment; **Scientific Reports**; Sensors; Sensors & Actuators: A. Physical; Sensors & Actuators: B. Chemical; SLAS Technology; **Small Methods**; Smart Grid & Renewable Energy; Surface & Coating Technology; Technology; Waste Management

Journal Editorial Board

-Guest Editor for special issue “Micro and nano scale sensors, and sensorial systems in bioengineering and biotechnology,” in **Frontiers in Bioengineering & Biotechnology** May 2020 - Present

-Editorial Board Member in **Applied Nano** Apr. 2020 - Present

-Editorial Board Member in **Electronic Materials** Apr. 2020 - Present

-Editorial Board Member in **Micromachines** Aug. 2019 - Present

-Editorial Board Member in **Robotics** Feb. 2019 - Present

-Guest Editor for special issue “Biosensing Systems for POC Diagnostics” in **Sensors** Nov. 2018 - June 2021

-Guest Editor for special issue “Microbial Fuel Cells” in **Batteries** Nov. 2018 - June 2021

-Editorial Board Member in **Sensors** Nov. 2018 - Present

-Associate Editor in **Frontiers in Bioengineering & Biotechnology** Aug. 2017 - Present

-Guest Editor for special issue “Bio-batteries” in **Batteries** May 2017 - Aug. 2018

-Guest Editor for special issue “Micro-/nano-systems for bioengineering and biotechnology,” in **Frontiers in Bioengineering & Biotechnology** Dec.2016 - Jan.2018

-Editorial Board Member in **Batteries** Feb. 2016 - Present

-Editorial Board Member in **Journal of Applied Biosensor** Aug. 2012 - Present

-Editorial Board Member in **Smart Grid & Renewable Energy** Jan. 2013 - Present

-Editorial Board Member in **Biosensors Journal** Dec. 2013 - Present

-Editorial Board Member in **Advances in Bioscience and Bioengineering** Oct. 2013 - Dec. 2014

-Editorial Board Member in **Journal of Biochips & Tissue Chips** Dec. 2013 - Dec. 2014

Scientific Committee

- MRS Fall 2021 – Session Co-organizer - Engineered Functional Multicellular Circuits, Devices & Systems

- IEEE Sensors 2019 conference – Paper Reviewer

- IEEE Engineering in Medicine and Biology Society 2019 – Paper Reviewer

- IEEE Engineering in Medicine and Biology Society 2018 – BioMEMS and Microfluidics Session co-chair

- 2018 IEEE Biomedical Circuits and Systems Conference – Paper Reviewer

- IEEE Sensors 2018 conference – Paper Reviewer

- IEEE Sensors 2017 conference – Paper Reviewer

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- 18th International Conference on Solid-State Sensors, Actuators and Microsystems 2015 (Transducers) – Session co-chair (Electro Fluidics)
 - IEEE NEMS 2014 – Session Chair (Micro/Nano Robotics, Assembly and Automation)
 - IEEE International Symposium on Mechatronics and Applications (ISMA 2013) – Technical Program Committee

Member

- IEEE Senior Member
- MRS Member
- ASME Member
- International Society for Microbial Electrochemistry and Technology
- Korean-American Scientists and Engineering Association

■ SERVICES

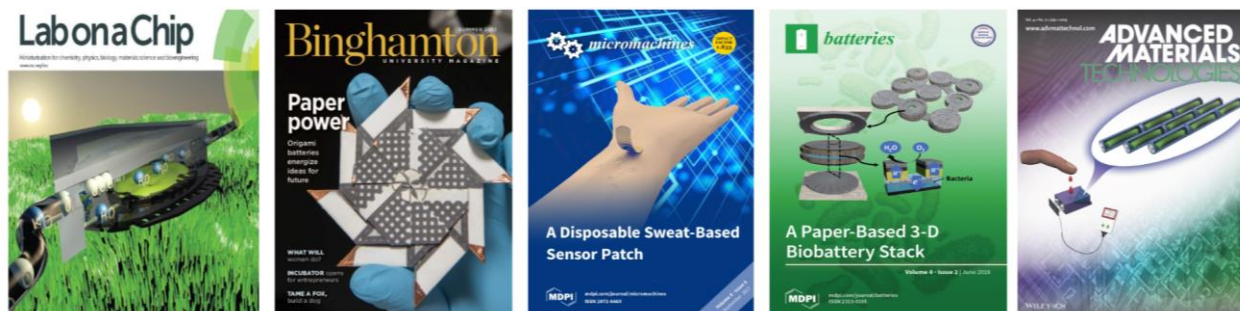
University Services

- Faculty Search Committee; ECE 2020 Fall
- IPC secretary for a tenure/promotion case Sep. 1, 2019 - Feb. 28, 2020
- Faculty Senate Sep. 1, 2018 - Aug. 31, 2020
- Watson School Committees Sep. 1, 2018 - Aug. 31, 2020
(Communications & Marketing – Chair; [Strategic Plans Development for 2020-2021](#))
- Mentor (ECE Tenure-Track Faculty Mentoring Program) Sep. 1, 2018 - Present
- Faculty Search Committee; Power Electronics 2017 Fall
- Faculty Search Committee; Power Electronics 2016 Fall
- Watson School Committees (Library) Sep. 1, 2014 - Aug. 31, 2016
- EECE Lab space Committee 2015 Fall
- Faculty Advisor for SUNY Chapter of Society Asian Scientists and Engineers (SASE) Sep. 1, 2012 - Present
- Serving as a director for Center for Research in Advances sensing Technologies & Environmental Sustainability (CREATES) Dec. 16, 2019 - Present
- Serving as an associate director for CREATES Feb. 1, 2016 - Dec. 15, 2019
- Faculty Member for Center for Autonomous Solar Power (CASP)
- Faculty Member for Biofilm Research Center (BBRC)
- Faculty Member Center of Biomufacturing for Regenerative Medicine (CBRM))

