

LEE, CHI HWAN

Leslie A. Geddes Associate Professor of Biomedical Engineering and Mechanical Engineering, and by Courtesy, of Materials Engineering, Electrical and Computer Engineering, and Speech, Language, & Hearing Sciences at Purdue University

Adjunct Professor of Optometry at Indiana University
Adjunct Professor of Mechanical Engineering at Hanyang University, South Korea

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EDUCATION & TRAINING

BE	2006	Industrial Engineering	Ajou University, Suwon, South Korea
BS	2007	Mechanical Engineering	Illinois Institute of Technology, Chicago, IL
MS	2009	Mechanical Engineering	Stanford University, Stanford, CA
PhD	2013	Mechanical Engineering	Stanford University, Stanford, CA
Postdoc	2015	Materials Engineering	University of Illinois, Urbana, IL

**MS/PhD Advisor: Professor Xiaolin Zheng at Stanford University*

***Postdoc Advisor: Professor John A. Rogers at University of Illinois (Now at Northwestern University)*

PAST & CURRENT POSITIONS AT PURDUE UNIVERSITY

Assistant Professor	Aug. 2015 – Aug. 2021
Leslie A. Geddes Assistant Professor	Dec. 2020 – Aug. 2021
Leslie A. Geddes Associate Professor	Aug. 2021 – Aug. 2024
Leslie A. Geddes Professor	Aug. 2024 – Present

OTHER AFFILIATIONS AT PURDUE UNIVERSITY

Faculty Associate of Center for Implantable Bioelectronics	Aug. 2015 – Present
Faculty Associate of Center for Scalable Manufacturing	Aug. 2015 – Present
Faculty Associate of Birck Nanotechnology Center	Aug. 2015 – Present
Faculty Associate of Mi-Bio Center	Jun. 2018 – Present
Faculty Associate of Interdisciplinary Biomedical Sciences Program	Dec. 2019 – Present
Faculty Associate of Inflammation, Immunology and Infectious Disease Center	May 2020 – Present
Faculty Associate of Wear-X	Dec. 2020 – Present

CO-FOUNDER & ENTREPRENEURIAL ACTIVITIES

Scientific Advisor of Omniply Technologies, Inc. (Flexible Electronics)	Sep. 2018 – Present
Chief Technical Officer of Rescue Biomedical, LLC. (Opioid Overdose Care)	Aug. 2019 – Present
Chief Scientific Officer of BVS Sight, Inc. (Glaucoma Care)	Dec. 2022 – Present
Chief Technical Officer of Curasis, LLC. (Dysphagia Care)	Dec. 2018 – Oct. 2021 (Dissolved)

OTHER PROFESSIONAL APPOINTMENTS

Guest Editor of IEEE Transactions on Nanotechnology (TNANO)	Sep. 2017 – Sep. 2018
Visiting Professor at Los Alamos National Laboratory, Los Alamos, NM	Apr. 2018 – May 2018
Visiting Professor of Chemical Engineering at Korea University, Seoul, Korea	Jul. 2018 – Dec. 2018
Visiting Professor of Mechanical Engineering at Hanyang University, Seoul, Korea	Jan. 2021 – Dec. 2023

Editorial Board Member of Biomedical Sensors Section, Sensors	Sep. 2019 – Present
Adjunct Professor of Optometry at Indiana University, Bloomington, IN	Apr. 2020 – Present
Industry Advisory Board (IAB) Professor at Hanyang University, Seoul, Korea	Oct. 2021 – Present
Adjunct Professor of Mechanical Engineering at Hanyang University, Seoul, Korea	Jan. 2024 – Present
Advisory Board Member of NPG Asia Materials by Springer-Nature	Feb. 2024 – Present

AREAS OF EXPERT KNOWLEDGE

Wearable Healthcare Technologies | Tele-Medicine | Functional Soft Biomaterials | Stretchable Bioelectronics | Drug Delivery Systems | Microfabrication

LICENSE

Licensed Professional Engineer, Illinois Society of Professional Engineer, USA

MILITARY SERVICE

Republic of Korea Marine Corps (ROKMC), Sergeant Discharged from the 6th Marine Brigade, Baek-Ryeong Island (Northern Limit Line of West Coast), South Korea, Apr. 2001 – Jun. 2003

HONORS & AWARDS

2006 Tau Beta Pi, Engineering Honor Society
 2013 Graduate Student Silver Award, Materials Research Society (MRS)
 2013 Selected Research for FY 2012-13, Stanford University
 2013 Top Innovation Award, Technology Connect World National Innovation Summit
 2014 Best Talk Award, Postdoctoral Research Symposium, Beckman Institute
 2017 Faculty Award of Excellence, Preeminent Team Award, Purdue University
 2017 Faculty Summer Grant Award, Purdue University
 2018 Ralph W. and Grace M. Showalter Research Trust Award
 2018 Hanwha Advanced Materials Non-Tenure Faculty Award, Hanhwa Corp., South Korea
 2018 Seed for Success Acorn Award (Multimillion Funding in FY2017-18), Purdue University
 2018 Outstanding Engineering Teacher, Purdue University, Fall Semester
 2018 Purdue Engineering Faculty Conversation Research Award in Healthcare/Medicine
 2018 Highlighted Research Group for the Year of 2018, Purdue University
 2018 Selected for the Top 100 Science Spinoffs (Representing 2% Out of 8,000 Global Sciences)
 2019 National Institutes of Health (NIH) Trailblazer Award for New and Early Stage Investigators
 2019 Korean-American Scientists and Engineers Association (KSEA) Young Investigator Award
 2019 Ajouin Outstanding Professional Award, Ajou University, South Korea
 2019 Trask Innovation Fund Award, Purdue Office of Technology Commercialization (OTC)
 2020 Faculty Award of Excellence for Early Career Research, Purdue University
 2020 University Named Professorship, Leslie A. Geddes Endowment, Purdue University
 2020 Consumer Electronic Show (CES) Eureka Park Climate Change Innovator Award
 2020 Focus Award (For Dedication to Disability Accessibility and Diversity), Purdue University
 2020 Named One of the Most Impactful Faculty Inventors in FY2019-20, Purdue University and OTC
 2020 Ajou Leaders Honor Club Award, Ajou University, South Korea
 2020 Won a Start a SUD Startup Challenge, NIH National Institute of Drug Abuse (NIDA)
 2020 Vebleo Scientist Award, Materials Science, Engineering and Technology
 2021 Outstanding Engineering Teacher, Purdue University, Fall Semester
 2021 Sensors Young Investigator Award, Sensors
 2021 Editor's Award, Journal of Speech, Language, and Hearing Research, ASHA Journal Academy
 2021 Ross-Lynn Summer Grant Award, Purdue University
 2021 Top 1% of Scholars and Experts in Printing Area, Expertscape PubMed
 2022 Selected for the Editors' Highlights in Nature Communications – 50 Best Recent Papers in Area

2023 Named Most Impactful Faculty Inventor in FY2023 (Issued, Non-US Patents), Purdue University
 2023 Named Most Impactful Faculty Inventor in FY2023 (New Faculty Startups), Purdue University
 2023 Named Most Impactful Faculty Inventor in FY2023 (New License Signed), Purdue University
 2023 Best Reviewer Award, International Journal of Extreme Manufacturing, IOP Science

ONGOING RESEARCH GRANTS (TOTALING ~\$12.2M)

NIH NEI R01 (PI; 2021–26) | NIH NEI R01 (PI; 2024–29) | NSF CBET (PI; 2021–24) | Northwestern University Medicine Seed Grant (PI; 2024–25) | NIH NIBIB (Co-I; 2024–27) | NIH NIDA SBIR (Co-I; 2022–27) | Korea Institute of Industrial Technology (KITECH) (Co-I; 2024–25) | Korea Institute for Advancement of Technology (KIAT) (Co-I; 2024–29)

COMPLETED RESEARCH GRANTS (TOTALING ~\$26M)

AFOSR (PI; 2016–17) | AFOSR (PI; 2018–21) | AFRL (PI; 2017–18) | Eli Lilly and Company (PI; 2016–17) | Jackson Laboratory (PI; 2016–17) | Jackson Laboratory (PI; 2017–18) | Showalter Research Trust (PI; 2018–19) | Hanwha Advanced Materials (PI; 2018–19) | Korean–American Scientists and Engineers Association (KSEA) (PI; 2019–20) | Purdue SMART Printing Film (PI; 2016–17) | Eli Lilly and Company (Co-I; 2018–22) | AFOSR DURIP (Co-I; Equipment Award; 2021) | Purdue Engineering Faculty Conversation in Healthcare/Medicine (Co-PI; 2018–19) | Purdue CRS Conference Competition Winner (Co-PI; 2019–20) | Purdue Laboratory & University Core Facility Research Equipment Program (Co-PI; 2020) | Purdue Semester Abroad in Intercultural Learning Exploratory Grant (Co-PI; 2021) | Purdue Research Foundation Trask Innovation Fund (Co-PI; 2019–20) | Purdue SMART Printing Film (Co-PI; 2019–21) | Advanced Detection Technologies (Co-PI; 2020–21) | Study Away Intercultural Learning (SAIL) Grant (Summer 2022) | NIH NIBIB Trailblazer Grant (PI; 2019–22) | NSF CMMI (PI; 2019–22) | LANL CINT User Grant (Co-PI; 2022–23) | Study Away Intercultural Learning (SAIL) Grant (Spring 2023) | Eli Lilly and Company (Co-I; 2022–23) | AFRL/UES (PI; 2018–23)

