

Sehyeok Ki

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EDUCATION

- University of Michigan, MI, US** Sep 2024 – Present
2nd year graduate student in Chemistry PhD program | Adviser: Stephen Maldonado, PhD
Research Focus: Electrochemical investigation on semiconductor/electrolyte interface
- Hanyang University, Seoul, South Korea** Mar 2021 – Feb 2023
M.S. in Chemistry | Adviser: Jinho Chang, PhD | GPA: 4.0/4.0
- Hanyang University, Seoul, South Korea** Mar 2015 – Feb 2021
B.S. in Chemistry | Adviser: Hoeil Chung, PhD | GPA: 3.91/4.0

RESEARCH INTERESTS

- Electroanalytical chemistry
- Nano-electrochemistry
- Scanning electrochemical probe microscopy
- Semiconductor electrochemistry

RESEARCH EXPERIENCE

Graduate Research

Electrochemical investigation on Si surface oxidation in aqueous solution using SECCM-semiconductor ultramicroelectrode platform (SUME) July 2024 – Present

- Performed SECCM measurements to investigate surface dynamics at n-type Si electrode
- Developed skills for micro/nanopipette fabrication
- Improved experimental set up needed for electrochemical measurements

TEACHING AND MENTORING EXPERIENCE

- Analytical Chemistry Lecture** Fall 2025
- Worked as a Graduate student instructor for the laboratory class
 - Took responsibility for grading quizzes and exams, for holding office hours
- General Chemistry Laboratory** Fall, Winter 2024
- Worked as a Graduate student instructor for the laboratory class
 - Took responsibility for grading quizzes and exams, for holding office hours

EXPERIMENTAL TECHNIQUES & SOFTWARE

(1) Electrochemical Methods

2-, 3-, and 4-electrode systems with a (bi)potentiostat;
Scanning electrochemical probe microscopy (SECCM, SECM)
Rotating ring-disk electrode
Electrochemical quartz microbalance

(2) Simulation Software

COMSOL Multiphysics, DigiElch Electrochemical Simulation

(3) Other Experimental Experience

- Electrode fabrication: microelectrode, microporous carbon electrode
- Spectroscopy: UV-VIS, IR, Raman
- Ionic conductivity measurement
- Viscosity measurement

PUBLICATIONS

2. **Ki, S.**; Park, A.; Lee, W. B.; Kim, Y.; Chang, J. Overlimiting current by iodide electrode oxidation in aqueous media: an electrogenerated iodine interphase with positively charged channels stimulating *in situ* electrokinetic iodide transport. *J. Mater. Chem. A* 2023, *11*(26), 14366–14379.

1. Kim, H.; Kim, K. M.; Ryu, J.; **Ki, S.**; Sohn, D.; Chae, J.; Chang, J. Triiodide-in-iodine networks stabilized by quaternary ammonium cations as accelerants for electrode kinetics of iodide oxidation in aqueous media. *ACS Applied Materials & Interfaces* 2022, *14*(10), 12168–12179.

AWARDS & HONOURS

Graduate Fellowship Ilun Science & Technology Foundation	Fall 2022 – Present
Chairman's Award (Valedictorian of Class 2021) Hanyang University	Feb 2021
The National Scholarship for Science and Engineering Korean Ministry of Science and ICT	Spring 2017 – Fall 2018
Dean's List College of Natural Sciences, Hanyang University	Fall 2015 – Fall 2018