Synergistic Activities

- Supervised 1 student from NIRMA University in India through Summer 2019 Internship at BU.
- Co-organized “Science-to-Technology Day (S²T)” on Nov. 18, 2016. Keynote: Dr. Diane Okamoto (NSF).
- Supervised 1 undergraduate student (African-American Female) through 2017 LSAMP Summer Research Program.
- Supervised 1 student from Broome Community College through 2017 NSF Research Experiences for Undergraduates (REU) program for Renewable Energy Generation and Storage (NSF#1658990).
- Supervised 1 student from Queensborough Community College through 2015 NSF REU program for Renewable Energy Generation and Storage (NSF#1263004).
- Supervised 1 student (African-American Female) from Russel Sage College through 2014 NSF REU program for Renewable Energy Generation and Storage (NSF#1263004).
- Supervised 1 undergraduate student through 2014 McNair Summer Research Program.
- Supervised 1 undergraduate student through 2014 S3IP Undergraduate Research Initiative
- Supervised 1 undergraduate student through 2013 S3IP Undergraduate Research Initiative
- Offered Spring Undergraduate Bioenergy Research Program in 2020– supervised 1 undergraduate students.
- Offered Spring Undergraduate Bioenergy Research Program in 2019– supervised 2 undergraduate students.
- Offered Spring Undergraduate Bioenergy Research Program in 2018– supervised 2 undergraduate students.
- Offered Spring Undergraduate Bioenergy Research Program in 2017– supervised 4 undergraduate students.
- Offered Spring Undergraduate Bioenergy Research Program in 2016– supervised 5 undergraduate students.
- Offered Spring Undergraduate Bioenergy Research Program in 2015– supervised 7 undergraduate students.
- Offered Spring Undergraduate Bioenergy Research Program in 2014– supervised 6 undergraduate students.
- Offered Summer Undergraduate Bioenergy Research Program in 2013– supervised 3 undergraduate students.
- Offered Winter Undergraduate Bioenergy Research Program in 2012– supervised 9 undergraduate students.
- Offered Summer High School Research Program (2017) – supervised 2 high school students
- Offered Summer High School Research Program (2016) – supervised 1 high school student
- Offered Summer High School Research Program (2015) – supervised 1 high school student
- Offered Summer High School Research Program (2014) – supervised 1 high school student

■ **PUBLICATIONS** (>150 refereed publications, H-index: 29)



REFEREED JOURNAL ARTICLES:

2020

1. Y. Gao, J. Kim, J. Ryu, and **S. Choi**, “Additive Manufacturing of Living Electrodes,” *Journal of Microelectromechanical Systems*, In-print (**IF 2.5**) (*The Hilton Head 2020 Workshop Special Proceedings*)
2. J. Ryu, M. Tahernia, M. Mohammadifar, Y. Gao, and **S. Choi**, “Moisture-Responsive Paper Robotics,” *Journal of Microelectromechanical Systems*, In-print (**IF 2.5**) (*The Hilton Head 2020 Workshop Special Proceedings*)
3. J. Ryu, Y. Gao, J.H. Cho, and **S. Choi**, “A 1-D Yarn-based Biobattery for Scalable Power Generation in 2-D and 3-D Structured Textiles,” *Journal of Microelectromechanical Systems*, In-print (**IF 2.5**) (*The Hilton Head 2020 Workshop Special Proceedings*)
4. M. Tahernia, M. Mohammadifar, D.J. Hassett, and **S. Choi**, “A portable papertronic sensing system for rapid, high-throughput, and visual screening of bacterial electrogenicity,” *Biosensors and Bioelectronics*, 165, 112348, 2020 (**IF 10.3**)
5. M. Mohammadifar, M. Tahernia, J.H. Yang, A. Koh, and **S. Choi**, “Biopower-on-Skin: Electricity Generation from Sweat-Eating Bacteria for Self-Powered E-Skins,” *Nano Energy*, 75, 104994, 2020 (**IF 16.6**)
6. J.H. Cho, Y. Gao, J. Ryu, **S. Choi**, “A portable, disposable, paper-based microbial fuel cell sensor utilizing freeze-dried bacteria for in-situ water quality monitoring,” *ACS Omega*, 5 (23), 13940-13947, 2020 (**IF 2.9**)
7. M. Tahernia, M. Mohammadifar, Y. Gao, W. Panmanee, D.J. Hassett, and **S. Choi**, “A 96-Well High-Throughput, Rapid-Screening Platform of Extracellular Electron Transfer in Microbial Fuel Cells,” *Biosensors and Bioelectronics*, 162, 112259, 2020 (**IF 10.3**)
8. Y. Gao, J.H. Cho, J. Ryu, and **S. Choi**, “A Scalable Yarn-based Biobattery for Biochemical Energy Harvesting in Smart Textiles,” *Nano Energy*, 74, 104897, 2020 (**IF 16.6**)
9. M. Mohammadifar, M. Tahernia, and **S. Choi**, “A miniaturized, self-sustaining, and integrable bio-solar power system,” *Nano Energy*, 72, 104668, 2020 (**IF 16.6**) *This work was reported by News Break, AE-Daily, Pioneering Minds, Defense TechConnet, SUNY RF, etc.*
10. J. Ryu, M. Mohammadifar, M. Tahernia, H. Chun, Y. Gao, and **S. Choi**, “Paper Robotics: Self-folding, Gripping, and Locomotion,” *Advanced Materials Technologies* (A new sister journal of Advanced Materials), 5, 1901054, 2020 (**IF 6.0**) - *This work has appeared in Hot Topics: Robotics.*
11. M. Tahernia, M. Mohammadifar, and **S. Choi**, “Paper-supported High-throughput 3-D Culturing, Trapping, and Monitoring of *Caenorhabditis Elegans*,” *Micromachines*, Special Issue: 10th Anniversary of Micromachines, 11, 99 (Invited) (**IF 2.5**)
12. L. Liu, and **S. Choi**, “A Paper-based Biological Solar Cell” *SLAS Technology*, 25, 75-81 (Invited) (**IF 2.6**)

2019

13. J. Cho, Y. Gao, and **S. Choi**, “A Portable, Single-use, Paper-based Microbial Fuel Cell Sensor for Rapid, On-site, Water Quality Monitoring,” *Sensors*, 19, 5452, 2019 (**IF 3.0**)
14. M. Tahernia, M. Mohammadifar, D.J. Hassett, and **S. Choi**, “A fully disposable 64-well papertronic sensing array for screening electroactive microorganisms” *Nano Energy*, 65, 104026, 2019 (**IF 16.6**)
15. L. Liu, and **S. Choi**, “A Self-Charging Cyanobacterial Supercapacitor” *Biosensors and Bioelectronics*, 140, 11354, 2019 (**IF 10.3**)
16. M. Mohammadifar, and **S. Choi**, “A Solid Phase Bacteria-Powered Biobattery for Low-Power, Low-Cost, Internet of Disposable Things” *Journal of Power Sources*, 429, pp. 105-110, 2019 (**IF 8.2**) - *This work was reported by ScienceDaily, Newswise, Techexplore, Siliconrepublic, etc.*
17. M. Mohammadifar, M. Tahernia, and **S. Choi**, “An Equipment-free, Paper-based Electrochemical Sensor for Visual Monitoring of Glucose Levels in Urine” *SLAS Technology*, 24, 499-505, 2019 (Invited) (**IF 2.6**)