TEACHING AT PURDUE

Spr. 2016	BME 495: Soft Bioelectronics (Developed)	Enrollment: 8	Evaluation: 4.9/5.0
Fall 2016	BME 305–01: Bioinst. Circ. & Meas. Princ.	Enrollment: 17	Evaluation: 4.7/5.0
Fall 2016	BME 305–02: Bioinst. Circ. & Meas. Princ.	Enrollment: 22	Evaluation: 4.7/5.0
Fall 2016	BME 305–03: Bioinst. Circ. & Meas. Princ.	Enrollment: 22	Evaluation: 4.6/5.0
Fall 2016	BME 305–04: Bioinst. Circ. & Meas. Princ.	Enrollment: 22	Evaluation: 4.7/5.0
Spr. 2017	BME 395: Prof. Dev. & Des. in BME	Enrollment: 78	Evaluation: 3.8/5.0
Fall 2017	BME 489: Senior Design Project Lab	Enrollment: 35	Evaluation: 3.7/5.0
Fall 2017	BME 490: Professional Element of Design	Enrollment: 75	Evaluation: 3.3/5.0
Fall 2017	BME 695: Inst. For Meas. (Team Teaching)	Enrollment: 7	Evaluation: 3.7/5.0
Fall 2018	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 22	Evaluation: 4.6/5.0
Spr. 2019	ME 263–104: Intro. ME Design, Inn., Entrep.	Enrollment: 24	Evaluation: 4.0/5.0
Spr. 2019	ME 263–109: Intro. ME Design, Inn., Entrep.	Enrollment: 15	Evaluation: 3.7/5.0
Spr. 2020	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 15	Evaluation: 4.8/5.0
Spr. 2020	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 8	Evaluation: 4.8/5.0
Fall 2020	BME 489: Senior Design Project Lab	Enrollment: 22	Evaluation: 4.5/5.0
Spr. 2021	BME 495: Soft Bioelectronics (Developed)	Enrollment: 17	Evaluation: 4.3/5.0
Fall 2021	BME 489: Senior Design Project Lab	Enrollment: 32	Evaluation: 4.5/5.0
Spr. 2022	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 16	Evaluation: 4.8/5.0
Spr. 2022	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 6	Evaluation: 4.5/5.0
Fall 2022	BME 489: Senior Design Project Lab	Enrollment: 38	Evaluation: 4.4/5.0
Spr. 2023	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 40	Evaluation: 4.9/5.0
Spr. 2023	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 11	Evaluation: 4.7/5.0

Fall 2023	BME 489: Senior Design Project Lab	Enrollment: 38	Evaluation: 4.4/5.0
Spr. 2024	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 58	Evaluation: TBD
Spr. 2024	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 13	Evaluation: TBD

TEACHING ABROAD

Sum. 2018, CBE 613: Electrochemical Engineering, Korea University, South Korea
 Win. 2020, ME 6017: Flexible Mechanoelectronics, Hanyang University, South Korea
 Sum. 2021, ME 6017: Advanced Manufacturing, Hanyang University, South Korea
 Sum. 2022, ME 6017: Biomechanical Devices, Hanyang University, South Korea
 Spr. 2023, BME 495: Study Abroad to South Korea, Purdue University
 Sum. 2023, ME 6017: Biomedical Devices for Human Healthcare, Hanyang University, South Korea
 Sum. 2023, ME 6017: AI in Biomedical Applications, Hanyang University, South Korea

INTERNATIONAL ENGAGEMENT & EDUCATION

1. Co-developed and led a Dual MS Degree Program in the Weldon School of Biomedical Engineering at Purdue University with Hanyang University in South Korea, 2022 – Present
2. Co-developed and led a Dual MS Degree Program in the School of Mechanical Engineering at Purdue University with Hanyang University in South Korea, 2022 – Present
3. Co-led a Study Abroad Program to bring a total of 12 undergraduate students to Seoul in South Korea, hosted by Hanyang University, for cultural experience and learning, Spring 2023
4. Co-led a Study Abroad Program to bring undergraduate students to Suwon in South Korea, hosted by Ajou University, for cultural experience and learning, May 2024

JUNIOR FACULTY MENTORING

Professor Matthew P. Ward in the Weldon School of Biomedical Engineering at Purdue (2022–)

GRADUATE STUDENT MENTORING (CURRENT GROUP MEMBERS)

Seokkyoon Hong (PhD BME; 2020–)	Yumin Dai (PhD MSE; 2021–)
Taewoong Park (PhD BME; 2021–)	Tianhao Yu (PhD ME; 2021–)
Junsang Lee (Postdoc, 2022–)	Ziheng Wang (PhD ME; 2022–)
Jinheon Jeong (PhD BME; 2023–)	Feiyang Li (PhD BME; 2024–)

FORMER GROUP MEMBERS | CURRENT POSITIONS

Dae Seung Wie (MS ME; 2015–17) | Research Scientist at Samsung Electronics
 Min Ku Kim (MS ME & PhD BME; 2015–21) | Assistant Professor at Hanyang University
 Musbiha Wali (MS BME; 2016–18) | TD Device Design Engineer at Intel
 Hyungjun Kim (Postdoc; 2016–19) | Assistant Professor at Kumoh National Institute of Technology
 Kaiming Fu (MS BME; 2017–18) | PhD Candidate at UC Davis
 Bongjoong Kim (PhD ME; 2017–21) | Assistant Professor at Hongik University
 Eun Kwang Lee (Postdoc; 2018–19) | Assistant Professor at Pukyong National University
 Linus Park (PhD ME; 2018–23) | Research Staff at Lam Research
 Kyunghun Kim (Postdoc; 2019–20) | Research Scientist at Samsung SAIT
 Heun Park (Postdoc; 2019–20; NRF Fellow Program) | Research Scientist at LG Innotek
 Taehoo Change (PhD MSE; 2019–23) | Research Staff at Intel
 Seul Ah Lee (PhD BME; 2020–23) | Research Staff at Intel
 Hanmin Jang (Postdoc; 2020–21) | Research Scientist at Samsung Electronics Semiconductor R&D
 Sena Hur (Lab Staff; 2020–21) | Health Administration Program at University of Illinois at Chicago
 Jinyuan Zhang (Postdoc; 2020–22) | Health Technologies R&D Engineer at Apple
 Byeong Guk Jeong (Postdoc; 2021–22) | Assistant Professor at Busan National University
 Seungse Cho (Postdoc; 2021–23) | Research Staff at Samsung Electronics

Jehwan Hwang (Postdoc; 2021–23) | Research Staff at Korea Photonics Technology Institute
Youngoh Lee (Postdoc; 2022–23) | Research Staff at Samsung Display

UNDERGRADUATE STUDENT MENTORING

Yueming Liu (BS ME, 2015–16) Shichen Xu (BS ME, 2015–16)
Sriram Boppana (BS BME, 2016–17) Ryan Matthew Preston (BS BME, SURF 2016–17)
Ryan Matthew Preston (BS BME, 2016–17) Soo Han Soon (BS BME, 2018–19)
Adam Rubinchik (2020 Summer Scholarship) Noah Mehringer (BS BME, 2021–22)
Joseph Bang (BS Bio, 2022–23) Kaitlyn Christensen (BS BME, 2022–23)
Sunland Gong (MD IU, 2022–23)

INTERNATIONAL STUDENTS MENTORING OR CO-ADVISING

Hanmin Jang at Hanyang University, Korea (PhD ME | 2016–20) | Now at Samsung Electronics
Heungsoo Lee at Hanyang University, Korea (PhD ME | 2017–18) | Now at KAERI
Yale Jeon at Hanyang University, Korea (PhD ME | 2018–20) | Now at Hyundai Motors
Jonghun Yi at Hanyang University, Korea (PhD ME | 2020–21) | Now at Hanyang University
Sunland Gong (Indiana University Medicine; 2021–23) | MD Candidate at Indiana University Medicine
Angelique Niyonagize at the University of Rwanda, Rwanda (MS BME | 2022–23)
Dieudonne Munana at the University of Rwanda, Rwanda (MS BME | 2022–23)
Esteban T. Jaramillo at the Universidad de Calda, Colombia (Externship | 2023–24)
Hayoung Jeong at Daegu Gyeongbuk Institute of Science and Technology, Korea (Externship | 2023–24)
Sunghwan Cho at Hanyang University, Korea (Dual MS Program | 2023–25)

