

NANO KOREA 2020

July 1~3, KINTEX, Korea

Sunghoon Kwon

Professor, Department of Electrical and Computer Engineering, Seoul National University

Address: 1 Gwanak-ro Gwanak-gu, Seoul National University 81-229, Seoul 08826, Republic of Korea

Telephone: (+82)2-880-1736

Fax: (+82)2-6280-1736

E-mail: skwon@snu.ac.kr

Nationality: Republic of Korea

Web: <http://www.binel.snu.ac.kr>

EDUCATION

University of California at Berkeley	Ph.D	Bioengineering	2004
Seoul National University	MS	Medical Engineering	2000
Seoul National University	BS	Electrical Engineering	1998

PROFESSIONAL ACTIVITIES

- Founder & CEO, Quanta Matrix Inc., Republic of Korea, May 2011 to Present
- Founder & Scientific Advisor, Celemics Inc., Republic of Korea, November 2010 to Present
- Professor, Department of Electrical and Computer Engineering, Seoul National University, Republic of Korea, August 2006 to Present
- Postdoctoral Fellow, Molecular Foundry, Lawrence Berkeley National Laboratory, USA, January 2004 to July 2006

AWARD AND HONORS

- 2019 National R & D Performance Evaluation Merit Award, President in Ministry of Science and ICT (2019)
- Jin-Pok Kim's Award for the Best Cancer Research in Korea, Korea Cancer Research Foundation (2019)
- The 13th Pioneers of Miniaturization Lectureship, Lab on a Chip Journal (2018)
- Young Engineer Award, The National Academy of Engineering of Korea (2018)
- IT Young Engineer Award, IEEK/IEEE Joint Awards (2016)
- Lectureship Award, Chemical Society of Japan (2014)
- The Jin-gi Hong Creativity Award, The 4th annual Yumin Awards (2013, science part)
- SNU Creative Leading Researcher (2012, equivalent to University Professor)
- Presidential Young Scientist Award (2012)
- Young Scientist Award, The Korea Academy of Science and Technology (2011)

NANO KOREA 2020

July 1~3, KINTEX, Korea

MAIN SCIENTIFIC PUBLICATION

- OPENchip: an on-chip in situ molecular profiling platform for gene expression analysis and oncogenic mutation detection in single circulating tumour cells, *Lab on a Chip*, 2020
- Microspinning: Local Surface Mixing via Rotation of Magnetic Microparticles for Efficient Small-Volume Bioassays, *micromachines*, 2020
- Targeted sequencing aids in identifying clonality in chronic myelomonocytic leukemia, *Leukemia Research*, 2019
- Characteristics of Waldenström Macroglobulinemia in Korean Patients According to Mutational Status of MYD88 and CXCR4: Analysis Using Ultra-Deep Sequencing, *Clinical Lymphoma, Myeloma & Leukemia*, 2019
- Whole genome sequencing of single circulating tumor cells isolated by applying a pulsed laser to cell-capturing microstructures, *Small*, 2019
- Divide and conquer: A perspective on biochips for single-cell and rare-molecule analysis by next-generation sequencing, *APL Bioengineering*, 2019
- High information capacity DNA-based data storage with augmented encoding characters using degenerate vases, *Scientific Reports*, 2019
- Barcode-free next-generation sequencing (NGS) error validation for ultra-rare variant detection, *Nature Communications*, 2019
- Efficient selection of antibodies reactive to homologous epitopes on human and mouse hepatocyte growth factors by next-generation sequencing-based analysis of the B cell repertoire, *International Journal of Molecular Sciences*, 2019
- High-throughput retrieval of physical DNA for NGS-identifiable clones in phage display library, *mAbs*, 2019
- One-Step Generation of a Drug-Releasing Hydrogel Microarray-on-a-Chip for Large-Scale Sequential Drug Combination Screening, *Advanced Science*, 2018
- PHLI-seq: constructing and visualizing cancer genomic maps in 3D by phenotype-based high-throughput laser-aided isolation and sequencing, *Genome Biology*, 2018
- Design and Synthesis of a Reconfigurable DNA Accordion Rack, *Jove-Journal of Visualized Experiments*, 2018
- A rapid culture system uninfluenced by an inoculum effect increases reliability and convenience for drug susceptibility testing of *Mycobacterium tuberculosis*, *Scientific Reports*, 2018
- Hierarchical shape-by-shape assembly of microparticles for micrometer-scale viral delivery of two different genes, *Biomicrofluidics*, 2018
- ELIPatch, a thumbnail-size patch with immunospot array for multiplexed protein detection from human skin surface, *Biomicrofluidics*, 2018
- Clinical Evaluation of QMAC-dRAST for Direct and Rapid AST with Gram-positive cocci From Positive Blood Culture Bottles, *The Annals of Clinical Microbiology*, 2018
- High-throughput construction of multiple cas9 gene variants assembly of high-depth tiled and sequence-verified oligonucleotides, *Nucleic Acids Research*, 2018
- Reconfigurable DNA Accordion Rack, *Angewandte Chemie*, 2018
- Direct rapid antibiotic susceptibility test (dRAST) for blood culture and its potential usefulness in clinical practice, *Journal of Medical Microbiology*, 2018

RESEARCH INTERESTS

- Proactive healthcare, Next generation health check-up, Translational medicine, Immune profiling, Single cell omics, Nanobiotechnology, BioMEMS