

NANO KOREA 2020

July 1~3, KINTEX, Korea

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Nationality: Republic of Korea

EDUCATION

Saarland University, Germany	Dr.rer.nat	Chemistry	2001
Seoul National University, Korea	MS	Chemistry	1995
Seoul National University, Korea	BS	Chemistry	1994

PROFESSIONAL ACTIVITIES

- Professor, Dept. Materials Science and Engineering, Yonsei Univ. (2007.03 to Present)
- Editor-in-Chief, Biochip Journal (2018 to Present)
- Editor-in-Chief, Journal of the Korean Ceramic Society (2018 to Present)
- Associate Editor, Journal of Asian Ceramic Societies (2017 to Present)

AWARD AND HONORS

- KICET Academic Award (2019)
- KOSEF Academic Award (2018)
- LG-Yonam Research Award (2014)

MAIN SCIENTIFIC PUBLICATION

- Moon-Ju Kim, et al., *ACS Applied Materials and Interfaces* **11** (2019) 20509-20520.
- Moon-Ju Kim, et al., *Analytical Chemistry* **91** (2019) 11283-11290.
- Jong-Min Park, et al., *Analytical Chemistry* **91** (2019) 14719-14727.
- Moon-Ju Kim, et al., *Rapid communications in mass spectrometry* **33** (2019) 527-538.
- Mira Kim, et al., *ACS Applied Materials and Interfaces* **10** (2018) 33790-33802.

RESEARCH INTERESTS

- Protein engineering with surface display technology
- MALDI-TOF mass spectrometry based on nanomaterials
- Biosensors based on nanomaterials for medical diagnosis

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RECENT PUBLICATIONS (2018-2020)