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18. Y. Gao, M. Mohammadifar, and **S. Choi**, “From microbial fuel cells to Biobatteries: Moving toward on-demand micro-power generation for Small-scale Single-Use Applications,” Progress Report (Invited), *Advanced Materials Technologies* (A new sister journal of Advanced Materials), 4, 1970039, 2019 (**IF 6.0**) (*Featured on the Inside Back Cover*)
 19. K.K. Lee, M. Kim, and **S. Choi**, “A whole blood sample-to-answer polymer lab-on-a-chip with superhydrophilic surface toward point-of-care technology,” *Journal of Pharmaceutical and Biomedical Analysis*, 162, pp.28-33, 2019 (**IF 3.3**)

2018

20. M. Mohammadifar, I. Yazgan, J. Zhang, V. Kariuki, O. Sadik, and **S. Choi**, “Green Biobatteries: Hybrid Paper-Polymer Microbial Fuel Cells,” *Advanced Sustainable Systems*, (A new sister journal of Advanced Materials), 2, 1800041, 2018. (**IF 4.9**) (*Top 10% the most Downloaded Articles from Wiley as of Apr. 2020*). *This work was reported by ScienceDaily, newswise, nanowork, Techxplore, ErekAlert, etc.*
21. Y. Gao and **S. Choi**, “Merging Electric Bacteria with Paper,” *Advanced Materials Technologies* (A new sister journal of Advanced Materials), 3, 1800118, 2018. (**IF 5.4**)
22. M. Mohammadifar and **S. Choi**, “On-demand Micro-power Generation from an Origami-inspired Paper Biobattery Stack,” *Batteries* (MDPI), 4, 14, 2018
23. I. Yazgan, J. Zhang, V. Kariuki, A. Akgul, L.E. Cronmiller, A. Akgul, F. Osonga, A. McMahon, Y. Gao, G. Eshun, **S. Choi**, and O. Sadik, “Selective sensing and Imaging of Penicillium italicum spores and hyphae using carbohydrate-lectin interactions,” *ACS Sensors*, 3, 648-654, 2018 (**IF 6.9**)
24. M. Mohammadifar, J. Zhang, I. Yazgan, O. Sadik and **S. Choi**, “Power-on-paper: Origami-inspired Fabrication of 3-D Microbial Fuel Cells,” *Renewable Energy*, 118, 695-700, 2018 (**IF 5.4**)
25. S. Pang, Y. Gao, and **S. Choi**, “Flexible and Stretchable Microbial Fuel Cells with Modified Conductive and Hydrophilic Textile,” *Biosensors and Bioelectronics*, 100, 504-511, 2018 (**IF 9.5**)
26. S. Pang, Y. Gao, and **S. Choi**, “Flexible and Stretchable Biobatteries: Monolithic Integration of Membrane-free Microbial Fuel Cells in a Single Textile Layer,” *Advanced Energy Materials*, 8, 1702261, 2018 (**IF 24.8**) - *This work was reported by ScienceDaily, Newswise, Techxplore, ErekAlert, etc.*

2017

27. L. Liu and **S. Choi**, “Self-sustainable, High-power-density Bio-solar Cells for Lab-on-a-chip Applications,” *Lab Chip*, 17, 3817-3825, 2017 (**IF 6.0**) - *This work was reported by Phys.ORG, ScienceDaily, Energy Harvesting Journal, Newswise, SolarDaily, ErekAlert, etc.*
28. E. Cho, M. Mohammadifar, and **S. Choi**, “A Single-use, Self-powered, Paper-based Sensor Patch for Detection of Exercise-induced Hypoglycemia,” *Micromachines*, VIP Feature Article (Invited), 8, 265, 2017 (**IF 2.2**) (*Featured on the Cover of Micromachines*) - *This work was reported by Phys.ORG, ScienceDaily, WAREABLE, Biospace, Crazyengineers, EurekaAlert, etc. This work has been selected as the best paper in 2018.*
29. Y. Gao, D. Hassett and **S. Choi**, “Rapid characterization of bacterial electrogenicity using a single-sheet paper-based electrofluidic array,” *Frontiers in Bioengineering and Biotechnology*, 5, 44, 2017 (**IF 5.1**)
30. M. Mohammadifar and **S. Choi**, “A Papertronics, On-demand and Disposable Biobattery: Saliva-activated Electricity Generation from Lyophilized Exoelectrogens pre-inoculated on Paper,” *Advanced Materials Technologies* (A new sister journal of Advanced Materials), 2, 1700127, 2017 (**IF 4.6**)- *This work was reported by New York State's Empire State Department, Smithsonian, Fox news, ScienceDaily, IFLScience, Popular Mechanics, Newswise, Electronics360, etc.*
31. L. Liu and **S. Choi**, “Self-sustaining, solar-driven bioelectricity generation in micro-sized microbial fuel cell using co-culture of heterotrophic and photosynthetic bacteria,” *Journal of Power Sources*, 348, 138-144, 2017 (**IF 6.9**) - *This work was reported by ScienceDaily, Sciencenewline, Phys.org, Electronicproducts, healthmedicinet, and azocleantech.*
32. W. Yang, K. Lee, and **S. Choi**, “A Laminar-flow based Microbial Fuel Cell Array,” *Sensors & Actuators: B. Chemical*, 243, 292-297, 2017. (**IF 5.7**)
33. Y. Gao and **S. Choi**, “Stepping Towards Self-powered Papertronics: Integrating Biobatteries into a Single Sheet of Paper,” *Advanced Materials Technologies* (A new sister journal of Advanced Materials), 2, 1600194, 2017 (**IF 4.6**) - *This work was reported by ScienceDaily, Sciencenewline, Newswise, Esciencenews, steemit, EurekaAlert, HitechDays and Smithsonian.*