LOCAL HIGHSCHOOL STUDENT MENTORING

Joshua Kim (West Lafayette Highschool, Sum 2022 & 2023) – Admitted to Northwestern University

GROUP VISITING SCHOLARS

1. Dong Rip Kim, Professor of Mechanical Engineering at Hanyang University in South Korea, June 2017 & July 2018 & Oct. 2019 & Jan. 2024
2. Taeghwan (Tag) Hyeon, Distinguished Professor of Seoul National University and the Director of Institute for Basic Science (IBS) Nanoparticle Research in South Korea, Aug.–Oct. 2021 & May–June 2022
3. Kyu-Tae Lee, Professor of Physics at Inha University in South Korea, Jan. 2024–Jan. 2025
4. Jeonghyun Kim, Professor of Electronic Convergence Engineering at Kwangwoon University in South Korea, Jan. 2024–Jan. 2025
5. Seokwon Kang, Professor of Automotive Engineering at Yeungnam University in South Korea, Sep. 2024–Oct. 2025

MENTEE AWARDS

2020 Geddes-Laufman-Greatbatch Outstanding Research Award, Min Ku Kim (PhD BME)
2020 Bottorff Graduate Fellowship Award, Linus Park (PhD ME)
2020 Materials Research Society (MRS) Best Oral Presentation Award, Min Ku Kim (PhD BME)
2020 Purdue University Focus Award, Min Ku Kim (PhD BME)
2020 Purdue University Focus Award, Bongjoong Kim (PhD ME)
2020 Purdue University Focus Award, Yeonsoo Park (MS ME)
2021 US KSEA-KUSCO Graduate Student Scholarship, Bongjoong Kim (PhD ME)
2021 Purdue Engineering Ross Fellowship Award, Hyunjin Lee, (PhD BME)
2021 Purdue Engineering Graduate Student Research Award, Bongjoong Kim (PhD ME)
2021 Purdue Engineering Graduate Student Research Award, Min Ku Kim (PhD BME)
2021 Indiana University Medical School Scholarship (IMPRS), Sunland Gong (IU Medicine)

2021 Korea NRF Global Frontier Scholarship, Byeong Guk Jeong (Postdoc BME)
2021 US Navy Armed Forces Health Professions Scholarship, Preston Tsang (UR BME)
2021 Editor's Award, Journal of Speech, Language, and Hearing Research, Min Ku Kim (PhD BME)
2021 Editor's Award, Journal of Speech, Language, and Hearing Research, Tae Hoo Chang (PhD MSE)
2021 Bottorff Graduate Fellowship Award, Seokkyoon Hong (PhD BME)
2021 Asan Graduate Scholarship, Hyunjin Lee (PhD BME)
2021 Art of Research Exhibit Best Microscopy Award, Hyunjin Lee (PhD BME)
2021 Art of Research Exhibit Best Microscopy Award, Linus Park (PhD ME)
2021 Moonshot Pitch Competition, Khanh Vy Hong Le (Purdue BME; CEO of Rescue Biomedical)
2021 Purdue Undergraduate Research Scholarship, Noah J Mehringer (UR BME)
2022 Purdue CoE Graduate Conference Travel Grant Award, Linus Park (PhD ME)
2022 IBSC Inaugural Symposium Award, Seul Ah Lee (PhD IBSC)
2022 Best Abstract Award in Purdue Undergrad Research Conference, Noah Mehringer (UR BME)
2022 Best Poster Awards, MRS Spring Meeting, Tae Hoo Chang (PhD MSE)
2022 Korea NRF Global Frontier Scholarship, Junsang Lee (Postdoc BME)
2023 A. H. Ismail Interdisciplinary Doctoral Research Travel Grant Award, Seul Ah Lee (PhD BME)
2023 Asan Graduate Scholarship, Linus Park (PhD ME)
2023 Ronald W. Dollens Graduate Scholarship in Life Sciences, Seokkyoon Hong (PhD BME)
2023 1st Place Winner at the DEBUT Challenge by NIH NIBIB, Senior Design Team (UG BME)
2024 Purdue CoE Recognition Award, Seokkyoon Hong (PhD BME)
2024 Asan Graduate Scholarship, Taewoong Park (PhD BME)
2024 Purdue Outstanding Graduate Research Award, Seokkyoon Hong (PhD BME)

THESIS COMMITTEES SERVED

Dae Seung Wie (MS ME, Graduated on May 2018) | Musbiha Wali (MS BME, Graduated on May 2018) | Jesse Somann (PhD BME, Graduated on Aug. 2018) | Kaiming Fu (MS ME, Graduate on May 2019) | Rachael Swenson (MS BME, Graduated on May 2019) | Lingbin Meng (PhD BME, Graduated on May 2019) | Cagla Kantarcigil (PhD SLHS, Graduated on May 2019) | Spencer Bunn (MS BME, Graduated on Aug. 2019) | Arvin Soepriatna (PhD BME, Graduated on Dec. 2019) | Hyunsu Park (PhD BME, Graduated on May 2020) | Behanam Sadri (PhD IE, Graduated on Oct. 2020) | Bongjoong Kim (PhD ME, Graduated on May 2021) | Min Ku Kim (PhD BME, Graduated on May 2021) | Ranajay Mandal (PhD BME, Graduated on Feb 2021) | Mandira Marambe (MS BME, Graduated on Aug. 2021) | Hojoong Roy Kim (PhD ChemE, Graduated on Dec. 2022) | Semih Akin (PhD ME, Graduated on Dec. 2022) | Linus Park (PhD ME, Graduated on May 2023) | Taehoo Chang (PhD MSE, Graduated on May 2023) | Angel Enriquez (PhD BME, Graduated on May 2023) | Jongcheon Lim (PhD BME, Graduated on Aug. 2023) | Jim Nolan (PhD BME, Graduated on Aug. 2023) | Hyun Jung Min (PhD ME, Graduated on Dec 2023) | Aguirre Cruz Gabriel (PhD MSE, Expected on May 2025) | Ke Chen (PhD Chem, Expected on May 2025) | Thomas Gabor (PhD ME, Expected on May 2025) | Shengjie Gao (PhD IE, Expected on May 2025) | Nolan Kirby Nolan III (PhD BME, Expected on May 2025) | Qian Qian (PhD ME, Expected on May 2025) | Liyuan Tan (PhD ME, Expected on May 2025) | Vineet Mohanty (PhD ME, Expected on May 2025) | Ya-Chiang Yu (PhD MSE, Expected on May 2025) | Jue Wang (PhD ME, Expected on May 2026) | Abbey Koneru (PhD MSE, Expected on May 2026) | Juan Camilo Mesa (PhD IE, Expected on May 2026) | Talha Ibn Mahmud (PhD ECE, Expected on May 2026) | Antonio Alvarez Valdivia (PhD ME, Expected on May 2026) | Yashwanth Ramesh (PhD MSE, Expected on May 2026) | Jaeyoung Park (PhD BME, Expected on May 2026)

EXTERNAL THESIS COMMITTEES SERVED

Hanmin Jang (PhD ME, Hanyang University, Graduated on Feb. 2019) | Heung Soo Lee (PhD ME, Hanyang University, Graduated on Feb. 2020) | Yale Jeon (PhD ME, Hanyang University, Graduated on Aug. 2021) | Jonghun Yi (PhD ME, Hanyang University, Graduated on Aug. 2022) | Junsung Bang

(PhD, MSE, Korea University, Graduated on Aug. 2023)

ISSUED PATENTS

1. C. H. Lee, D. Kim, X. Zheng, Environmentally-assisted technique for transferring devices onto non-conventional substrates, US Patent, Issued (4/11/14), US 8,815,707 & US 9,337,169 – Optioned to Tandem Launch Ventures
2. C. H. Lee, J. A. Rogers, L. Yin, X. Huang, C. Leal, D. Harburg, Materials, electronic systems and modes for active and passive transience, Nationalized Patent, Issued (5/11/21), US 10,154,592 & JP 6,561,368 & USP 2,984,912 & PCT/US 2014/033817 & HK 1221597 – Available for License
3. C. H. Lee, Novel technique for therapeutic contact lens system, US Patent, Issued (12/15/20), US 10,864,111 & Divisional Patent, 17/112,488 (67323) – Optioned to Boomerang Ventures
4. C. H. Lee, M. Kim, Humanlike smart electronic gloves for prosthetic and robotic controls, US Patent, Issued (5/11/21), US 11,000,082 (67752) – Available for License
5. C. H. Lee, B. Kim, Z. Ku, A. Urbas, Nanoassembly methods for producing quasi-three-dimensional nanoarrays, US Patent, Issued (12/6/22), US 11,518,675 & Continuation Patent, 18/061,052 (68567) – Available for License
6. C. H. Lee, Y. Yeo, D. Kim, Drug delivery devices and methods of fabrication and use therefor, US Provisional Patent (6/10/20), 63/037,127 & US Utility Patent (6/20/21), 17/344,362, US 11,793,982 (68893) – Available for License