1. Ji-Hong Bong, Tae-Hun Kim, Hyun-Woo Song, Min-Jung Kang, Joachim Jose, Jae-Chul Pyun, Refolding of autodisplayed anti-NEF scFv through oxidation with glutathione for immunosensor, *Biosensors and Bioelectronics* 102 (2018) 600-609.
2. Ga-Yeon Lee, Min-Park, Min-Jung Kang, Joachim Jose, Jae-Chul Pyun, A thermophoretic immunoassay based on autodisplayed Z-domains for the detection of C-reactive protein (CRP), *Sensors and Actuators B* 258 (2018) 1131-1137.
3. Min Park, J.C.Pyun, J.Jose, Orientation and density control of proteins on solid matters by outer membrane coating: Analytical and diagnostic applications, *Journal of Pharmaceutical and Biomedical Analysis* 147 (2018) 174-184.
4. Hong, Hyeonaug; Kim, Yong Jae; Han, Myungjin; Yoo, Gu; Song, Hyun Woo; Chae, Youngcheol; Pyun, Jae-Chul; Grossman, Arthur; Ryu, WonHyoun, Long-term Direct Extraction of Photosynthetic Electrons from Single Living Algal Cells by Horizontally-tilted Cantilever Nanoelectrode, *Nano Research* 11 (2018) 397-407.
5. Ga-Yeon Lee, Jun-Hee Park, Young Wook Chang, Sungbo Cho, Min-Jung Kang, and Jae-Chul Pyun, Chronoamperometry-based redox cycling for application to immunoassays, *ACS Sensors* 3 (2018) 106-112.
6. Yong Jae Kim, JaeHyoun Yun, Seon Il Kim, Hyeonaug Hong, Jun-Hee Park, Jae-Chul Pyun, WonHyoun Ryu, Scalable long-term extraction of photosynthetic electrons by simple sandwiching of nanoelectrode array with densely-packed algal cell film, *Biosensors and Bioelectronics* 117 (2018) 15-22.
7. Mira Kim, Jong-Min Park, Joo-Yoon Noh, Jo-Il Kim, Min-Jung Kang and Jae-Chul Pyun, Optimization of hydrothermal process for the fabrication of TiO₂ nanowire matrix chip for LDI mass spectrometry, *International Journal of Nanotechnology* 15 (2018) 598-610.
8. Hong-Rae Kim, Ju-Hee Im, Byoung-Gi An, Young Wook Chang, Min-Jung Kang, Jae-Gwan Park, Jae-Chul Pyun, Reproducibility in photosensitivity of in-situ synthesized cadmium sulfide nanowire photosensors, *International Journal of Nanotechnology* 15 (2018) 505-517.
9. Ga-Yeon Lee, Jun-Hee Park, Young Wook Chang, Min-Jung Kang, Sungbo Cho, Jae-Chul Pyun, Capacitive biosensor based on vertically paired electrode with controlled parasitic capacitance, *Sensors and Actuators B* 273 (2018) 384-392.
10. Mira Kim, Jong-Min Park, Joo-Yoon Noh, Min-Jung Kang, and Jae-Chul Pyun, Peptide sequencing with MALDI-TOF mass spectrometry based on TiO₂ nanowires from wet-corrosion synthesis, *ACS Applied Materials and Interfaces* 10 (2018) 33790-33802.
11. Yong Jae Kim, JaeHyoun Yun, Seon Il Kim, Hyeonaug Hong, Jun-Hee Park, Jae-Chul Pyun, WonHyoun Ryu, Scalable long-term extraction of photosynthetic electrons by simple sandwiching of nanoelectrode array with densely-packed algal cell film, *Biosensors and Bioelectronics* 117 (2018) 15-22.
12. 박종민, 조주윤, 김문주, 변재철, 나노물질을 이용한 질량분석 기술 개발동향, *세라미스트지* 21 (2018) 249-269.
13. Bo Jin, Ga-Yeon Lee, ChanOh Park, Donghoon Kim, Wonyeong Choi, Jae-Woo Yoo, Jae-Chul Pyun, Jeong-Soo Lee, Electrical Characteristics and pH Response of Parylene-H Sensing Membrane in Si-Nanonet Ion-Sensitive Field-Effect Transistor, *Sensors* 18 (2018) 3892-3899.
14. Daseul Jeon, Jae-Chul Pyun, Joachim Jose and Min Park, A Regenerative Immunoaffinity Layer Based on the Outer Membrane of Z-Domains Autodisplaying E. coli for Immunoassays and Immunosensors, *Sensors* 18 (2018) 4030-4041.
15. Moon-Ju Kim, Tae Gyeong Yun, Jaeyong Jung, Jong-Min Park, Joo-Yoon Noa, Jungsik Song, Min-Jung Kang, Jae-Chul Pyun, Nanostructured TiO₂ materials for the analysis of crystals from gout and pseudo-gout patients using laser desorption/ionization time-of-flight (LDI-ToF) mass spectrometry, *Analytical Chemistry* 91 (2019) 11283-11290.
16. Moon-Ju Kim, Tae Gyeong Yun, Jong-Min Park, Joo-Yoon Noh, Min-Jung Kang, Jae-Chul Pyun, Synergistic effect of heterostructure of Au nanoislands on TiO₂ nanowires for efficient ionization in laser desorption/ionization (LDI) mass spectrometry, *ACS Applied Materials and Interfaces* 11 (2019) 20509-20520.
17. Jong-Min Park, Joo-Yoon Noh, Moon-Ju Kim, Tae Gyeong Yun, Min-Jung Kang, Sang-Guk Lee, Kyung Soo Chung, Ku Nam Su, Sohee Yoon, Moo Suk Park, Jae-Chul Pyun, Medical diagnosis of sepsis by using a parylene-matrix chip, *Analytical Chemistry* 91 (2019) 14719-14727.