2016

34. W. Yang, W. Xuejian, and **S. Choi**, “A Dual-channel, Interface-free, Bacteria-based Biosensor for Highly-Sensitive Water Quality Monitoring,” *IEEE Sensors*, 16, 8672-8677, 2016 (**IF 1.9**)
35. A. Fraiwan, H. Lee, and **S. Choi**, “A Paper-based Cantilever Array Sensor: Monitoring Volatile Organic Compounds with Naked Eye,” *Talanta*, 158, 57-62, 2016 (**IF 4.0**)

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36. A. Fraiwan, L. Kwan, and **S. Choi**, "A Disposable Power Source in Resource-limited Environments: A Paper-based Biobattery Generating Electricity from Wastewater," *Biosensors and Bioelectronics*, 85, 190-197, **2016 (IF 7.5)** - *This work was reported by NSF Science360 News, Discover-e, ScienceDaily, SpaceDaily, Science Newline, Innovation Toronto, Materialsgate, Arts Insiders, and e! Science News.*
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61. A. Friwan, S. Sundermier, D. Han, A. Steckl, D. J. Hassett, & **S. Choi**, "Challenges in Development and Operation of MEMS Microbial Fuel Cells," *Power MEMS 2012*, Dec. 2-5, 2012, Atlanta, USA, pp.383-386.
62. **S. Choi**, S. Mukherjee, S. Su, W. Panmanee, R.T. Irvin, and D.J. Hassett, "A 1.5 μ L Microbial fuel cell array for rapid screening of exoelectrogenic bacteria," *Hilton Head Workshop 2012: A Solid-State Sensors, Actuators and Microsystems Workshop*, June 3-7th, 2012, Hilton Head Island, SC, USA, pp. 169 – 172.
63. **S. Choi**, & J. Chae, " μ L-scale microbial fuel cell with optimal power generation and biofilm formation," *IEEE International Conference on Micro-Electro-Mechanical-Systems (MEMS)*, Jan. 29 - Feb. 3, 2012, Paris, France, pp. 43 – 46. (**Oral presentation**)
64. **S. Choi**, A. Lajevardi-Khosh & J. Chae, "Pattern generation of microfluidic-based biosensor to detect C-reactive protein using competitive protein adsorption," *The 16th International Conference on Solid-State Sensors, Actuators and Microsystems*, June 5-9th, 2011, Beijing, China, pp. 2223-2226.
65. **S. Choi**, & J. Chae, "A Series array of microliter-sized microbial fuel cell," *IEEE International Conference on Micro-Electro-Mechanical-Systems (MEMS)*, January 23-27th, 2011, Cancun, Mexico, pp.1289-1292.
66. **S. Choi**, H.-S. Lee, Y. Yang, B. E. Rittmann & J. Chae, "A High power density MEMS microbial fuel cell," *Hilton Head Workshop 2010: A Solid-State Sensors, Actuators and Microsystems Workshop*, June 1-5th, 2010, Hilton Head Island, SC, USA, pp. 82-85. (**Oral presentation**)
67. **S. Choi**, & J. Chae, "Thyroglobulin Detection Using Competitive Protein Adsorption," *IEEE International Conference on Micro-Electro-Mechanical-Systems (MEMS)*, January 24-28th, 2010, Hong Kong, China, pp. 887-890.
68. **S. Choi**, W. Xu, X. Zhang & J. Chae, "Characterization of a High-Q in-liquid Longitudinal-Mode Film Bulk Acoustic Resonator for Real-time In-situ monitoring of Competitive Protein Adsorption," *IEEE International Conference on Micro-Electro-Mechanical-Systems (MEMS)*, January 24-28th, 2010, Hong Kong, China, pp. 739-742.
69. **S. Choi**, & J. Chae, "A Simple Interfacial design of Biomolecules to nano/micro-devices for highly Sensitive and Selective Protein Detection," *ASME International Mechanical Engineering Congress & Exposition*, November 13-19th, 2009, Lake Buena Vista, Florida, pp. 811-814.
70. **S. Choi**, & J. Chae, "A Regenerative biosensing Surface Using Electrochemical Desorption of Self- assembled Monolayer in Microfluidics," *International Conference on Solid-State Sensors and Actuators (Transducers)*, June 21-25th, 2009, Denver, CO, pp.943-946.
71. **S. Choi**, & J. Chae, "Surface Plasmon Resonance Biosensor based on Vroman Effect: Towards Cancer Biomarker Detection," *15th IEEE International Mixed-Signals, Sensors, and Systems Test Workshop (IMS3TW'09)*, June 10-12th, 2009, Scottsdale, Arizona, no. 5158683.
72. **S. Choi**, & J. Chae, "A New Reconfigurable Biosensor Technique in a Microfluidic System," *IMAPS International Conference and Exhibition on Device Packaging*, March 9-12th, 2009, Scottsdale, Arizona, USA, pp. 2965-2989.
73. **S. Choi**, Y. Yang, & J. Chae, "A Real-time Protein Detector Utilizing the Vroman Effect on SAM-Functionalized Surfaces," *Hilton Head Workshop 2008: A Solid-State Sensors, Actuators and Microsystems Workshop*, June 1-5th, 2008, Hilton Head Island, SC, USA, pp. 138-141.
74. J. Heo, **S. Choi**, & I. Chung, "Characterization of Electrical Properties and Gating Effect of Single Wall Carbon Nanotube Field Effect Transistor," *The 11th Korean Conference on Semiconductors*, February 19-20th, 2004, Muju, Korea, PP. 169-172.

