

Jung Soo Lee, Ph.D., M.B.A.

Mobile: (623) 280-3298 | E-mail: jungsoolee8619@gmail.com

INTRODUCTION

5 years of industry experience in semiconductor business with Ph.D. in applied science, M.S. in mechanical engineering, and M.B.A. Good communicator and excellent learner & adapter with high work ethics. Expertise in all types of Thin-film metrology · Process development · Tool maintenance & matching · AI driven data analysis. Recently, active customer support on Advanced packaging tools including ENEPIG, Fluxless reflow, and vertical furnace, i.e. yield monitoring with responsive technical support.

EXPERIENCE

Yield Engineering Systems, Inc. (YES)

Chandler, AZ

Process Engineer - Key Account Technologist

Dec. 2025 – Current

- Technologist for **surface finishing and reflow tools**: fluxless Reflow, vertical furnace, and ENEPIG
- Customer support on yield monitoring with responsive technical support

ASM America, Inc.

Phoenix, AZ

Sr. Process Engineer - R&D

Apr. 2024 – Oct. 2025

- Leading PE for BEOL integration of Molybdenum ALD film applied to **3D-DRAM wordline metalization**
- Leading PE for developing **in-situ laser sensor** for Molybdenum dose analyzer
- Leading PE for matching processes of decades of on-site and demo equipment
- Equipment maintenance: **monitoring performance through wafer defect measurement**

Sr. Process Engineer - Metrology

May. 2022 – Apr. 2024

- Owner of transmission electron microscopy
- **Internal and external customer care focusing on their critical interests**
- Material STEM analysis: S/TEM, EDS, EELS, 4-D STEM, strain analysis, image analysis
- Active collaboration with internal customers: paper publication for low-temp selective epitaxy development

INanoBio, Inc.

Scottsdale, AZ

Postdoctoral Researcher at a start-up

Apr. 2021 – Apr. 2022

- Thin film deposition on next-gen DNA sequencing device using CVD and ALD
- Device failure analysis using S/TEM and FIB/SEM dual beam using ASU facility

EDUCATION

Quantic School of Business & Technology

Washington, D.C.

Master of Business Administration, online class of 2024, Score: 91%

Apr. 2023 – Aug. 2024

- Continuing study of MBA according to the new trend of tech business

Southern Methodist University

Dallas, TX

Ph.D. in Applied Science, GPA: 3.96/4.0

May. 2018 – Jan. 2021

- Engineering core: thin film engineering; microfluidics; nanofabrication

Southern Methodist University

Dallas, TX

M.Sc. in Mechanical Engineering, GPA: 3.425/4.0

Aug. 2016 – May. 2018

- Engineering core: fluid dynamics, nanofabrication

HONORS AND AWARDS

- **Journal citations/papers**: 286/11 (May 2026)
- **Award**: Honor student with top grade at Yonsei University in 2012, South Korea

SKILLS

- **Statistical process data analysis:** primary process data analysis with JMP(JSL), Excel, or MATLAB; Process drift, Tool-to-tool matching, Chamber matching, Root cause correlation analysis, etc.
- **Advanced packaging equipment (Dry & Wet):** R&D and customer support for Fluxless Formic acid reflow tool for solder bumps & E-less Ni E-less Pd Immersion Gold (ENEPIG) for PCB metal plating tool
- **Thin-film Metrology:** hands-on R&D experience with all types of thin-film metrology including Bruker or Malvern XRR/XRD, Semilab FAaST C-V/I-V, KLA eDR, KLA SP5, KLA Aleris ellipsometer, KLA Capres (micro 4-point probe), Rigaku XRF/tXRF, Bruker AFM, Hitachi SEM, optical microscopes, UV mask aligner, etc.
- **Thin-film process:** engineering Molybdenum thin film for thickness, resistivity, roughness, selective growth, 3D-DRAM metalization, improving Line Bending in memory structure
- **Optics:** optical system developer; diode laser alignment; beam/lens focusing with Fourier optics; free-space laser coupling; fiber laser coupling, dealing with table optics components etc.
- **Electron microscopist:** professional TEM engineer, EDX, EELS, 4D-STEM microstrain analysis, advanced SEM user; ThermoFisher Metrios, JEOL JEM-ARM200F, 2100F, 2010F, ThermoFisher Helios, FEI Nova200, Hitachi SU8600.