NANO KOREA 2020

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18. Ga-Yeon Lee, Ji-Hong Bong, Gu Yoo, Ji Yun Kim, Min Park, Min-Jung Kang, Joachim Jose, Jae-Chul Pyun, Thermophoretic diagnosis of autoimmune diseases based on Escherichia coli with autodisplayed autoantigens, *Analytica Chimica Acta* 1055 (2019) 106-114.
19. Ji-Yun Kim, Ji-Hong Bong, Ga-Yeon Lee, Min-Jung Kang, and Jae-Chul Pyun, Separation of anti-lipopolysaccharide (LPS) antibodies from human serum for fluorescence immunoassays of *E. coli*, *Biosensors and Bioelectronics* 126 (2019) 518-528.
20. Jun-Hee Park, Zhiquan Song, Ga-Yeon Lee, Min-Jung Kang, and Jae-Chul Pyun, Highly N-doped silicon carbide (SiC) electrode for enzyme-linked immunosorbent assay (ELISA), *Analytica Chimica Acta* 1073 (2019) 30-38.
21. Chanyong Park, Hong-Rae Kim, Soo-Kyung Kim, In Kyung Jeong, Jae-Chul Pyun, and Sungsu Park, Three-Dimensional Paper-Based Microfluidic Analytical Devices Integrated with a Plasma Separation Membrane for the Detection of Biomarkers in Whole Blood, *ACS Applied Materials and Interfaces* 11 (2019) 36428-34434.
22. Binh Nguyen, Jae-Chul Pyun, Sang-Guk Lee, Min-Jung Kang, Identification of new binding proteins of focal adhesion kinase using immunoprecipitation and mass spectrometry. *Scientific Reports* 9 (2019) 12908-12922.
23. Moon-Ju Kim, Jong-Min Park, Joo-Yoon Noh, Min-Jung Kang, Jae-Chul Pyun, Gold-Nanoparticle-coated Magnetic Beads for Sample Concentration and Ionization for Laser Desorption / Ionization (LDI) Mass Spectrometry *Rapid communications in mass spectrometry* 33 (2019) 527-538.
24. Hyun-Woo Song, Gu Yoo, Ji-Hong Bong, Min-Jung Kang, Seung Seo Lee and Jae-Chul Pyun, Surface display of sialyltransferase on the outer membrane of *Escherichia coli* and ClearColi, *Enzyme and microbial technology* 128 (2019) 1-8.
25. Somasekhar R. Chinnadayala, Jinsoo Park, Young Hyo Kim, Seong Hye Choi, Sang-Myung Lee, Won Woo Cho, Ga-Yeon Lee, Jae-Chul Pyun and Sungbo Cho, Electrochemical Detection of C-Reactive Protein in Human Serum Based on Self-Assembled Monolayer-Modified Interdigitated Wave-Shaped Electrode, *Sensors* 19 (2019) 5560-5575.
26. Min Park, JeeYoung Kim, Kyounghee Kim, Jae-Chul Pyun, Gun Yong Sung, Parylene-Coated PTFE-Membrane-Based Portable Urea Sensor for Real-Time Monitoring of Urea in Peritoneal Dialysate, *Sensors* 19 (2019) 4560-4572.
27. Hong-Rae Kim, Byoung-Gi An, Young Wook Chang, Min-Jung Kang, Jae-Gwan Park, Jae-Chul Pyun, Characterization of *in-situ* synthesized CdS_xSe_{1-x} ternary alloy nanowire photosensor, *Journal of Korean Ceramic Society* 56 (2019) 308-316.
28. Hong-Rae Kim, Byoung-Gi An, Young Wook Chang, Min-Jung Kang, Jae-Gwan Park, and Jae-Chul Pyun, Double passivation of *in-situ* synthesized cadmium sulfide nanowire photosensor for chemiluminescent immunoassays, *Enzyme and microbial technology* 133 (2020) 10457-10464.
29. Dongkyu Kang, Seok Lee, Heewon Shin, Jae-chul Pyun, Joonseok Lee, An efficient NIR-to-NIR signal-based LRET system for homogeneous competitive immunoassay, *Biosensors and Bioelectronics* 150 (2020) 111921 - 111927.
30. Ga-Yeon Lee, Ji-Hong Bong, Min-Jung Kang, Joachim Jose, Jae-chul Pyun, Application of a thermophoretic immunoassay in the diagnosis of Lupus using outer membrane particles from *E. coli*, *Biosensors and Bioelectronics* (2020) Accepted.
31. Jong-Min Park, Moon-Ju Kim, Joo-Yoon Noh, Tae Gyeong Yun, Min-Jung Kang, Sang-Guk Lee, Byong Chul Yoo, Jae-Chul Pyun, Simultaneous analysis of multiple cancer biomarkers using MALDI-TOF mass spectrometry based on parylene-matrix chip, *Journal of the American Society for Mass Spectrometry* (2020) Accepted.