NON-PROVISIONAL (UTILITY) PATENTS

1. C. H. Lee, G. Malandraki, US Provisional Patent (1/20/17), 62/595,345, 62/448,430, & US Utility Patent (1/22/18), 15/876,977 (67705 & 67542) – Available for License
2. C. H. Lee, D. Kim, US Provisional Patent (9/27/18), 62/737,210 & PCT Patent (9/27/19), PCT/US19/053464 & US Utility Patent (3/18/21), 17/277,427 (68049) – Available for License
3. C. H. Lee, US Provisional Patent (5/24/19), 62/852,865 & US Utility Patent (5/26/20), 16/883,427 (68615) – Available for License
4. C. H. Lee, B. Boudouris, US Provisional Patent (7/2/20), 63/047,899 & US Utility Patent (7/1/21), 17/365,734 (68805) – Optioned to Boomerang Ventures
5. C. H. Lee, US Provisional Patent, 62/853,756 (5/29/19), 62/854,421 (5/30/19) & PCT Patent (5/29/20), 17/613,804, PCT/US20/35074, Taiwan Patent (5/29/20), I740521 & US Utility (11/23/21), 17/613,804 (68430 & 68568) – Optioned to Tandem Launch Ventures
6. C. H. Lee, H. Kong, B. Kim, J. Lee, M. Kim, US Provisional Patent (8/31/20), 63/072,634 & US Utility Patent (8/31/21), 17/462,862 (69391) – Available for License
7. C. H. Lee, US Provisional Patent (9/21/20), 63/080,892 & PCT Patent (9/21/21), PCT/US21/51184 & US Utility Patent (1/23/23), 18/006,418 (67683) – Available for License
8. C. H. Lee, B. Kim, C. Goergen, K. Lee, US Provisional Patent (5/11/21), 63/186,942 & US Utility Patent (5/11/22), 17/742,186 (69211) – Available for License
9. C. H. Lee, Y. Paulus, D. Kim, US Provisional Patent (10/8/21), 63/253,686 & PCT Patent (10/10/22), PCT/US22/46184 (69581) – Available for License
10. C. H. Lee, B. Boudouris, P. Irazoqui, K. Kim, H. Kim, US Provisional Patent (10/29/21), 63/273,377 & PCT Patent (10/28/22), PCT/US22/48173 (69240 & 69099) – Optioned to Boomerang Ventures
11. C. H. Lee, B. Kim, J. Hwang, Z. Ku, A. Urbas, US Provisional Patent (10/22/21), 63/270,815 & US Utility Patent (10/21/22), 18/048,596 (69425) – Available for License
12. C. H. Lee, M. Jun, L. Couetil, T. Chang, S. Akin, US Provisional Patent (10/29/21), 63/273,534 & US Utility Patent (8/29/22), 17/823,021 (69583) – Available for License
13. C. H. Lee, N. Cho, Y. Hwang, M. Kim, US/Singapore Provisional Patent, 63/297,386 (1/7/22) & PCT International Patent, WO 2023/132794 A2, PCT/SG2023/050008 (69679) – Available for License

PROVISIONAL PATENTS

1. C. H. Lee, S. Cho, US Provisional Patent, 63/616,277 (70259)
2. C. H. Lee, D. Kim, L. Park, H. Kong, US Provisional Patent, 63/605,343 (69087 & 70300)
3. C. H. Lee, M. Kim, T. Chang, T. Park, C. Scherer, US Provisional Patent, Filed (69436) – Assigned to Eli Lilly and Company
4. C. H. Lee, H. Lee, J. Linnes, US Provisional Patent, Filed (69517) – Assigned to Eli Lilly and Company
5. C. H. Lee, S. Hong, US Provisional Patent, Filed (70249) – Assigned to Eli Lilly and Company
6. C. H. Lee, S. Hong, US Provisional Patent, Filed (D2023-0199 & 30611) – Assigned to Eli Lilly and Company
7. C. H. Lee, S. Hong, US Provisional Patent, Filed (D2024-0036 & 70363) – Assigned to Eli Lilly and Company
8. C. H. Lee, T. Chang, S. Akin, M. Jun, US Provisional Patent, Filed (70264) – New/Open
9. C. H. Lee, US Provisional Patent, Being Filed (69582) – New/Open
10. C. H. Lee, G. Malandraki, US Provisional Patent, Being Filed (68104) – Hold
11. C. H. Lee, H. Lee, M. Alam, US Provisional Patent, Being Filed (70019) – New/Open
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 83. H. Jang, M. Jeon, H. Lee, S. Jo, L. Park, B. Kim, **C. H. Lee**^{*}, D. Kim^{*}, Ultrasoft conductive patch with monolithically integrated porous elastomers for high-precision electrophysiological recording, submitted
 84. J. Xu, M. Fratus, J. Nolan, J. Lim, **C. H. Lee**, M. Alam, H. Lee, Impact of microelectrode geometry and surface finish on enzymatic biosensor performance, submitted
 85. S. Akin^{*}, T. Chang^{*}, Y. Kim, S. Xu, J. Lim, C. Nath, J. Tsai, J. Lee, H. Lee, W. Wu, **C. H. Lee**, M.

Jun, One-step manufacturing of functionalized electrodes on 3-D printed polymers for triboelectric nanogenerators, submitted

INVITED PUBLICATIONS

1. **C. H. Lee**, Smart assembly for soft bioelectronics, *IEEE Potentials*, 35, 4, 9 (2016)
2. E. Lee, **C. H. Lee**, Skin-mountable flexible needle patch for minimally invasive controlled drug delivery, *OnDrugDelivery*, 97, 22-25 (2019)
3. E. Lee*, M. Kim*, **C. H. Lee**, Skin-wearable biosensors and therapeutics: a review, *Annual Review of Biomedical Engineering*, 21, 299-323 (2019)
4. K. Kim*, B. Kim*, **C. H. Lee**, Printing flexible and hybrid electronics for human skin and eye-interfaced health monitoring systems, *Advanced Materials*, 32, 1902051 (2020)
5. H. Park*, W. Park*, **C. H. Lee**, Electrochemically active materials and wearable biosensors for in-situ analysis of body fluids for human healthcare, *NPG Asia Materials*, 13:23 (2021)
6. J. Zhang*, J. Lee*, J. Nolan, H. Lee*, **C. H. Lee***, Wearable and implantable medical devices for diagnosis and therapy of diabetes, *Advanced Healthcare Materials*, 2100194 (2021)
7. W. Park, **C. H. Lee***, Controlled buckling for scalable intracellular bioprobes, *Nature Nanotechnology*, 17, 222 (2022)
8. S. Cho*, T. Chang*, T. Yu, **C. H. Lee***, Smart electronic textiles for wearable sensing and display, *Biosensors*, 12, 4, 222 (2022)

INVITED & KEYNOTE LECTURES

1. University of Illinois at Urbana-Champaign (UIUC), Beckman Institute, Champaign, IL, Jan. 2014
2. Korea Advanced Institute of Science and Technology (KAIST), Department of Mechanical Engineering, Daejeon, South Korea, Oct. 2014
3. Korea Institute of Science and Technology (KIST), Seoul, South Korea, Oct. 2014
4. Korea University, Department of Materials Science and Engineering, Seoul, South Korea, Oct. 2014
5. Ulsan National Institute of Science and Technology (UNIST), Department of Chemical Engineering, Ulsan, South Korea, Oct. 2014
6. Korea University, Department of Environmental Engineering, Seoul, South Korea, Oct. 2014
7. Inha University, Department of Mechanical Engineering, Incheon, South Korea, Oct. 2014
8. University of Illinois at Urbana-Champaign (UIUC), Department of Mechanical Engineering, Champaign, IL, Nov. 2014
9. Nanyang Technological University (NTU), Department of Mechanical Engineering, Nanyang, Singapore, Feb. 2015
10. Georgia Institute of Technology, Department of Mechanical Engineering, Atlanta, GA, Feb. 2015
11. Arizona State University, Engineering of Matter, Transport and Energy, Phoenix, AZ, Mar. 2015
12. Purdue University, Birck Nanotechnology Center, West Lafayette, IN, Mar. 2015
13. University of Connecticut, Department of Mechanical Engineering, Storrs, CT, Apr. 2015
14. Purdue University, Department of Biomedical Engineering, West Lafayette, IN, Apr. 2015
15. Seoul National University, Department of Mechanical Engineering, Seoul, South Korea, Jul. 2015
16. Yonsei University, Department of Mechanical Engineering, Seoul, South Korea, Jul. 2015
17. Ajou University, Department of Molecular Science and Technology, Suwon, South Korea, Jul. 2015
18. Electronics and Telecommunications Research Institute (ETRI), Daejeon, South Korea, Jul. 2015
19. Chemical Heritage Foundation (CHF), 12th Annual Innovation Day, Philadelphia, PA, Oct. 2015
20. Purdue University, Department of Electrical Engineering, West Lafayette, IN, Dec. 2015
21. Purdue University, Honors College, West Lafayette, IN, Jan. 2016
22. University of Illinois at Urbana-Champaign (UIUC), Department of Mechanical Engineering,

