



• Field	Bio-nano device engineering	• Office	College of Natural Sciences 7518
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## Education background

1983-1987 Korea Institute of Science and Technology Ph.D. - Department of Materials Science and Engineering)

1979-1983 Yonsei University (Bachelor of Science - Department of Ceramic Engineering)

## Major careers

2015 - 2016 Chairman of The 18th MEMS Conference

2014 - present Professor of the Department of Materials Science and Engineering, College of Engineering, Hallym University (Dean)

2014 - Professor of Department of the Materials Science and Engineering, College of Engineering, Hallym University (Dean)

2012-2013 Adjunct professor of the Department of Advanced Device Technology, University of Science and Technology

2011-2012 Adjunct professor of Department of Nano-convergence, Hanyang University

2006-2013 Team Leader of the Biosensor Research Team, the Electronics and Telecommunications Research Institute

2005-2007 Chairperson of Nano-Science & Technology, Korean Conference on Semiconductors

2004-2006 Program Committee Member of the IEEE Group IV Photonics Conference Program

2000-2005 Team leader of the New Functional Information Device Team, Electronics and Telecommunications Research Institute

1996-2000 Principal researcher of the Basic Research Lab., Electronics and Telecommunications Research Institute

1992-1994 Professor of the Department of Inorganic Materials Engineering, Korea Advanced Institute of Science and Technology

1989-1996 Senior researcher of the Department of Basic Technology Research, Electronics and Telecommunications Research Institute

1988-1989 Cornell University, Dept. of Materials Sci. & Eng., Post-Doc.

1987-1988 Postdoctoral researcher of the Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology

## Studies & Books

- Biosensors
- Tissue on a chip, Organ on a chip, Human on a chip
- BioMEMS for Artificial Organs
- Nano-bio sensors and platform system for POCT medical devices
- Materials, Devices, and Systems for ICT-based smart healthcare service

1. "Side-effect test of sorafenib using 3-D skin equivalent based on microfluidic skin-on-a-chip," Hye Mo Jeon, Kyunghee Kim, Kyung chan Choi, and Gun Yong Sung\*, *J. of Indust. and Eng. Chemistry*, (2019) Online available.
2. "Parylene-Coated Polytetrafluoroethylene-Membrane-Based Portable Urea Sensor for Real-Time Monitoring of Urea in Peritoneal Dialysate," Min Park, JeeYoung Kim, Kyounghee Kim, Jae-Chul Pyun and Gun Yong Sung\*, *Sensors*, 19, 4560, (2019).
3. "Recirculating peritoneal dialysis system using urease-fixed silk fibroin membrane filter with spherical carbonaceous adsorbent," Md. Tipu Sultana, Bo Mi Moon, Jae Won Yang, Ok Joo Lee, Soon Hee Kim, Ji Seung Lee, Young Jin Lee, Ye Been Seo, Do Yeon Kim, Olatunji Ajiteru, Gun Yong Sung, Chan Hum Park, *Materials Science & Engineering C*, 97, 55-66 (2019).
4. "Photoluminescence of Cerium Doped Si Nanocrystals Embedded in Silicon Nitride Films," Tres A. Harriman, Jung-Kun Lee, Gun Yong Sung, and Don A. Lucca, *Phys. Status Solidi B* 1800706 (2019).
5. "Development of wrinkled skin-on-a-chip (WSOC) by cyclic uniaxial stretching," Ho Yeong Lim, Jaewon Kim, Hyun Jeong Song, Kyunghee Kim, Kyung Chan Choi, Sungsu Park\*, and Gun Yong Sung\*, *J. of Indust. and Eng. Chemistry*, 68, 238-245 (2018).
6. "Fabrication of a urea biosensor for real-time dynamic fluid measurement," Kyunghee Kim, Jeongeun Lee, Bo Mi Moon, Ye Been Seo, Chan Hum Park, Min Park, and Gun Yong Sung\*, *Sensors*, 18, 2607 (2018).
7. "In vitro 3D skin model using gelatin methacrylate hydrogel," Bong Shin Kwak, Wonho Choi, Joong-won Jeon, Jong-In Won, Gun Yong Sung, Bumsang Kim, Jong Hwan Sung\*, *J. of Indust. and Eng. Chemistry*, 66, 254-261 (2018).
8. "Development of 3D skin-equivalent in a pump-less microfluidic chip," Hyun Jeong Song, Ho Young Lim, Wook Chun, Kyung Chan Choi, Tai-yong Lee, Jong Hwan Sung\*, Gun Yong Sung\*, *J. of Indust. and Eng. Chemistry*, 60, 355-359 (2018).
9. "Fabrication of a pumpless, microfluidic skin chip from different collagen sources," Hyun Jeong Song, Ho Young Lim, Wook Chun, Kyung Chan Choi, Jong Hwan Sung\*, Gun Yong Sung\*, *J. of Indust. and Eng. Chemistry*, 56, 375-381 (2017).
10. "Construction of 3D multicellular microfluidic chip for an in vitro skin model," Sojin Lee, Seon-Pil Jin, Yeon Kyung Kim, Gun Yong Sung, Jin Ho Chung, Jong Hwan Sung\*, *Biomed. Microdevices*. 19:22 (2017).
11. "Novel Fabrication method of the Peritoneal Dialysis Filter using Silk Fibroin with Urease Fixation System," Bo Mi Moon, Myung-Jin Choi, Md. Tipu Sultan, Jae Won Yang, Hyung Woo Ju, Jung Min Lee, Hyun Jung Park, Yr Ri Park, Soo Hyeon Kim, Dong Wook Kim, Min Chae Lee, Ju Yeon Jeong, Ok Joo Lee, Gun Yong Sung, and Chan Hum Park, *J. of Biomedical Materials Research B: Applied Biomaterials*. 105 (7), 2136-2144 (2017).
12. "Screening for Kidney Malfunction using Injection Moulded Plastic Urinalysis Cartridge," Jongcheol Hong and Gun Yong Sung\*, *Biochip Journal*, 10, 2, 111-117 (2016).
13. "Fabrication of nickel oxide nanostructures with high surface area and application for urease-based biosensor for urea detection," Hien Duy Mai, Gun Yong Sung\*, and Hyojong Yoo\*, *RSC Advances*, 5, 78807 - 78814 (2015).