CONFERENCE/WORKSHOP/SEMINAR PRESENTATIONS:

1. Yang Gao, & **S. Choi**, "3-D Printed Conductive Bacterial Composite Films," *2019 MRS Fall Meeting and Exhibit*, Dec. 1st - 6th, Boston, MA, USA (**Oral presentation**)
2. Yang Gao, Jihyun Ryu & **S. Choi**, "A Yarn-based Microbial Fuel Cell," *2019 MRS Fall Meeting and Exhibit*, Dec. 1st - 6th, Boston, MA, USA (**Oral presentation**)
3. Jonghyun Cho, M. Tahernia, Y. Gao, & **S. Choi**, "A Portable, Single-use, Paper-based Microbial Fuel Cell Sensor for Rapid, On-site, Water Quality Monitoring," *2019 MRS Fall Meeting and Exhibit*, Dec. 1st - 6th, Boston, MA, USA (**Oral presentation**)
4. Jihyun Ryu, M. Tahernia, M. Mohammadifar, C. Hail & **S. Choi**, "A Water Activated Switch Using a Krigami-inspired Robotic Finger," *2019 MRS Fall Meeting and Exhibit*, Dec. 1st - 6th, Boston, MA, USA

5. Y. Gao, L. S. Thomas, M. R. Oefelein, L. C. Cook and **S. Choi**, "Electrogenic Capabilities of Gut Bacteria," *American Society for Microbiology (ASM) Microbe 2019*, June 20~24, 2019, San Francisco, CA, USA.
6. M. Mohammadifar, M. Tahernia, and S. Choi, "Electricity Generation from Sweat-Eating Bacteria," *American Society for Microbiology (ASM) Microbe 2019*, June 20~24, 2019, San Francisco, CA, USA.
7. M. Tahernia, M. Mohammadifar, **S. Choi**, "A 3-D multilayer paper printed circuit board," *The 30th Annual Electronics Packaging Symposium*, Sep. 18~19, 2018, Binghamton, NY, USA.
8. M. Tahernia, M. Mohammadifar, **S. Choi**, "Spray-coated PEDOT:PSS/Graphene Circuit Boards on Paper," *The 30th Annual Electronics Packaging Symposium*, Sep. 18~19, 2018, Binghamton, NY, USA.
9. Y. Gao and **S. Choi**, "A disposable microbial battery pack for point-of-care testing in resource-limited settings" *IEEE-NIH 2017*, Nov. 6-8, 2017, Bethesda, MD, USA.
10. M. Mohammadifar, and **S. Choi**, "A self-powered paper-based microbial sensor for lactate monitoring in sweat," *IEEE-NIH 2017*, Nov. 6-8, 2017, Bethesda, MD, USA.
11. **S. Choi**, "Powering Point-of-care Diagnostic Devices: On-demand Bio-Power Generation," 2nd Microfluidics Congress: USA, July 25th~26th, Philadelphia, USA, 2017
12. L. Kwan, A. Fraiwan and **S. Choi**, "A paper-based biofuel cell," NSF REU Program, July 30, Binghamton, NY, USA, 2015
13. T. Beebe, A. Fraiwan, and **S. Choi**, "A microfluidic platform for real time sensing and characterization of electroactive biofilms," NSF REU Program, July 30, Binghamton, NY, USA, 2014
14. J. Lu and **S. Choi**, "A micro-sized microbial fuel cell-based biosensor for fast and sensitive detection of toxic substances in water," McNair Summer Research Program, July 20, Buffalo, NY, USA, 2014
15. D. Han, **S. Choi**, D. Hassett, A. Steckle, "Porous Electrospun Nanofiber Membrane Electrode for Enhancing Power Density of Micro-sized MFC," *Advances in Microfluidics & Nanofluidics*, May 24-26, South Bend, Indiana, USA, 2013
16. S. Sundermier, A. Fraiwan and **S. Choi**, "Laminar Flow based microbial fuel cells," *Advances in Microfluidics & Nanofluidics*, May 24-26, South Bend, Indiana, USA, 2013

Previous – 2012 (Non SUNY Binghamton)

17. J. Chae, W. Xu, & **S. Choi**, "MEMS FBAR (Film Bulk Acoustic Resonator) for Real Time In-Situ Monitoring of Competitive Protein Adsorption," *IBE (The Institute of Biological Engineering) 2010 Annual conference*, March 4-6th, 2010, Cambridge, MA, USA
18. J. Chae & **S. Choi**, "Detecting a target molecule using competitive adsorption and exchange of proteins," *IBE, 2010 Annual conference*, March 4-6th, 2010, Cambridge, MA, USA
19. **S. Choi**, & J. Chae, "A New Protein Sensor Platform based on Competitive Protein Adsorption for Thyroglobulin Detection," *Design of Medical Devices Conference*, April 13-15th, 2009, Minneapolis
20. **S. Choi**, & J. Chae, "A Novel Reusable Vroman Effect-based Biosensor," *IEEE, Emerging Device and Packaging Technologies*, November 14th, 2008, Arizona State University, USA
21. **S. Choi**, J. Heo, & I. Chung, "Fabrication of Top gated Single-Walled Carbon Nanotube Field Effect Transistor Utilizing Scanning Probe Lithography," *AVS 50th International Symposium and Exhibition*, November 2-7th, 2003, Baltimore, USA.
22. **S. Choi**, J. Heo, D. Kim & I. Chung, "Properties of nano-size PZT grains determined by surface potential utilizing Kelvin Force Microscope," *7th International Conference on Atomically Controlled Surfaces*, Interfaces and Nanostructures, November 17-19th, 2003, Kyoto, Japan.

Others

Previous – 2012 (Non SUNY Binghamton)

Book :

1. **S. Choi**, "Advancing Microfluidic-Based Protein Biosensor Technology for Use in Clinical Diagnostics," *LAP LAMBERT Academic Publishing GmbH & Co. KG*, (ISBN 978-3-8465-5504-0), **2012**

Book Chapters:

1. **S. Choi**, & J. Chae, "A surface plasmon resonance biosensor based on competitive protein adsorption for the prognosis of thyroid cancer" in "Biosensors and Molecular Technologies for Cancer Diagnostics" Avi Rasooly (Program Director, Cancer Diagnosis Program, National Cancer Institute) and Keith E. Herold, *CRC Press (Taylor & Francis Group)*

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2. **S. Choi**, & J. Chae, “Microfluidic biosensors for thyroglobulin detection and application to thyroid cancer” in “Biosensors and Cancer” Professor Victor R Preedy (PhD DSc FRSPH FIBiol FRCPath, King’s College London), **SCIENCE PUBLISHERS**

Patent:

1. J. Chae & S. Choi, “REUSABLE BIOSENSOR PLATFORM,” - WO 2010088219
2. J. Chae, B.E. Rittmann, S. Choi, H. Lee, “Micro-sized Microbial fuel cell,” US 13153110