- Urbana, IL, Oct. 2016
23. Worcester Polytechnic Institute (WPI), Department of Mechanical Engineering, Worcester, MA, Dec. 2016
 24. Northwestern University, Department of Biomedical Engineering, Evanston, IL, Jan. 2017
 25. Purdue University, Department of Biomedical Engineering, West Lafayette, IN, Feb. 2017
 26. Seoul National University, Department of Chemical Engineering, Seoul, South Korea, Jul. 2017
 27. Yonsei University, Department of Materials Sciences and Engineering, Seoul, South Korea, Jul. 2017
 28. Korea University, Department of Materials Sciences and Engineering, Seoul, South Korea, Jul. 2017
 29. Hanyang University, Institute of Nano Science & Technology, Seoul, South Korea, Jul. 2017
 30. Ajou University, Department of Mechanical Engineering, Suwon, South Korea, Jul. 2017
 31. Korea Institute of Industrial Technology (KITECH), Songdo, South Korea, Jul. 2017
 32. Air Force Research Laboratory (AFRL), Dayton, OH, Jul. 2017
 33. Purdue University, Institute for Drug Discovery, West Lafayette, IN, Oct. 2017
 34. Purdue University, College of Pharmacy, West Lafayette, IN, Oct. 2017
 35. Office of Technology Commercialization (OTC), West Lafayette, IN, Dec. 2017
 36. University of Notre Dame, Department of Electrical Engineering, Notre Dame, IN, Apr. 2018
 37. Los Alamos National Laboratory (LANL), Center for Integrated Nanotechnologies (CINT), Los Alamos, NM, May 2018
 38. University of Washington, Institute of Nano-engineered Systems, Seattle, WA, May 2018
 39. Hanwha Corporation, Hanwha Advanced Materials, Osong, South Korea, Jun. 2018
 40. Korea University, Department of Materials Science and Engineering, Seoul, South Korea, Jul. 2018
 41. Kyung Hee University, Department of Chemical Engineering, Yongin, South Korea, Jul. 2018
 42. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, Jul. 2018
 43. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, Jul. 2018
 44. Korea Institute of Science and Technology (KIST), Biomedical Institute, Seoul, South Korea, Jul. 2018
 45. Indiana University, Department of Optometry, Bloomington, IN, Aug. 2018
 46. Purdue University, Department of Health Sciences, West Lafayette, IN, Sep. 2018
 47. Samsung Advanced Institute of Technology (SAIT), Suwon, South Korea, Dec. 2018
 48. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, Dec. 2018
 49. University of Michigan Ann Arbor, Department of Materials Science and Engineering, Ann Arbor, MI, Apr. 2019
 50. Office of Technology Commercialization (OTC), West Lafayette, IN, Apr. 2019
 51. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, Jun. 2019
 52. Hanwha Advanced Materials, Osong, South Korea, Jun. 2019
 53. Nanyang Technological University (NTU), Department of Materials Sciences and Engineering, Singapore, Jun. 2019
 54. Samsung Advanced Institute of Technology (SAIT), Suwon, South Korea, Jun. 2019
 55. Yonsei University, Department of Electrical and Electronic Engineering, Seoul, South Korea, Jun. 2019
 56. Korea Electronics Technology Institute (KITE), Seongnam-Si, South Korea, Jun. 2019.
 57. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, Jun. 2019
 58. Purdue University, The 2019 Mi-Bio Summit on Flexible and Stretchable Bioelectronics, West Lafayette, IN, Jul. 2019

59. Purdue University, Department of Materials Engineering, West Lafayette, IN, Aug. 2019
60. Purdue University, Department of Biomedical Engineering, Guest Lecture on the Topic of “Technology Translation: Academic Research and Development with a Target Toward Clinical Use”, West Lafayette, IN, Aug. 2019
61. Michigan State University, Department of Biomedical Engineering, East Lansing, MI, Oct. 2019
62. Ohio State University, Department of Mechanical and Aerospace Engineering, Columbus, OH, Nov. 2019
63. Samyang Biopharmaceuticals Corp., Medical Device Research, Seongnam-Si, South Korea, Dec. 2019
64. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, Dec. 2019
65. Ajou University, Department of Materials Engineering, Suwon, South Korea, Jan. 2020
66. Indiana Clinical and Translational Sciences Institutes (CTSI) Retreat at Purdue University, Breakout Session of Wearable Technologies, West Lafayette, IN, Jan. 2020
67. Purdue University, Department of Materials Engineering, Guest Lecture on the Topic of “Introduction to Biomaterials”, West Lafayette, IN, Mar. 2020
68. NIH Director’s Pioneer Award Program (DP1) Finalist Invited Seminar (Virtual Meeting), Apr. 2020.
69. Nano Korea, Sensor and Actuator Session, Kintex, Ilsan, South Korea (Virtual Meeting), July 2020.
70. Microsystems and Nanoengineering (Springer Nature) Young Scientists Forum (Virtual Meeting), July 2020
71. Hanyang University, Global Talent Development Model, Seoul, South Korea (Virtual Meeting), July 2020
72. The US Air Force Office of Scientific Research (AFOSR) and the Korea National Research Foundation (NRF) Joint Workshop (Virtual Meeting), July 2020
73. International Science, Engineering and Technology Conferences & Webinars on Materials Science, Engineering and Technology by VEBLEO (Virtual Meeting), Sep. 2020
74. Purdue University, Birck Nanotechnology Center, West Lafayette, IN (Virtual Meeting), Oct. 2020
75. Ajou University, School of Business, Suwon, South Korea (Virtual Meeting), Apr. 2021
76. King’s College London, Nanomaterials and Biointerfaces, London, United Kingdom (Virtual Meeting), May 2021
77. The US Air Force Office of Scientific Research (AFOSR) and the Korea National Research Foundation (NRF) Joint Workshop (Virtual Meeting), June 2021
78. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea (Virtual Meeting), July 2021
79. Ajou University, Department of Materials Engineering, Suwon, South Korea (Virtual Meeting), July 2021
80. Ajou University, College of Pharmacy, Suwon, South Korea (Virtual Meeting), July 2021
81. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea (Virtual Meeting), July 2021
82. (Keynote Lecture) The 3rd Edition of Webinar on Nanotechnology (Virtual Meeting), Aug. 2021
83. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea (Virtual Meeting), Aug. 2021
84. Soongsil University, Department of Organic Materials and Fiber Engineering, Seoul, South Korea (Virtual Meeting), Aug. 2021
85. Dankook University, Department of Polymer Science and Engineering, Yongin, South Korea (Virtual Meeting), Aug. 2021
86. Kyung Hee University, Department of Information Display, Yongin, South Korea (Virtual Meeting), Aug. 2021
87. International Standardization Forum on Wearable Smart Devices, Korean Agency for Technology