Journals, Conference papers, Book chapters and Patents

SCI Journals

1. **Jung Soo Lee***, J. P. Oviedo*, N. Bandara, X. Peng, L. Xia, Q. Wang, K. Garcia, J. Wang, MinJun Kim[†], Moon J. Kim[†], Detection of nucleotides in hydrated ssDNA via 2D hBN nanopore with ionic-liquid/salt-water interface, Electrophoresis, Wiley, 2021. (**First authorship**, Selected for Cover)
2. J. Saharia, N. Bandara, **Jung Soo Lee**, Q. Wang, Moon J. Kim, MinJun Kim, Fabrication of hexagonal boron nitride based 2-D nanopore sensor for the assessment of electro-chemical responsiveness of human serum transferrin protein, Electrophoresis, Wiley, 2020.
3. S. S. S. Peri, M. K. Sabnani, M. U. Raza, E. L. Urquhart, S. Ghaffari, **Jung Soo Lee**, MinJun Kim, J. Weidanz, G. Alexandrakis, Quantification of low affinity binding interactions between natural killer cell inhibitory receptors and targeting ligands with a self-induced back-action actuated nanopore electrophoresis (SANE) sensor, Nanotechnology, IOP, 2020.
4. **Jung Soo Lee**, J. Saharia, N. Bandara, G. Goyal, A. Darvish, Q. Wang, Moon J. Kim, MinJun Kim, Mechanical measurement of shape deformation of liposome using solid-state nanopore sensor with automated recapturing platform, Electrophoresis, Wiley, 2019. (**First authorship**, Selected for Cover)
5. A. Darvish, **Jung Soo Lee**, B. Peng, J. Saharia, R. V. K. Sundaram, G. Goyal, N. Bandara, C. W. Ahn, J. S. Kim, P. Dutta, I. Chaiken, MinJun Kim, Mechanical characterization of HIV-1 with a solid-state nanopore sensor, Electrophoresis, Wiley, 2019. (Selected for Cover)
6. J. Saharia*, N. Bandara*, G. Goyal, **Jung Soo Lee**, B. I. Karawdeniya, MinJun Kim, Molecular level profiling of human serum transferrin protein through assessment of nanopore-based electrical and chemical responsiveness, ACS Nano, 2019.
7. S. S. S. Peri, M. K. Sabnani, M. U. Raza, S. Ghaffari, S. Gimlin, D. D. Wawro, **Jung Soo Lee**, MinJun Kim, J. Weidanz, G. Alexandrakis, Detection of specific antibody-ligand interactions with a self-induced back-action actuated nanopore electrophoresis (SANE) sensor, Nanotechnology, IOP, 2019.
8. **Jung Soo Lee**, B. Peng, A.C. Sabuncu, S. Nam, C. Ahn, Moon J. Kim, MinJun Kim, Multiple consecutive recapture of rigid nanoparticles using a solid-state nanopore sensor, Electrophoresis, Wiley, 2018. (**First authorship**, Selected for Cover)

Conference Papers

1. Daner Abdula, YuJen Chiu, Brendan Marozas, Rami Khazaka, Caleb K Miskin, **Jung Soo Lee**, Alexandros T Demos, Low-Temperature Selective Si:As Epitaxy, ECS transactions, IOP, 2024 (Paper - TEM analysis)

Book chapter

1. S. S. S. Peri, M. U. Raza, M. K. Sabnani, S. Ghaffari, S. Gimlin, D. D. Wawro, **Jung Soo Lee**, MinJun Kim, Jon Weidanz, G. Alexandrakis, Self-Induced Back-Action Actuated Nanopore Electrophoresis (SANE) Sensor for Label-Free Detection of Cancer Immunotherapy-Relevant Antibody-Ligand Interactions, Biomedical Engineering Technologies, Methods in Molecular Biology, vol 2394, Springer Nature, 2022

Patents

1. M. Choi, **Jung Soo Lee**, J. Kwon, Tongue imaging chamber with integrated microfluidic channel. (South Korea, KR Patent No. 10-2016-0058046, Dec. 13, 2017)