

SUNGHOO KWON

EDUCATION

University of California at Berkeley, CA

2000-2004	Ph.D (Bioengineering) , UCB/UCSF Joint Bioengineering Graduate Group BioPOEMS laboratory, Berkley Sensor and Actuator Center (BSAC)
2004.1 - 2006.7	Postdoctoral Fellow, Molecular Foundry, Lawrence Berkeley National Laboratory, CA, USA
Seoul National University , Seoul, Korea	
1998-2000	MS (Medical Engineering) Interdisciplinary program in medical engineering
1994-1998	BS (Electrical Engineering)

PROFESSIONAL EXPERIENCES

2006.8 – present	Professor, Department of Electrical Engineering, Seoul National University, Korea
2010.11–present	Founder & Scientific Advisor, Celemics Inc., Seoul, Korea
2011.5 –present	Founder & CEO, Quanta Matrix Inc., Seoul, Korea
2023.3 – 2025.2	Vice president, SNU Bio-MAX institute, Seoul, Korea
2025.3 – present	President, SNU Bio-MAX institute, Seoul, Korea

REPRESENTATIVE PUBLICATIONS

- "One-day rapid sterility test for human-derived biopharmaceuticals." **Nature Biomedical Engineering**, 2025
➔ Ultra-rapid sterility testing platform for biopharmaceuticals
- "Blood culture-free ultra-rapid antimicrobial susceptibility testing", **Nature**, 2024
➔ The world's fastest ID and AST technology for sepsis treatment
- "Mapping cancer biology in space: applications and perspectives on spatial omics for oncology", **Molecular Cancer**, 2024
- "Fluidic self-assembly for MicroLED displays by controlled viscosity", **Nature**, 2023
- "Epitranscriptomics of cancer microniches", **Nature Reviews Cancer**, 2023
- "Derivation of prognostic contextual histopathological features from whole-slide images of tumours via graph deep learning", **Nature Biomedical Engineering**, 2022
- "Spatial epitranscriptomics reveals A-to-I editome specific to cancer stem cell microniches", **Nature Communications**, 2022 [**Research highlight at Nature cancer review**] ➔ **Foundation of Meteor Biotech**
- "Purification of multiplex oligonucleotide libraries by synthesis and selection", **Nature Biotechnology**, 2022
- "Stereotypic neutralizing VH antibodies against SARS-CoV-2 spike protein receptor binding domain in COVID-19 patients and healthy individuals", **Science Translational Medicine**, 2021 ➔ **Tech transfer of neutralizing antibody**
- "Barcode-free next-generation sequencing (NGS) error validation for ultra-rare variant detection", **Nature Communications**, 2019
- "A rapid antimicrobial susceptibility test based on single-cell morphological analysis", **Science Translational Medicine**, 2014 ➔ **productized in Europe and Korea as dRAST™ in Quantamatrix**
- "Programming magnetic anisotropy in polymeric microactuators", **Nature Materials**, Vol. 9, 2011
- "Colour-barcoded magnetic microparticles for multiplexed bioassays", **Nature Materials** 9, 745-749, 2010 [Cover article]
➔ **productized as QPLEX™ and AlzPlus in Quantamatrix**
- "A high-throughput optomechanical retrieval method for sequence-verified clonal DNA from NGS platform", **Nature Communications**, volume 6, 2015 ➔ **productized in Celemics**

HONORS AND AWARDS

- The Incheon Award, The Incheon Memorial Foundation (2022, \$100k award given to most recognized scientists)
- Jin-Pok Kim's Award for the Best Cancer Research in Korea, Korea Cancer Research Foundation (2019)
- Lab on a Chip Journal, The 13th Pioneers of Miniaturization Lectureship (2018)
- **The National Academy of Engineering of Korea, Young Engineer Award** (2018)
- **The Jin-gi Hong Creativity Award, The 4th annual Yumin Awards** (2013, science part)
- **Presidential Young Scientist Award** (2012, presidential award given to 4 scientists under age of 40)
- **Young Scientist Award, The Korea Academy of Science and Technology** (2011)