- and Standards (KATS), Seoul, South Korea (Virtual Meeting), Nov. 2021
88. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea (Virtual Meeting), Dec. 2021
 89. Chonnam National University & Hanyang University Joint Symposium, Seoul, South Korea (Virtual Meeting), Jan. 2022
 90. Georgia Institute of Technology, Monie A. Ferst Medal Award Symposium, Atlanta, GA, Mar. 2022
 91. Sensors, Young Investigator Awardee Seminar, Basel, Switzerland (Virtual Meeting), Mar. 2022
 92. Boomerang Ventures, Indianapolis (Virtual Meeting), IN, Mar. 2022
 93. Pediatric Symposium with Riley Children's Health at Indiana University Medicine, Purdue University, IN, Apr. 2022
 94. K-BioX Global Class Seminar, Topic of Stem Cell, Microbiota Cancer, Bioengineering, Global Seminar (Virtual Meeting), June 2022
 95. The State University of New York (SUNY), Department of Mechanical Engineering, Songdo, South Korea, June 2022
 96. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, June 2022
 97. Seoul National University, IBS Center for Nanoparticle Research, Seoul, South Korea, June 2022
 98. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, June 2022
 99. Sungkyunkwan University, Department of Chemical Engineering, Suwon, South Korea, June 2022
 100. Hanyang University, Department of Bioengineering, Seoul, South Korea, June 2022
 101. Korea University, KU-KIST Graduate School of Converging Science and Technology, Seoul, South Korea, July 2022
 102. Ajou University, Department of Molecular Science and Technology, Suwon, South Korea, July 2022
 103. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, July 2022
 104. Nano Korea, Nanofabrication platform section, Kintex, Ilsan, South Korea, July 2022
 105. Yonsei University, Department of Biomedical Engineering, Wonju, South Korea, July 2022
 106. Chonnam National University, Advanced Medical Device Research Center for Cardiovascular Disease (RLRC Center), Gwangju, South Korea, July 2022
 107. Expert International Workshop, Hanyang University, Seoul, South Korea (Virtual Meeting), Aug. 2022
 108. 16 Tech: Indy's Innovation District, Indianapolis, IN, Oct. 2022
 109. Daegu Gyeongbuk Institute of Science and Technology (DGIST), Department of Robotics & Mechatronics Engineering, Series I, Daegu, South Korea (Virtual Meeting), Oct. 2022
 110. Daegu Gyeongbuk Institute of Science and Technology (DGIST), Department of Robotics & Mechatronics Engineering, Series II, Daegu, South Korea (Virtual Meeting), Nov. 2022
 111. (Distinguished Lecture) George Washington University, Department of Biomedical Engineering, Washington, DC, Nov. 2022
 112. (Keynote Lecture) 4th International Conference on Flexible Electronics (ICFE 2022), Hangzhou, China (Virtual Meeting), Dec. 2022
 113. Purdue University, Westwood (President's House) Lecture Series, West Lafayette, IN, Jan. 2023
 114. Korea Advanced Institute of Science and Technology (KAIST), Department of Mechanical Engineering, Daejeon, South Korea (Virtual Meeting), Feb. 2023
 115. Hanyang University & Chonnam National University Joint Symposium, Seoul, South Korea (Virtual Meeting), Feb. 2023
 116. Chonnam National University, Advanced Medical Device Research Center for Cardiovascular Disease (RLRC Center), Gwangju, South Korea (Virtual Meeting), Feb. 2023
 117. Purdue University, Industrial Engineering, West Lafayette, IN, Feb. 2023
 118. Goodman Campbell Brain & Spine and the Weldon School of Biomedical Engineering Joint

- Workshop, West Lafayette, IN, Apr. 2023
119. SMART Industry Day Consortium, Birck Nanotechnology Center, West Lafayette, IN, May 2023
 120. Samsung Display R&D Center, Yongin-Si, Korea, June 2023
 121. Ajou University, Department of Molecular Science and Technology, Suwon, South Korea, June 2023
 122. Ajou University, Department of Materials Engineering, Suwon, South Korea, June 2023
 123. Seoul National University Medicine, Seoul, South Korea, June 2023
 124. Daegu Gyeongbuk Institute of Science and Technology (DGIST), Graduate School of Robotics and Mechatronics Engineering, Daegu, South Korea, June 2023
 125. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, July 2023
 126. Pohang University of Science and Technology, Department of Convergence IT Engineering, Pohang, South Korea, July 2023
 127. Gwangju Institute of Science and Technology (GIST), Department of Biomedical Science & Engineering, Gwangju, South Korea, July 2023
 128. Korea University, Department of Materials Engineering, Seoul, South Korea, July 2023
 129. Yonsei University, Department of Electrical and Computer Engineering, Seoul, South Korea, July 2023
 130. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, July 2023
 131. Korea Institute of Industrial Technology (KITECH), Korea Additive Manufacturing Innovation Center (KAMIC), Siheung, South Korea (Virtual Meeting), Aug. 2023
 132. (Keynote Lecture) University of Illinois Urbana-Champaign (UIUC), Departments of Kinesiology and Community Health and Industrial and Enterprise Systems Engineering, Chittenden Symposium, Urbana, IL, Oct. 2023
 133. Purdue University, Department of Chemistry, Excellence on Campus Materials Chemistry Seminar Series, West Lafayette, IN, Feb. 2024
 134. Johnson & Johnson MedTech R&D, External Innovation Speaker Series, Raritan, NJ, Mar. 2024
 135. University of Nebraska-Lincoln, Department of Biomedical Engineering, Lincoln, NE, Oct. 2024

CONTRIBUTED CONFERENCE PRESENTATIONS

1. Materials Research Society (MRS), Title: Transfer printing method for flexible nanowire electronics, San Francisco, CA, Apr. 2011
2. Materials Research Society (MRS), Title: Fabricating nanowire electronics on nonconventional substrates using water-assisted transfer printing, Boston, MA, Nov. 2011
3. Materials Research Society (MRS), Title: Applications and mechanism study of peel-and-stick process for flexible/transparent thin film electronic devices, San Francisco, CA, Apr. 2013
4. National Innovation Summit and Showcase, Title: Fabricating of thin film electronics on nonconventional substrates, Washington, DC, May 2013
5. Materials Research Society (MRS), Title: Fabricating thin film solar cells on cheap and light weight substrates, Boston, MA, Dec. 2013
6. Materials Research Society (MRS), Title: Bioresorbable electronic implant for controlled drug delivery, Phoenix, AZ, Mar. 2016
7. IEEE Engineering in Medicine and Biology Society (EMBS), Title: Development of skin-like patch for thermotherapeutic treatment of joint pain, Orlando, FL, Aug. 2016
8. Society of Engineering Science (SES), 53rd Annual Technical Meeting, Title: Large-scale assembly of functional one-dimensional nanowires into skin electronics, University of Maryland, College Park, MD, Oct. 2016
9. The American Society of Mechanical Engineers (ASME), International Mechanical Engineering Congress & Exposition, Title: Development of bioresorbable electronics for biomedical applications, Phoenix, AZ, Nov. 2016

10. Collaborative Conference on Materials Research (CCMR), Title: Advanced biomedical devices enabled by transfer printing techniques, Jeju Island, South Korea, Jun. 2017
11. The 233rd Electrochemical Society (ECS) Meeting, Wearable and Flexible Technologies for Electronics and Photonics Symposium, Title: Wearable and flexible bio-electronics enabled by crack-driven transfer printing methods, Seattle, WA, May 2018
12. The 7th International Conference on Microelectronics and Plasma Technology (ICMAP), Title: Transfer printing processing technologies for fabricating flexible thin film electronics on arbitrary substrate, Incheon, South Korea, Jul. 2018
13. The 12th Institute of Electrical and Electronics Engineers (IEEE) International Conference on Nano/Molecular Medicine and Engineering (NanoMed), Title: Transfer-printed biosensors for wearable biomedical applications, Honolulu, Hawaii, Dec. 2018
14. IEEE International Flexible Electronics Technology Conference (IFETC), Title: Sticker-like electronics (Sticktronics) for wearable biomedical devices, Vancouver, Canada, Aug. 2019
15. US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Session: Smart Science, Engineering and Health for Livable Communities, Title: Mechanically reinforced flexible sensors for wearable applications, Chicago, IL, Aug. 2019
16. Materials Research Society (MRS), Title: Transfer printing of flexible, stretchable materials for sticker-like electronics in bio-integrated applications, Boston, MA (Virtual Meeting), Nov. 2020
17. Materials Research Society (MRS), Title: Defect-free assembly of quasi-three-dimensional plasmonic nanoarrays with arbitrary substrate materials and structures, Boston, MA (Virtual Meeting), Nov. 2020
18. Materials Research Society (MRS), Title: Skin-mountable submental sensor patch for remote management of patients with oropharyngeal swallowing disorders, Boston, MA (Virtual Meeting), Nov. 2020
19. The American Society of Mechanical Engineers (ASME), International Mechanical Engineering Congress & Exposition (IMECE), Track: Advanced Manufacturing, Title: Multiple replication of quasi-three-dimensional plasmonic nanoantennas with tailored optical properties, Nov. 2021 (Virtual Meeting)
20. The American Society of Mechanical Engineers (ASME), International Mechanical Engineering Congress & Exposition (IMECE), Track: Nanomaterials for Biomedical Electronic Devices and Medications in Healthcare, Title: Nanomaterials for ocular healthcare, Nov. 2021 (Virtual Meeting)
21. Materials Research Society (MRS), Title: Dual regime spray of functional nanomaterials for electronic textiles, Honolulu, HI, May 2022
22. Materials Research Society (MRS), Title: Biodegradable silicon nanoneedles for ocular drug delivery, Honolulu, HI, May 2022
23. US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Session: Biosensors & Medical Devices, Title: Biodegradable silicon nanoneedles for ocular drug delivery, Washington DC, Aug. 2022
24. Biomedical Engineering Society (BMES), Title: Monitoring dry eye disease and ocular surface inflammation with colorimetric scleral lens sensor, Seattle, Oct. 2023
25. Consumer Electronics Society (CES), Showcasing smart soft contact lenses for glaucoma care in Eureka Park, Las Vegas, NV, Jan. 2024
26. Glaucoma 360 New Horizons Forum, Title: Smart soft contact lenses for glaucoma care, San Francisco, Feb. 2024
27. Association for Research in Vision and Ophthalmology (ARVO), Title: Silicon nanoneedles for sustained treatment of choroidal neovascularization, Seattle, May 2024
28. 10th Nanotech & Nanomaterials Research Conference (Nano London-2024), Title: Silicon nanoneedles for sustained treatment of ocular angiogenesis, London, UK, Nov. 2024

