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Jaebum Choo, Ph.D.

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Academic Career

1994.05: Ph.D., Texas A&M University, College Station, USA.

1986.02: M.S., Hanyang University, Seoul, Korea.

1984.02: B.S., Hanyang University, Seoul, Korea.

Work Experience

2015- Present: Distinguished Professor, Hanyang University

2013-Present: Director, BK-21 Plus Program "Bionano Fusion Technology"

2015: President, Korean Biochip Society

2014-2016: Planning and Review Committee Member, Samsung Technology Foundation

2013-2013: President, Korean SRC/ERC Director Association

2012-2015: Review Board Member, Ministry of Science and Technology

2010-2014: Review Board Member, National Research Foundation ("Bio-Fusion



Division")

2010-2014: Vice-Director, Hanyang Biomedical Research Institute

2009-2014: Director, Center for Integrated Human Sensing System (ERC supported from NRF)

2009-2011: Director, Institute of Nanosensor Technology

2009-2011: Head, Department of Bionano Engineering at Hanyang University

2003-2004: Visiting Scholar, Biomedical Engineering Institute, University of Toronto, Canada

Awards

2016. 11.: Best Research Award, Korean Biochip Society

2016. 09: Top Ten Reviewers for Analyst & Integrative Biology, Royal Society of Chemistry

2015. 05: Distinguished Professorship, Hanyang University

2015. 01: Research Excellence Award, Hanyang University

2014. 10: Biochip Journal "Most Cited Paper" Award, Korean Biochip Society

2014. 06: Ministerial Citation, Ministry of Science, ICT and Future Planning

2013.07: Best Paper Award, Korean Federation of Science & Technology Societies

2012. 02: Best Research ERC Center, NRF of Korea (Director)

2011.09: Top 50 Research Award, Ministry of Science, ICT and Future Planning

2011. 09: Top 100 Research Proposal Reviewers, National Research Foundation of Korea

2011.05: Research Excellence Award, Hanyang University

2010.05: Research Excellence Award, Hanyang University

Research Interests

- Early Disease Diagnosis Using Highly Sensitive Nanoprobe-based Optical Sensor
- Development of Microfluidic Devices for Sensitive Biomarker Detection
- Fabrication of Optically Sensitive Nanoparticles for Sensitive Biomedical Diagnostics
- Development of Portable Nano-biosensor for Hazardous Virus/Bacteria Pathogens



- Development of Integrated Optical System Combined with SERS-based Lateral Flow Kit

Representative Achievements

Total Number of Peer-Reviewed SCI Papers: 240 (including ACS Nano, Chem. Soc. Rev., J. Am. Chem. Soc., Anal. Chem., Lab Chip, Small, Chem. Commun., Nano Lett., Nanoscale, Langmuir, Biosens. Bioelectron., J. Phys. Chem., J. Chem. Phys. and so on)

Contributed Book Chapters: 5

Patents: 32 (Registration: 15, Pending: 17)

Invited Lectures: International 95; Domestic 120

Technology Transfer to Industry: 3

Selective Publication

•“Simultaneous detection of dual prostate specific antigens using SERS-based immunoassay for accurate diagnosis of prostate cancer”

ACS Nano, 11, 4926-4933 (2017).

•“Fluorescent chemical probes for accurate tumor diagnosis and targeting therapy”

Chem. Soc. Rev., 46, 2237-2271 (2017).

•“Simultaneous Detection of Dual Nucleic Acids Using a SERS-based Lateral Flow Biosensor” Anal. Chem., 89, 1163-1169 (2017).

•“Optical nanoprobe for ultrasensitive immunoassay” Anal. Chem., 89, 124-137 (2017).

•“Wash-free magnetic immunoassay of the PSA cancer marker using SERS and droplet microfluidics” Lab Chip, 16, 1022-1029 (2016).

•“Application of a SERS-based lateral flow immunoassay strip for the rapid and sensitive detection of staphylococcal enterotoxin B” Nanoscale, 8, 11418-11425 (2016).

•“Fast and sensitive detection of an anthrax biomarker using SERS-based solenoid microfluidic sensor” Biosens. Bioelectron., 72, 230-236 (2016).

•“Bio-inspired development of a dual-mode nanoprobe for MRI and Raman



imaging”

Small, 11, 84-89 (2015).

•“Gold Nanoparticle Silica Nanopeapods” J. Amer. Chem. Soc., 136, 3833-3841 (2014).

•“SERS-based competitive immunoassay of troponin I and CK-MB markers for early diagnosis of acute myocardial infarction” Chem. Commun., 50, 1058-1060 (2014).

•“Rapid and sensitive phenotypic marker detection on breast cancer cells using surface-enhanced Raman scattering (SERS) imaging” Biosens. Bioelectron., 51, 238-243 (2014).