

CURRICULUM VITAE

Jungjae Park

Ph.D Candidate Student

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PERSONAL

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EDUCATION

2018.09-2023.02 **Ph. D.** in Dept. of Materials Science and Engineering,
Korea Advanced Institute of Science and Technology (KAIST)
(Advisor: ***Prof. Jong Min Yuk***)

2016.09-2018.08 **M.S.** in Dept. of Materials Science and Engineering,
Korea Advanced Institute of Science and Technology (KAIST)
(Advisor: ***Prof. Jong Min Yuk***)

2011.03-2016.08 **B.S.** in Dept. of Materials Science and Engineering,
Pusan National University

PUBLICATIONS

A. Thesis

1. Ph.D Thesis: “**Graphene Liquid Cell Electron Microscopy for Observing Early-Stage Dynamics of Amyloids**” (2023) (in English).
Thesis Advisor: Prof. Jong Min Yuk (KAIST)
2. M.S. Thesis: “**Single Particle Analysis of Protein Structure Using Graphene Liquid Cell**” (2018) (in English).
Thesis Advisor: Prof. Jong Min Yuk (KAIST)

B. International Journal Publications (SCI)

10. Kimin Kim, **Jungjae Park**, Yehjoo Sohn, Chan Eui Oh, Ji-Ho Park, Jong Min Yuk, and Ju Hun Yeon, “stability of plant leaf-derived extracellular vesicles according to preservative and storage temperature”, *Pharmaceutics*, 14, 457 (2022) DOI: <https://doi.org/10.3390/pharmaceutics14020457>
9. Kimin Kim, **Jungjae Park**, Jik-han Jung, Ruri Lee, Ji-Ho Park, Jong Min Yuk, Hyundoo Hwang, and Ju Hun Yeon, “Cyclic tangential flow filtration system for isolation of extracellular vesicles”, *APL Bioeng.* 5, 016103 (2021) DOI: <https://doi.org/10.1063/5.0037768>
8. **Jungjae Park**, Kunmo Koo, Namgyu Noh, Joon Ha Chang, Jun Young Cheong, Kyun Seong Dae, Ji Su Park, Sanghyeon Ji, Il-Doo Kim, and Jong Min Yuk*, “Graphene Liquid Cell Electron Microscopy: Progress, Applications, and Perspectives”, *ACS Nano* 15, 288-308 (2021) DOI: <https://pubs.acs.org/doi/10.1021/acsnano.0c10229>
7. Kunmo Koo⁺, **Jungjae Park**⁺, Sanghyeon Ji, Saltanat Toleukhanova, and Jong Min Yuk*, “Liquid-Flowing Graphene Chip-Based High-Resolution Electron Microscopy”, *Adv. Mater.* 33, 2005468 (2021) DOI: <https://doi.org/10.1002/adma.202005468> (*Inside Back Cover Article*)
6. Qian Chen, Jong Min Yuk, Matthew R. Hauwiler, **Jungjae Park**, Kyun Seong Dae, Jae Sung Kim, and A. Paul Alivisatos, “Nucleation, growth, and superlattice formation of nanocrystals observed in liquid cell transmission electron microscopy”, *MRS Bulletin* 45, 713-726 (2020) DOI: <https://doi.org/10.1557/mrs.2020.229>
5. Jae Yeol Park, Yoonsu Shim, Yong-il Kim, Yuseon Choi, Ho Jun Lee, **Jungjae Park**, Ji Eun Wang, Yonghee Lee, Joon Ha Chang, Kanghoon Yim, Chi Won Ahn, Chan-Woo Lee, Do Kyung Kim and Jong Min Yuk*, “An iron-doped NASICON type sodium ion battery cathode for enhanced sodium storage performance and its full cell applications”, *J. Mater. Chem. A* 8, 20436-20445 (2020) DOI: <https://doi.org/10.1039/D0TA07766F>
4. Namgyu Noh, **Jungjae Park**, Ji Su Park, Kunmo Koo, Jae Yeol Park and Jong Min Yuk*, “Lithographically patterned well-type graphene liquid cells with rational designs”, *Lab Chip* 20, 2796-2803 (2020) DOI: <https://doi.org/10.1039/D0LC00440E>
3. Kyun Seong Dae, Joon Ha Chang, Kunmo Koo, **Jungjae Park**, Jae Sung Kim, and Jong Min Yuk*, “Real-Time Observation of CaCO₃ Mineralization in Highly Supersaturated Graphene Liquid Cells”, *ACS Omega* 5, 14619-14624 (2020) DOI: <https://doi.org/10.1021/acsomega.0c01300> (*Cover Article*)
2. Hyeon Kook Seo, Yoon Hwa, Joon Ha Chang, Jae Yeol Park, Jae Sang Lee, **Jungjae Park**, Elton J. Cairns,* and Jong Min Yuk*, “Direct Visualization of Lithium Polysulfides and Their Suppression in Liquid Electrolyte”, *Nano Lett.* 20, 2080-2086 (2020) DOI: <https://doi.org/10.1021/acs.nanolett.0c00058>

1. Sang Yun Kim, Kyun Seong Dae, Kunmo Koo, Daewoon Kim, **Jungjae Park**, and Jong Min Yuk*, "Sequential Growth and Etching of Gold Nanocrystals Revealed by High-Resolution Liquid Electron Microscopy", *Phys. Status Solidi A* 216, 1800949 (2019)
DOI: <https://doi.org/10.1002/pssa.201800949> (*Front Cover Article*)