SELECTED CONFERENCE PAPERS

1. C. Kantarcigil, **C. H. Lee**, M. Kim, B. Craig, G. Malandraki, First validation of a novel ultra-thin wearable electromyography sensors patch for monitoring submental muscle activity during swallowing, Dysphagia Research Society (DRS), San Diego, CA, Mar. 2019
2. S. Akin, T. Gabor, S. Jo, Y. Park, J. Tsai, **C. H. Lee**, M. Park, M. Jun, Dual regime spray deposition-based laser direct writing of metal patterns on polymer substrates, The 3rd World Congress on Micro and Nano Manufacturing, Raleigh NC, Sep. 2019

SERVICES TO PURDUE

1. BME Graduate Admission Committee (Fall 2015 – Fall 2016)
2. Purdue Summer Undergraduate Research Fellowship (SURF) Program (Summer 2016)
3. Birck Nanotechnology Center (BNC) Research Operations Committee (Fall 2016)
4. BME Image Facilities Committee (Fall 2016 – Spring 2020)
5. BME Graduate Committee (Fall 2016 – Spring 2020)
6. Purdue Korean Faculty Association (PKFA), Vice-Chairman (Fall 2016 – Spring 2021)
7. BME Faculty Search Committee (Fall 2017 – Spring 2018)
8. BME Awards Committee (Fall 2019)
9. ME Faculty Search Committee (Fall 2019 – Spring 2020)
10. Purdue Summer Stay Scholarship Program for Undergraduate Students (Summer 2020)
11. BME Self-Study Committee (Fall 2020)
12. BME Research Committee for Departmental Review (Fall 2020)
13. BME Head Search Committee (Fall 2020 – Spring 2021)
14. BME Undergraduate Committee (Fall 2020)
15. BME Instrumentation Area Co-Chair (Fall 2020 – Spring 2022)
16. BME Faculty Search Committee (Fall 2021 – Spring 2022)
17. IU Medical Scientist Training Program (MSTP) Admission Committee (Fall 2021 – Spring 2022)
18. BME Working Group for Courtesy Appointment (Spring 2022)
19. CoE Dean Search Committee (Fall 2022 – Spring 2023)
20. BME Faculty Search Committee (Fall 2022 – Spring 2023)
21. IUPUI-PWL Faculty Alignment Committee (Fall 2022)
22. BME Working Group for Teaching Assignment (Spring 2024)

-- *Current Service Roles* --

23. BME Head Search Committee (Fall 2023 – Spring 2024)
24. BME Instrumentation Area Chair (Spring 2022 – Present)
25. BME Award Committee Chair (Fall 2021 – Present)
26. Purdue Korean Faculty Association (PKFA), Chairman (Fall 2021 – Present)

SERVICES TO PROFESSIONAL ORGANIZATIONS

1. **Editorial/Advisory Board Member:** Sensors (Journal Impact Factor: 3.9) (Editorial Board Member, 2019 – Present) | IEEE Transactions on Nanotechnology (Journal Impact Factor: 2.875) (Guest Lead Editor, 2017-2018) | Biosensors and Bioelectronics (Journal Impact Factor: 12.6) (Guest Editor, 2023-24) | NPG Asia Materials (Journal Impact Factor: 9.7) (Advisory Board Member, 2024 – Present)
2. **Board Member:** Korean American Biomedical Engineering Society (KBMES) (2023 – Present)
3. **Grant Review Panelist:** Agency for Science, Singapore Technology and Research (A*STAR)'s Individual Research Grants and Young Individual Research Grants (2017) | American Chemical Society (ACS) Petroleum Research Fund (2018) | Los Alamos National Laboratory (LANL) Center for Integrated Nanotechnologies (CINT) User Proposal (2018, 2019) | NSF CMMI Advanced Manufacturing Program Unsolicited Proposal Review Panel (2019) | Peer Reviewed

Medical Research Program (PRMRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP) (2020) | SARS-COVID-19 Diagnostics & Therapeutics Initiative by Purdue Institute for Drug Discovery (PIDD) and Purdue Institute of Immunology, Inflammation, and Infectious Disease (PI4D) (2020) | Singapore National Research Foundation (NRF) (2021) | Brain Korea 21 (BK21) Program for Leading Universities & Students in the School of Mechanical Engineering at Hanyang University, External Reviewer in Annual Evaluation (2021) | NSF CAREER Award Proposal Review Panel (2021) | Singapore National Research Foundation (NRF) (2021) | NextFlex PC 7.0 Proposal Review Panel (2022) | NIH Bioengineering, Technology, and Surgical Sciences (BTSS) Study Section (2022) | Division of Engineering in National Research Foundation of Korea (NRF) Research Leader Program (2023)

4. **Purdue Conference Co-Organizer:** The 2019 Mi-Bio Summit on Flexible and Stretchable Bioelectronics at Purdue University with the invited plenary speakers, including Prof. Michael Cima (MIT), Prof. Younan Xia (Georgia Institute of Technology), Prof. Anne Andrew (UCLA), Prof. Elen Klein (University of Washington), Prof. Michael McAlpine (University of Minnesota), Prof. Yan Feng (Hong Kong Polytechnic University), Prof. Jong-Hyun Ahn (Yonsei University), Prof. Marvin Slepian (University of Arizona), Prof. Pete Kollbaum (Indiana University), Dr. Cephas Small (Nature Communication Editor), and Dr. Ilaria Cianchetta (Cell Press Editor).
5. **Purdue Workshop Co-Organizer:** The Purdue Korean Faculty Associate (PKFA) Distinguished Seminar Series at Purdue University with the invited plenary speakers, including Prof. Kinam Park (Purdue BME, Fall 2018), Prof. Yung Shin (Purdue ME, Spring 2019), Prof. Sangtae Kim (Purdue ChemE, Fall 2019), Prof. Hyeon Taeghwan (Guest Lecturer and University Distinguished Professor of Seoul National University and Director of Institute for Basic Science (IBS) Nanoparticle Research in South Korea, Fall 2021), Prof. Shawn Jang (Purdue HTM, Spring 2023), and Prof. You-Yeon Won (Purdue ChemE, Spring 2024).
6. **International Joint Symposium Co-Organizer:** The 1st international Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University and Hanyang University (July 2018) | The 2nd International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Michigan State University, Nanyang Technological University, and Hanyang University (Dec. 2019) | The 3rd International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, University of Illinois at Urbana-Champaign, Rensselaer Polytechnic Institute, University of Texas at Dallas, Nanyang Technological University, Chonnam National University, and Hanyang University. (Aug. 2021) | The 4th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Washington University in Saint Louis, Texas A&M University, University of Alberta, Nanyang Technological University, Chonnam National University, and Hanyang University (Dec. 2021) | The 5th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Michigan State University, University of Massachusetts Amherst, University of Wisconsin-Madison, Washington University in Saint Louis, Nanyang Technological University, and Hanyang University (June 2022) | Joint Symposium Between the Weldon School of Biomedical Engineering at Purdue University and the Institute for Basic Science (IBS) Nanoparticle Research at Seoul National University (June 2022) | The 6th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, University of Illinois at Urbana-Champaign, University of Wisconsin-Madison, Texas A&M University, Chonnam National University, and Hanyang University (July 2022) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the KU-KIST Graduate School of Converting Science and Technology at Korea University (July 2022) | Department of Molecular Science and Technology at Ajou University (July 2022) | Department of Mechanical Engineering at the State University of New York-SUNY Korea (July 2022) | Department of

