



Department of Chemical Engineering,  
Pukyong National University, Busan, Republic of Korea

March 22, 2021

Title: Positions available at Dept. Chemical Engineering, Pukyong National University, Korea

Dear all,

We will have multiple positions open for **PhD candidates and postdoctoral fellows** at Department of Chemical Engineering, Pukyong National University ([www.pknu.ac.kr](http://www.pknu.ac.kr)) available from **September 1st, 2021**. The students will be involved in one of projects of the following Labs:

1. **Intelligent Systems Lab** (Prof. J. Jay Liu, e-mail: [jayliu@pknu.ac.kr](mailto:jayliu@pknu.ac.kr))
2. **Advanced Transport Phenomena Lab** (Prof. Do Jin Im, e-mail: [dj-im@pknu.ac.kr](mailto:dj-im@pknu.ac.kr))
3. **Biomolecular Engineering Lab** (Prof. Sung In Lim, e-mail: [silim@pknu.ac.kr](mailto:silim@pknu.ac.kr))
4. **Advanced Separation Lab** (Prof. Hyuk Taek Kwon, e-mail: [htkwon@pknu.ac.kr](mailto:htkwon@pknu.ac.kr))

Successful candidates for the positions will have a strong background in each topic described in the following table. They also will be fluent in English, have good writing and communication skills, and have reasonable laboratory experience. A Ph.D candidate will receive a monthly stipend plus tuition fee. A postdoctoral fellow will receive a salary commensurate with research experience and publication record. Interested applicants are recommended to send a detailed CV, a brief statement of research interests and experience, relevant publications, and letters of recommendation by April 23<sup>th</sup> to professors of your interest. For any inquiry, feel free to contact them directly.

Thank you,

A handwritten signature in black ink, appearing to read 'Jay Liu', positioned above a horizontal line.

J. Jay Liu, Ph.D  
Professor, Department of Chemical Engineering  
Director, Institute of Cleaner Production Technology  
Pukyong National University, Korea



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PI (Lab), Homepage	Topics	Advantages
J. Jay Liu (Intelligent Systems Lab) <a href="https://sites.google.com/site/isystemslab">sites.google.com/site/isystemslab</a>	① Machine learning applications in operation of renewable energy systems ② In-silico design and characterization of molecules ③ Sustainable system design & analysis (e.g., renewable energy production)	Familiarity with one or more following programs would be an advantage: ①&② R, MATLAB, Python, Tensorflow, ② Amber, NAMD, Gromacs, VMD, Gaussian ③ Gabi, SimaPro, Aspen Plus/HYSYS, GAMS
Do Jin Im (Advanced Transport Phenomena Lab) <a href="https://cms.pknu.ac.kr/djim">cms.pknu.ac.kr/djim</a>	① Organoid culture in a droplet environment ② Development of digital microfluidic devices ③ Control of multiple droplets by AI algorithm	Familiarity with one or more following: ① experience in cell culture & bio experiments, ②&③ Electric circuit, relay switch, Arduino, Raspberry Pi, etc
Sung In Lim (Biomolecular Engineering Lab) <a href="https://cms.pknu.ac.kr/bmbplab">cms.pknu.ac.kr/bmbplab</a>	① Multi-specific protein design for therapeutics ② Protein nanoparticle for targeted drug delivery ③ Enzyme evolution and immobilization	Familiarity with one or more following: ①Molecular biology/Recombinant technology ② Cell culture/Protein characterization, ③ Pharmacology
Hyuk Taek Kwon (advanced Separation Lab) <a href="https://scholar.google.com/citations?user=5imY3hcAAAAJ&amp;hl=ko">https://scholar.google.com/citations?user=5imY3hcAAAAJ&amp;hl=ko</a>	① Metal-organic framework membrane for gas separation ② Adsorption-based rare earth metals recovery ③ Metal-organic complex coating for drug and protection application	Familiarity with one or more following: ① experience in porous material (MOF, zeolite, silica, sol-gel powder) synthesis, ② separation process, ③ organic synthesis