■ **INVITED TALKS**

1. Invited to give an online talk at **Temple University** (ECE Dept.), Dec. 2nd, 2020. (Title: Microorganisms to Generate Electricity)
2. Invited to give a talk at **North Carolina State University** (NSF ASSIST Center), Mar. 6th, 2020. (Title: Microscale Engineering to Electromicrobiology)
3. Invited to give talks at **2020 TMS Annual Meeting** (Feb. 23-27) in San Diego, USA (Functional Nanomaterials 2020: Translating Innovative into Pioneering Technologies) (Title: Biogenic Nanoparticles on Exoelectrogens)
4. Invited to give a **Keynote talk** on Biobatteries at **12th International Conference & Exhibition on Biosensors and Bioelectronics** (Oct. 25~26, 2019 at Vancouver, Canada) (Title: Powering Biosensors with Disposable Biobatteries)
5. Invited to **31th Annual Electronics Packaging Symposium - Small Systems Integration** (Sep. 5-6, 2019 in Niskayuna, NY, USA) (Title: Powering Papertronics and Fibertronics with Biobatteries)
6. Invited to **Science Foo Camp 2019** (July 12-14 in Mountain View, CA; Organized by Google, O'Reilly Media, and Digital Science) – Only 350 people are invited from around the world who are doing groundbreaking work in diverse areas of science and technology.
7. Invited to give talks at **2019 MRS Spring** (Apr. 22-26) in Arizona (Symposium EP05 - Engineering Functional Multicellular Circuits, Devices and Systems). (Title: Microorganisms to Generate Electricity)
8. Invited to give a talk at **Johns Hopkins University** (Extreme Materials Institute), Mar. 15th, 2019. (Title: Microscale Engineering to Electromicrobiology)
9. Invited to give a talk at **Stevens Institute of Technology** (ECE Department), Mar. 11th, 2019. (Title: Microscale Engineering to Electromicrobiology)
10. Invited to give a talk at **Tufts University** (ECE Department), Feb. 15th, 2019. (Title: Microscale Engineering to Electromicrobiology)
11. Invited to give a talk at **Princeton University** (Plasma Physics Laboratory), Jan. 16th, 2019. (Title: Microscale Engineering to Electromicrobiology)
12. Invited to give a talk at the **University of Rochester** (Department of Anesthesiology Grand Rounds), Dec. 20th, 2018. (Title: Micro- & Nano-medical Technologies and Applications)
13. Invited to give a talk at **IEEE NANOMED 2018**, Dec. 2-5, Hawaii, USA (Title: Powering point-of-care diagnostic devices with Disposable Biobatteries)
14. Invited to give a talk at **ACS Boston Symposium 2018**, Aug. 19-23, Boston, USA (Title: Merging Electronic Bacteria with Paper)
15. Invited to give a talk at **2018 MRS Spring**, Apr. 2-6, Phoenix, USA (Title: On-Demand Power Generation from Lyophilized Exoelectrogens)
16. Invited as a guest speaker for an interesting research seminar at the **University of New Hampshire** (Dept. of ECE), Nov. 17th, 2017.
17. Invited as a speaker for the Second Annual Summit on Science Enablement for the Sustainable Development Goals (sponsored by the **New York Academy of Sciences**), October 17th, 2017, New York, USA.
18. Invited as a speaker for the **18th US-KOREA Conference** on Science, Technology and Entrepreneurship (UKC), August 9-12, 2017, Washington DC, USA
19. Invited as a panelist for the **NSF Workshop on Papertronics: Paper-based Electronics for the 21st Century**, Sep. 12-14, 2016, Arlington, VA, USA
20. Invited as a panelist for SUNY 4E Workshop on Energy & Sustainability, Nov. 20-21, Binghamton, NY, USA, 2014
21. Invited as a speaker for the Center for Advanced Sensors and Environmental Systems (CASE) workshop, Mar. 22, 2013, Binghamton University, Binghamton, USA.
22. Invited as a speaker for the IEEC TAB meeting, Oct. 2, 2012, Binghamton University, Binghamton, USA.

■ GROUP HIGHLIGHTS (Media outlets)

1. Many news agencies highlighted our new research award from National Science Foundation for stretchable papertronic project. The media outlets include NEWSWISE, News Break, Sciencenewsnet, and many others. *June, 2020*
2. Our work on co-cultured biosolar cells has been highlighted in many media outlets including News Break, AE-Daily, Pioneering Minds, Defense TechConnet, SUNY RF and many others, *May, 2020*.
3. Many news agencies highlighted our work on solid-phase biobatteries for IoT. The media outlets include Materials today, Sciencedaily, Techxplore, NEWSWISE, and many others. *June. 2019*
4. Many news agencies highlighted our new research award from National Science Foundation for energy generation from human sweat. The media outlets include NEWSWISE, EurekAlert, SCIENMAG, The Engineer, and many others. *May, 2019*.
5. The work on “Paper biobatteries” has been highlighted in THE CONVERSATION. *Sep., 2018*.
6. Choi’s presentation at the ACS conference was highlighted in many news agencies including Chemical & Engineering News, ScienceDaily, IEEE Spectrum, etc. *Aug. 2018*.
7. Many news agencies highlighted our new research award from the Office of Naval Research for the micro-biophotovoltaics project. The media outlets include EurekAlert, Phys.ORG, Scienmag, NEWSWISE, and many others. *May, 2018*
8. Many news agencies highlighted our work on textile biobatteries. The media outlets include Materials today, Sciencedaily, Techxplore, NEWSWISE, and many others. *Jan.. 2018*
9. Many news agencies highlighted our work on the glucose sensor. The media outlets include Phys.ORG, Sciencedaily, Wearable, Biospace, and many others. *Sep. 2017*
10. Our saliva-based biobattery has been selected as one of 7 diagnostic devices to boost healthcare in the developing world (Medical Design & Outsourcing). *Aug. 2017*.
11. BU magazine featured our research group. *Aug. 2017*.
12. Many news agencies highlighted our work on saliva-based biobatteries published in Advanced Materials Technologies. The media outlets include Sciencedaily, Popular Mechanics, IFLScience, Electronics360, Foxnews, and many others. *Aug. 2017*.
13. Our high school student who worked in our lab during 2016 Summer won high awards in many research competition including Intel International Science & Engineering Fair (1st), Long Island Science & Engineering Fair (1st), New York State Science & Engineering Fair (2nd), Long Island Science Congress (Highest Honors), and WAC Lighting Foundation Invitational Science Fair (2nd).
14. New York State's Empire State Development highlighted our research group (<https://esd.ny.gov/esd-media-center/esd-blog/higher-ed-fuels-energy-innovation>). *Jun. 2017*.
15. A SUNY BU video clip featured our group’s work (biobatteries), *Mar. 2017* - <http://ws.binghamton.edu/choi/BU.html>
16. Many news agencies highlighted our work on biological solar cells published in Journal of Power Sources. The media outlets include Phys.org, Sciencedaily, ScienceNewsline, Electronicproducts, Healthmedicinet, and many others. *Mar. 2017*.
17. Our work was selected as a finalist paper for one of the best paper contests at the IEEE MEMS 2017.
18. Many news agencies highlighted our work on bacteria-powered battery on single sheet of paper published in Advanced Materials Technologies and IEEE MEMS 2017 Conference proceeding. The media outlets include Sciencedaily, Sciencenewsline, Newswise, Esciencenews, Eurekalert, Smithsonian, NSF news and many others. *Dec. 2016*.
19. We won best poster award at the “Science-to-Technology Day” 2016 Workshop (CREATES). *Nov. 2016*.
20. Our origami ninja star battery gained significant attention from the community and was reported on in media outlets, including NSF Science360 News, Discover-e, ScienceDaily, SpaceDaily, Science Newsline, Innovation Toronto, Materialsgate, Arts Insiders, and e-Science News. *Jun. 2016*.
21. Our Bio-solar panel was selected as the top 10 technologies shaping the future of solar power in Livemint News. *Jun. 2016*.
22. Our Bio-solar panel gained significant attention from the community and was reported on in media outlets, including ScienceDaily, ECN Magazine, NDTV.com, ZME Science, Siliconrepublic, CIOL, AZO Cleantech, The Stack, Crazy Engineers, The Engineer, Business Standard, Silicon India, Energy Matters, News Nation, Before it's New, New Energy and Fuel, Nature World News, Solar Energy News, and e! Science News. *Apr. 2016*.
23. Our high school student who worked in our lab during 2014 & 2015 Summer won the first place in the medicine and health category at WESEF 2016. *Mar. 2016*.
24. Our news articles were selected as the top story and the number two story for 2015 on Binghamton Research Discover-e. *Jan. 2016*.