- Chemical and Biological Engineering at Korea University (July 2022) | Department of Bioengineering at Hanyang University (July 2022) | Advanced Medical Device Center at Chonnam National University (July 2022) | Center for Nanoparticle Research at Seoul National University (July 2022) | The 7th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Ohio State University, Washington University in St. Louis, University of Wisconsin-Madison, Chonnam National University, and Hanyang University (July 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Molecular Engineering at Ajou University (June 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Robotics at Daegu Gyeongbuk Institute of Science & Technology (June 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Biomedical Engineering at Seoul National University (July 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Biomedical Engineering at Pohang University of Science and Technology (July 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Biomedical Engineering at Gwangju Institute of Science and Technology (July 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Materials Engineering at Korea University (July 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Electrical and Computer Engineering at Yonsei University (July 2023) | Joint Symposium of the Weldon School of Biomedical Engineering at Purdue University with the Department of Chemical and Bioengineering at Korea University (July 2023).
7. **International Conference Session Organizer:** The 2016 ASME International Mechanical Engineering Congress & Exposition (IMECE) in the areas of “Large-scale Manufacturing of 2D Materials” & “Mechanical Assembly and Characterization of 2D Materials”, Phoenix, AZ (2016) | The 2017 ASME International Mechanical Engineering Congress & Exposition (IMECE) in the areas of “Mechanics of Two-Dimensional Materials” & “Large-Scale Manufacturing of Two-Dimensional Materials”, Tampa, FL (2017); The 2018 Materials Research Society (MRS) Spring Meeting in the area of “Deformable Atomically-Thin Materials: Mechanics, Materials, and Devices”, Phoenix, AZ (2018) | The 2018 ASME International Mechanical Engineering Congress & Exposition (IMECE) in the area of “Manufacturing of Atomically-Thin, Two-Dimensional Materials”, Pittsburg, PA (2018) | The 11th World Biomaterials Congress (WBC) in the area of “Smart Photonic Biomaterials for Healthcare Applications”, Glasgow, Scotland (2020)
 8. **International Conference Session Chair:** The 7th International Conference on Microelectronics and Plasma Technology (ICMAP) in the area of “Flexible/Stretchable Display Technology”, Incheon, South Korea (2018) | The 12th IEEE International Conference on Nano/Molecular Medicine and Engineering (NanoMed), Honolulu, Hawaii (2018) | The 2019 Biomedical Engineering Society (BMES), Philadelphia, PA (2019) | The Indiana CTSI Retreat at Purdue University: “Engineering Giant Leaps in Medicine” in the session of Wearable Technologies, West Lafayette, IN (2020) | The 2020 Materials Research Society (MRS) Spring Meeting in the area of “Stretchable Electrodes and Electronics for bio-Integrated Applications”, Phoenix, AZ (2020) | The 11th World Biomaterials Congress (WBC) in the area of “Smart Photonic Biomaterials for Healthcare Applications”, Glasgow, Scotland (2020)
 9. **Reviewer for Scientific Journals:** Science (AAAS) | Science Advances (AAAS) | Research (AAAS) | Proceedings of the National Academy of Sciences (PNAS) | Nature Nanotechnology (NPG) | Nature Biomedical Engineering (NPG) | Nature Electronics (NPG) | Nature Communications (NPG) | NPG Asia Materials (NPG) | Microsystems & NanoEngineering (NPG) | Nano-Micro Letters (NPG) | npj Flexible Electronics (NPG) | NPG Digital Medicine (NPG) | Chemical Reviews (ACS) | ACS Nano (ACS) | Nano Letters (ACS) | Journal of the American Chemical Society (ACS) | ACS Applied Materials & Interfaces (ACS) | Accounts of Chemical

Research (ACS) | ACS Omega (ACS) | ACS Applied Polymer Materials (ACS) | ACS Sensors (ACS) | Journal of Controlled Release (Elsevier) | Extreme Mechanics Letters (Elsevier) | Materials Today (Elsevier) | Acta Biomaterialia (Elsevier) | Desalination (Elsevier) | Energy and Buildings (Elsevier) | Sensors and Actuators A: Physical (Elsevier) | Advanced Materials (Wiley) | Advanced Functional Materials (Wiley) | Advanced Healthcare Materials (Wiley) | Advanced Science (Wiley) | Small (Wiley) | Advanced Optical Materials (Wiley) | Medical Devices and Sensors (Wiley) | Advanced Electronic Materials (Wiley) | Advanced Materials Technologies (Wiley) | Small Methods (Wiley) | Advanced Intelligent Systems (Wiley) | Bioengineering & Translational Medicine (Wiley) | Nano Research (Springer) | Nano Convergence (Springer) | Nanoscale (RSC) | Analyst (RSC) | Journal of Materials Chemistry B (RSC) | Molecular Systems Design & Engineering (RSC) | IEEE Transactions on Biomedical Engineering (IEEE) | IEEE Transactions on Nanotechnology (IEEE) | IEEE on Automation Science and Engineering (IEEE) | IEEE Internet of Things Journal (IEEE) | Carbon (Elsevier) | Biosensors and Bioelectronics (Elsevier) | Sensors & Actuators: A. Physical (Elsevier) | Biocybernetics and Biomedical Engineering (Elsevier) | Applied Surface Science Advances (Elsevier) | Journal of Applied Mechanics (ASME) | Plos One (PLOS) | National Science Review (Oxford University Press) | International Journal of Extreme Manufacturing (IOP Science) | Nanomaterials (MDPI) | Applied Sciences (MDPI) | Micromachines (MDPI) | Materials (MDPI) | Sensors (MDPI) | Electronics (MDPI) | Sci (MDPI) | Applied Sciences (MDPI) | Rapid Reviews: COVID-19 (The MIT Press) | Clinical Ophthalmology (Dove Medical Press)

10. **Reviewer for Conference Abstracts:** The 2017 Biomedical Engineering Society (BMES) Annual Meeting in the area of “Device Technologies and Biomedical Robotics”, Phoenix, AZ (2017)

OTHER ENGAGEMENT & OUTREACH ACTIVITIES

1. The Career Forum Mock Interviewer for the 2016 Materials Research Society (MRS) Spring Meeting, Phoenix, AZ (2016)
2. The Career Forum Panelist for the Korean-American Scientists and Engineers Association (KSEA) Meeting, Indiana Chapter, West Lafayette, IN (2016)
3. Stanford Undergraduate Admission Interviewer for the Stanford Alumni Outreach Service, Stanford, CA (2017)
4. The Career Forum Panelist for the Symposium of Materials and Mechanics in the Midwest, Chicago, IL (2017)
5. The Career Forum Panelist for the Korean-American Scientists and Engineers Association (KSEA) Young Generation (YG), Indiana Chapter (2018)
6. Career Forum (Named “ProfeSSUL”) Panelist for the Korean-American Scientists and Engineers Association (KSEA) Young Generation (YG) at Purdue University, Indiana Chapter (Feb. 2020, Jan. 2021, Sep. 2021, Oct. 2022, Jan. 2023)
7. Mentor of the K-BioX Global Mentoring Project (2020 – Present)
8. Organizer for the Special Seminar entitled “How can we become an excellent researcher?” by Prof. Taeghwan (Tag) Hyeon, the University Distinguished Professor of Seoul National University and the Director of Institute for Basic Science (IBS) Nanoparticle Research in South Korea, for the Graduate Students, Postdoctoral Researchers, and Junior Faculty at Purdue University, Sep. 2021
9. Co-Leader of the Study Abroad Program at Purdue University which brings a total of 20 undergraduate students to South Korea for cultural experiences (Spring 2023).
10. Panelist for Brainstorming Session with Presidents Paul Alivisatos of the University of Chicago and Mung Chiang at Purdue University, along with College Deans, School Heads, and other faculty members, to brainstorm on opportunities for institutional collaborations within the themes of biomedical devices, medical imaging, cancer research, and semiconductors.
11. Invited mentor at the 2023 Scientists and Engineers Early Career Development (SEED) workshop, Dallas, TX (8/1/23-8/2/23)

12. Invited mentor at the 2024 Scientists and Engineers Early Career Development (SEED) workshop, San Francisco, CA (8/20/24-8/21/24)

SCIENTIFIC & PROFESSIONAL SOCIETIES

1. Member of Republic of Korea Marine Corps (ROKMC) Veterans Association
2. Member of Tau Beta Pi Honor Society
3. Member of Materials Research Society (MRS)
4. Member of American Society of Mechanical Engineers (ASME)
5. Member of Biomedical Engineering Society (BMES)
6. Member of Korean-American Scientists and Engineers Association (KSEA)
7. Member of Korean-American University Professors Association (KAUPA)
8. Member of Institute of Electrical and Electronics Engineers (IEEE)
9. Member of Ajou Leaders Honor Club (Ajou University, South Korea)
10. Board Member of Korean American Biomedical Engineering Society (KBMES)