C. Domestic and International Conference

6. Kimin Kim, **Jungjae Park**, Jik-han Jung, Ruri Lee, Ji-Ho Park, Jong Min Yuk, Hyundoo Hwang, and Ju Hun Yeon, "Isolation of Extracellular Vesicles Based on Cyclic Tangential Flow Filtration System", ISEV2021 Annual Meeting, Virtual (18-21 May 2021)
5. **Jungjae Park**, Kunmo Koo, Sanghyeon Ji, and Jong Min Yuk, "Liquid-Flowing Graphene Chip: Advanced Liquid Cell Platform for In-Situ Electron Microscopy", 2021 spring meeting for the Korean Institute of Metals and Materials (KIMM), Republic of Korea (28-30 Apr. 2021), *Oral Presentation*
4. **Jungjae Park**, Hyeongseop Jeong, Euijun Choi, Jaekyung Hyun and Jong Min Yuk, "Functionalized graphene as cryo-EM supporting film", 2018 Microscopy and Microanalysis, Baltimore, Maryland, USA (5-9 Aug. 2018), *Oral Presentation*
3. Namgyu Noh, **Jungjae Park**, Jisu Park, Kunmo Koo, Young Heon Kim and Jong Min Yuk, "Facile fabrication of graphene-sealed microwell liquid cell for liquid electron microscopy", 2018 Microscopy and Microanalysis, Baltimore, Maryland, USA (5-9 Aug. 2018)
2. Sang Yun Kim, Kyun Seong Dae, Kunmo Koo, Daewoon Kim, **Jung Jae Park**, Jae Won Shin, Jeong Yong Lee, and Jong Min Yuk, "Observation of sequential growth and etching of Au nanocrystals using graphene liquid cell electron microscopy", The 3rd East-Asia Microscopy conference, EAMC3, Bexco, Busan, Korea (07-10 Nov. 2017)
1. **Jungjae Park**, Hyeong Seop Jeong, Sang Yun Kim, Kunmo Koo, Jaekyung Hyun, and Jong Min Yuk, "Direct observation of hydrated protein crystal at 11.5Å resolution using graphene liquid cell", The 3rd East-Asia Microscopy conference, EAMC3, Bexco, Busan, Korea (07-10 Nov. 2017), *Poster Presentation*

D. Patent

3. Country: Republic of Korea; Title of the invention: Transition metal substituted sodium vanadium fluorophosphate/sodium vanadium phosphate ($\text{Na}_3\text{V}_2(\text{PO}_4)_2\text{F}_3/\text{Na}_3\text{V}_2(\text{PO}_4)_3$) composite for sodium ion storage materials; Application number: 10-2020-0013120; Application date: 04. Feb. 2020.; Inventor: J. M. Yuk, J. Y. Park, H. Lee, **J. J. Park**
2. Country: U.S.; Title of the invention: Liquid chip for electron microscope having excellent bulging resistance; Application number: 16/749,941; Application date: 22. Jan. 2020.; Inventor: J. M. Yuk, N. G. Noh, K. M. Koo, **J. J. Park**, S. H. Ji

1. Country: Republic of Korea; Title of the invention: Liquid chip for electron microscope having excellent bulging resistance; Application number: 10-2019-0009589; Application date: 25. Jan. 2019.; Inventor: J. M. Yuk, N. G. Noh, K. M. Koo, **J. J. Park**, S. H. Ji

SCHOLARSHIPS OR AWARDS

2021.04.30	The Best Student Oral Presentation Award, 2021 spring meeting for Korean Institute of Metals and Materials (KIMM)
2021.03.30	Award for Outstanding Research Performance, National NanoFab Center (NNFC)
2018.08.09	M&M Student Scholar Award, Microscopy and Microanalysis 2018
2013.03 – 2016.08	POSCO Scholarship, POSCO
2011.03 – 2016.08	The National Scholarship for Science and Engineering, Korea Student Aid Foundation (KOSAF)

EXPERIENCED EQUIPMENT AND SKILLS

- TEM
 - JEOL ARM200CF (probe corrector)
 - JEOL JEM 3010
 - JEOL JEM 2100F with OneView IS
 - JEOL JEM 1400Plus with OneView basic
 - FEI Titan Krios with Falcon 3 direct electron detector
 - FEI Glacios with Falcon 3 direct electron detector
- TEM Holder
 - JEOL Single & Double Tilt Holder for JEOL & FEI TEM
 - Heating & Electrical Cell Holder (Fusion Select, Protochips)
 - Liquid Flow Cell Holder (Poseidon Select, Protochips)
 - Gas Cell Holder (Atmosphere, Protochips)
 - Cryo Transfer Holder (Model 698/626, Gatan)
- TEM Technique
 - Atomic-Resolution Scanning/Transmission Electron Microscopy
 - Centered Dark-Field TEM
 - X-ray Energy Dispersive Spectroscopy (EDS)
 - Electron Energy Loss Spectroscopy (EELS)
 - Low Dose Mode (FEI) / Minimum Dose System (JEOL)
 - Single Particle Analysis for Reconstructing Protein Structure

- TEM Sample Preparation Technique
 - Thin Film Preparation (Polishing, Dimpling)
 - Ion Milling (PIPS2, Gatan)
- SEM
 - Hitachi S4800
 - Hitachi SU5000
 - Hitachi SU8230