JUHA CHOI

B.S. Candidate in Chemical Engineering, Inha University

Incheon, Republic of Korea | contact@juhachoi.com | juhachoi.com | GitHub

RESEARCH INTERESTS

CO_2 capture and utilization (CCU) · Porous materials: silica aerogels and metal-organic frameworks · Heterogeneous catalysis for CO_2 conversion

EDUCATION

Inha University, Incheon, Republic of Korea Mar 2027 – Feb 2029 (e
M.S. in Chemical Engineering

Inha University, Incheon, Republic of Korea Mar 2023 – Feb 2027 (e
B.S. in Chemical Engineering
Relevant coursework: Transport Phenomena, Chemical Reaction Engineering, Chemical Engineering Thermodynamics, Process Design and Control, Separation Processes

RESEARCH EXPERIENCE

Undergraduate Researcher Jul 2026 – Dec 2026 (e
Polymer Engineering Laboratory, Department of Chemistry and Chemical Engineering, Inha University · Advisor: Prof. Sang Eun Shim
Hierarchically porous PVMDMS@PVP silica aerogels as supports for MOF catalysts in CO_2 cycloaddition

- Gained hands-on materials synthesis skills by making MOF-supporting silica aerogels myself, from radical copolymerization of the precursor (confirmed by FT-IR) through sol-gel processing and ambient-pressure drying.
- Learned catalyst loading and reaction testing by depositing Zr-based MOF-808 through vacuum impregnation and solvothermal growth, then running CO_2 cycloaddition in a 5 bar batch reactor.
- Built experimental-design and literature skills by mapping a water–precursor–solvent ternary phase diagram and presenting paper reviews and a SciVal trend analysis (about 870 papers) to the lab.

TEACHING EXPERIENCE

Science Instructor, Integrated Science, grades 8-10 Sep 2026 – Present
Private academy, Korea

- Developed the ability to explain science clearly by teaching about 40 middle and high school students at different levels.
- Launched a YouTube lecture series on integrated science in November 2026. youtube.com/@hazelinherlabcoat

Private Tutor and Academy Teaching Assistant Mar 2023 – Aug 2026
Middle and high school students, Korea

- Built communication and time-management skills by teaching part-time alongside full-time study for four years.

SOFTWARE PROJECTS

Independent projects, designed and built with AI-assisted development (Claude Code).

Grade and Weekly-Progress Reporting Web App Sep 2026 – Present

Web app that turns students' wrong answers into automatic analytics reports and handles attendance, grades and parent messaging in one place.

Seojae: Personal Exam-Preparation Platform Oct 2026 – Present

Personal study app with interactive concept cards, practice problems and spaced-repetition review of mistakes, used for the GRE, aptitude tests and chemical engineering courses.

Personal Planning Dashboard Oct 2026 – Present

Personal dashboard that connects Google Calendar with daily routines, tasks and a budget tracker.

SKILLS

Laboratory	Radical polymerization, Sol-gel synthesis and ambient-pressure drying, MOF-808 solvothermal loading, Pressurized CO_2 reactor operation, FT-IR
Software & Programming	COMSOL Multiphysics, MATLAB, Python, JavaScript (Node.js), Git/GitHub

LANGUAGES

Korean	Native
English	Fluent (professional working proficiency) · TOEIC Speaking Test AL(160) (Oct 2026)

References available upon request. Last updated Nov 2026