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25. Our origami paper-based battery was selected as the top technology of "The Most Impressive Technologies of 2015" in Qmed Medical Product Manufacturing News. *Jul. 2015*.
 26. Our origami paper-based biofuel cell work was reported by Time Warner Cable News, Newsweek Europe, Electronics Weekly (UK), Dutch Magazine KIJK, BBC Focus Magazine, TreeHugger, ScienceDaily, IEEE Spectrum, Lab Maganer Magazine, Health News Digest, Digital Trend, and Discover-e Newsletter at Binghamton University. *Jul. 2015*.
 27. Our micro-sized bio-solar cell was reported by Materials 360 (MRS's online publication), Solar Novus Today, Pipe Dream News and Discover-e Newsletter at Binghamton University. *Feb. 2015*.
 28. Our micro-sized bio-solar cell was featured on the cover of Lab Chip Journal. *Oct. 2014*.
 29. "Ask a Scientist" Column posted on our article, "How does bio-fuel work?" *Mar. 2013*.

■ ADVISING AND MENTORING

1. Ph.D. students (Current)

1. Lin Liu (Fall 2016~Present): Bio-solar cells (Supported by ONR)
2. Jihyun Ryu (Spring 2019~Present): Soft Robotics & Biofuel Cells (Supported by ONR)
3. Anwar Elhadad (Fall 2020~Present): Biosolar cells (Supported by NSF)

-Ph.D. Alumni

1. Mehdi Tahernia (Sep. 2016~Aug. 2020)-*Adjunct Professor at the University of Texas at Permian Basin*
Dissertation: Papertronic Sensing Arrays for Rapid and High-throughput Screening of Electroactive Microorganisms
2. Maedeh Mohammadifar (Sep. 2015~May 2020)-*Tenure-Track Assistant Professor at the University of Texas at Permian Basin*
Dissertation: Biobatteries for Health and Environmental Monitoring
3. Yang Gao (Sep. 2015~ May 2020) - *Postdoc at the University of Texas at Austin*
Dissertation: Flexible and Stretchable Bacteria-Powered Biobatteries
4. Arwa Fraiwan (Sep. 2012~May 2016) – *Senior Research Associate at Case Western Reserve University*
Dissertation: A Paper-based Biofuel Cell for On-Chip Biosensors

2. M.S. students

-M.S. Alumni (Thesis)

1. Jonghyun Cho (2019~2020, BME): Ph.D. student at Rutgers University
Thesis: A Paper-based Microbial Fuel Cell Sensor for Water Quality Monitoring
2. Sumiao Pang (2016~2017, BME); Ph.D. student at the University of Maryland
Thesis: Flexible and Stretchable Microbial Fuel Cells
3. Weiyang Yang (2015~2016, ECE); Ph.D. student at Michigan State University
Thesis: A microbial fuel cell-based biosensor for water quality monitoring
4. Xuejian Wei (2015~2016, ECE); Engineer at Intelligent Automation
Thesis: μ L-scale biological solar cells
5. Gihoon Choi (2013~2015, ECE); Engineer at Sandia National Lab.
Thesis: A paper-based sensor array for electromicrobiology

-M.S. Alumni (Project)

1. Shuai Feng (2019~2020, ECE) – Project: Microbial Fuel Cells
2. Vishrut Vaman Shenoy (2019~2020, ECE) – Project: Antibiotic Susceptibility Test
3. Andrew T Barza (2019~2020, ECE) – Project: Biosensors for monitoring micro-plastics
4. Mohammed F Alyas (2018~2019, ECE) - Project: Drug delivery
5. Jason Ephraim (2018~2019, ECE, Engineer at Harris Corp.) - Project: Nanogenerator
6. Madhura R. Shanbhag (2016~2017, BME) - Project: 3-D culture systems for *C. elegans*
7. Mark Freithaler (2016~2017, ECE, Engineer at MACOM) – Project: Sweat-based microbial fuel cells
8. Kamil Roszkowski (2015~2016, ECE, Engineer at General Dynamics) – Project: Biofuel production in Microfluidics
9. Jiem Nguyen (2014~2015, ECE, Engineer at National Grid) – Project: UV LED-based photolithography systems
10. Shannon Rosario (2013~2014, ECE) – Project: A Lab-on-a-chip for circulating tumor cells

3. B.S. students

-B.S. Alumni (Selected)