14. "Selective preconcentration and online collection of charged molecules using ion concentration polarization," Jihye Choi, Keon Huh, Dustin Jaesuk Moon, Hyomin Lee, Seok Young Son, Kihong Kim, Hee Chan Kim, Jong-Hee Chae, Gun Yong Sung, Ho-Young Kim, Jong Wook Hong\* and Sung Jae Kim\*, RSC Advances, 5, 66178-66184, (2015).
15. "Optimization of thermoelectric power factors in 50 nm n- and p-type silicon nanowires with doping concentration," Soojung Kim, Jaehyeon Kim, Wonchul Choi, Gun Yong Sung\*, and Moongyu Jang\*, J. Kor. Phys. Soc., 66 (6) 947-951, (2015).
16. "Experimental Verification of Overlimiting Current by Surface Conduction and Electro-osmotic Flow in Microchannels," Sungmin Nam, Inhee Cho, Joonseong Heo, Geunbae Lim, Martin Z. Bazant, Dustin Jaesuk Moon, Gun Yong Sung\*, and Sung Jae Kim\*, Phy. Rev. Lett., 114 (11) 114501, 2015.
17. "Sub-10 nm transparent all-around-gated ambipolar ionic field effect transistor," Seing-Hyun Lee, Hyomin Lee, Tianguang Jin, Sungmin Park, Byung Jun Yoon, Gun Yong Sung, Ki-Bum Kim\*, and Sung Jae Kim\*, Nanoscale, 7 (3) 936-946 (2015).
18. "Rapid agglutination of whole blood by antiserum and its integration as a blood pretreatment module of dual function," Yo Han Choi, Jung Hoon Shin, Gun Yong Sung, Chang Beom Kim, Kwang Hyo Chung, Sensors and Actuator B: Chemical, 208, 450-456, (2015).
19. "Plasmonic waveguide ring resonators with 4 nm air gap and 2/15,000 mode-area fabricated using photolithography," Jaehak Lee, Juhee Song, Gun Yong Sung, and Jung Shin\*, Nano Letters, 14, 5533-5538, (2014).
20. "Sensitivity response to coating material thickness for an optical resonant reflective biosensor based on a guided mode resonance filter," Bong Kyu Kim, Kyung-Hyun Kim, Jongcheol Hong, Wan-Joong Kim, Hyunsung Ko, Chul Huh, Gun Yong Sung, Won Ick Jang, Sun Hee Park and Soo Jun Park, Biochip Journal, 8(1), 35-41, (2014).
21. "Overlimiting Current through Ion Concentration Polarization Layer: Hydrodynamic Convection Effects," Inhee Cho, Gun Yong Sung, and Sung Jae Kim\*, Nanoscale, 6, 4620-4626, (2014).

## | Others

- Academic activities

President of the Society of Micro and Nano Systems, Senior Vice President of the Korean BioChip Society, Member of the Korean Ceramic Society, the Materials Research Society of Korea, the Korean Physical Society, and the Korean Vacuum Society