1. Tharun Reddy Kandukuri (2020, ECE) – PH.D. student at University of Oxford
 2. Jinho Yoo (2019, BME) – B.S. student at USC
 3. Hail Chun (2019, ME) – Engineer at Protec, INC (Korea)
 4. Timothy S Kim (2017, ECE) - Engineer at National Security Agency
 5. Christopher Coogan (2016, BE) - PH.D. student at University of Minnesota
 6. Weiy Li (2016, ECE) - M.S. student at ETH Zurich
 7. Jiaqi Zhang (2015, ECE) - M.S. student at National University of Singapore
 8. Bonnie Tran (2014, ECE) - M.S. student at Columbia University
 9. WanChao Guo (2014, ECE) - Engineer at GE Aviation
 10. San Yoon (2014, Bio) - Medical Student at St. George's University
 11. Hankeun Lee (2014, ECE) – PH.D. student at UIUC
 12. Simeng Chen (2014, ECE) - PH.D. student at University of Colorado Boulder
 13. Chunhui Dai (2014, ECE) – Postdoc at UC Berkeley
 14. Thu Nguyen (2014, ECE) - PH.D. student at University of Waterloo
 15. Steven J. Sundermier (2013, ECE) - Engineer at BAE systems
- Advised more than 40 undergraduate students (since 2012)
 - More than 50% of them currently in pursuit of M.S. or Ph.D
 - About 25% of them - research fellowship/scholarship awardees
 - Co-authored more than 27 publications

4. NSF REU Program

1. Alexa Juran (2017 Summer) from Broome Community College
2. Landen Kwan (2015 Summer) from Queensborough Community College
3. Taneesha Beebe (2014 Summer) from Russel Sage College

5. Other Undergraduate Programs

1. Archita Kothari (2019 Summer): NIRMA University in India through Summer 2019 Internship at BU
2. Bryanna Brown (2017 Summer): Louis Stokes Alliance for Minority Participation (LSAMP) - M.S. student at Carnegie Mellon University
3. Junle Lu (2014 Summer): LAAMP/McNair Summer Research Program

6. High School Students

1. Dalton Peng (2017 Summer) from Mount Hebron High School
2. Kendra Zhang (2016 & 2017 Summer) from Jericho High School – won high awards in many research competitions including Intel International Science & Engineering Fair (1st), Long Island Science & Engineering Fair (1st), New York State Science & Engineering Fair (2nd), Long Island Science Congress (Highest Honors), and WAC Lighting Foundation Invitational Science Fair (2nd). (Currently student at Columbia University)
3. Chris Fischer (2014 Summer & 2015 Summer) from Briarcliff High School – won Arizona State University Sustainability Solutions Initiative Award (Currently student at the University of Pennsylvania)
4. Reed Walter (2011 Summer) from Loveland High School Biotechnology Program - ranked second in his class for the capstone competition (Currently student at Ohio State University)

➤ Awards/Fellowships/Scholarships of Students Supervised

1. Yang Gao – 2020 BU Graduate Student Excellent Award in Research
2. Maedeh Mohammadifar – 2019 Fall Graduate School Travel Grant
3. Yang Gao – 2019 Fall Graduate School Travel Grant
4. Maedeh Mohammadifar – 2019 BU Graduate Student Excellent Award in Research
5. Maedeh Mohammadifar – 2018 Department PHD Research Award
6. Do Hoon Yong – 2016 S3IP Undergraduate Research Initiative
7. Weiyang Yang – 2016 Department MS Research Award
8. Christopher G Coogan – 2015 Summer Scholars and Artists Scholarship
9. Gihoon Choi – 2015 Department MS Research Award
10. Arwa Fraiwan – 2015 Department PHD Research Award
11. Christopher G Coogan – 2015 Undergraduate Research Award
12. Kamil Roszkowski – 2015 Undergraduate Research Award

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13. Jun Myung Song – 2015 Undergraduate Research Award
 14. Erin E Small – 2015 Undergraduate Research Award
 15. Jiang Wu– 2015 Undergraduate Research Award
 16. Timothy S Kim – 2015 Undergraduate Research Award
 17. Weiye Li – 2015 Undergraduate Research Award
 18. Jiaqi Zhang– 2014 Undergraduate Research Award
 19. Jiaqi Zhang– 2014 S3IP Undergraduate Research Initiative
 20. Diandra Hassan– 2014 Summer Scholars and Artists Scholarship
 21. Chunhui Dai – 2014 Department BS Research Award
 22. Chunhui Dai – 2013 Undergraduate Research Award
 23. Chunhui Dai – 2013 Summer Scholars and Artists Scholarship
 24. Hankeun Lee– 2013 S3IP Undergraduate Research Initiative
 25. Arwa Fraiwan – 2013 Travel Support by the GSEU Professional Development Award

➤ **Other MS & PHD Committees**

1. Meysam Daeichin (ME) – 2020 PH.D. Committee (Outside examiner)
2. Ellie Plotkin-Kaye (BS) – 2020 Undergraduate Honors Thesis Committee
3. Ryan Cadwell (ECE) – 2020 M.S. Committee
4. Mark Pallay (ME) – 2020 PH.D. Committee (Outside examiner)
5. Duaa M Serhan (SSIE) – 2019 PH.D. Committee (Outside examiner)
6. Wuxiang Feng (ME, 2019~Present) PH.D. Committee
7. Huayan Wang (ME) – 2019 PH.D. Committee (Outside examiner)
8. Matthew S. Brown – (BME, 2018 ~ Present) PH.D. Committee
9. Ganesh Sainadh Gudavalli – (EE, 2018 ~ 2019) PH.D. Committee
10. Farshad Azadian – (EE, 2017 ~ Present) PH.D. Committee
11. Faruk Ballipinar – (EE, 2015 ~ Present) PH.D. Committee
12. Navjot Kaur Sidhu – (EE, 2014~2016) PH.D. Committee
13. Mikhail A Coloma – (EE, 2014~2017) PH.D. Committee
14. Robert Congdon (CHEM) – 2014 PH.D. Committee (Outside examiner)
15. Benjamin Heo (BME) – 2019 M.S. Committee
16. Youjoong Park (BME) – 2018 M.S. Committee
17. Avinav Verma (EE) – 2015 M.S. Committee
18. Sandeep Singh (EE) – 2015 M.S. Committee
19. William Marin (EE) – 2014 M.S. Committee