Curriculum Vitae

Jaeho Shin **(신재호), Ph.D.**

KU-KIST Graduate School of Converging Science & Technology

Korea University, Seoul

Republic of Korea.

Email: jaeho-shin@korea.ac.kr

Education

- ❒ Research Professor in KU-KIST Graduate School of Converging Science & Technology, Korea University, Republic of Korea (Sep., 2022 ~) **(PI: Prof. Gunuk Wang)**
- ❒ Ph.D. in KU-KIST Graduate School of Converging Science & Technology, Korea University, Republic of Korea (Sep., 2016 ~ Aug., 2022) **(PI: Prof. Gunuk Wang)**
- ❒ B.S. in Department of Material Science and Engineering, Korea University, Republic of Korea (Mar., 2011 ~ Aug., 2016)

Research Publications

1. **J. Shin**†, S. Yang†, J. S. Eo, T. Jeon, J. Lee, C.-H. Lee*, and G. Wang*, "Molecular van der Waals heterojunction photodiodes enabling dipole-induced polarity switching" *Accepted in Small Methods*
2. **J. Shin**, J. S. Eo, T. Jeon, T. Lee*, and G. Wang*, "Advances of various heterogeneous structure types in molecular junction systems and their charge transport properties" *Accepted in Advanced Science (Back cover selected)*
3. J. S. Eo†, **J. Shin**†, S. Yang, T. Jeon, J. Lee, S. Choi, C.-H. Lee, and G. Wang*, "Tailoring the interfacial band offset by the molecular dipole orientation for a molecular heterojunction selector" *Adv. Sci.* **8**, 2101390 (2021) (†The authors contributed equally to this work)
4. **J. Shin**†, S. Yang†, Y. Jang, J. S. Eo, T.-W. Kim, T. Lee, C.-H. Lee*, and G. Wang*, "Tunable rectification in a molecular heterojunction with two-dimensional semiconductors" *Nat. Commun.* **11**, 1412 (2020) (†The authors contributed equally to this work)

5. **J. Shin**, K. Gu, S. Yang, C.-H. Lee, Y. H. Jang*, and G. Wang*, "Correlational Effects of the Molecular-Tilt Configuration and the Intermolecular van der Waals Interactions on the Charge Transport in the Molecular Junctions" *Nano Lett.* **18**, 4322-4330 (2018)
6. S. Choi, J.-W. Choi, J. C. Kim, H. Y. Jeong, **J. Shin**, S. Jang, S. Ham, N.-D. Kim, and G. Wang*, "Energy-efficient three-terminal SiOx memristor crossbar array enabled by vertical Si/graphene heterojunction barristor" *Nano Energy*, **84**, 105947 (2021)
7. Y. Jang, S.-J. Kwon, **J. Shin**, H. Jeong, W.-T. Hwang, J.-W. Kim, J. Koo, T. Y. Ko, S. Ryu, G. Wang, T.-W. Lee*, and T. Lee*, "Interface-Engineered Charge Transport Properties in Benzenedithiol Molecular Electronic Junctions via Chemically p-doped Graphene Electrodes" *ACS Appl. Mater. Inter.* **9**, 42043-42049 (2017)

Patents

1. 왕건욱 & **신재호**, "이종접합 분자 다이오드 및 그 제조 방법" (10-2020-0145995)

Awards

- **J. Shin**, **Young Physicist Award** (2020 Korean Physics Society (KPS) Fall Meeting)

- **J. Shin**, et al., "Tunable Rectification in a Molecular Heterojunction with Two-Dimensional Semiconductors", **2020 KU Graduate Student Achievement Award** (2020 Korea University)


우수 논문상

2020년 12월 18일


우수 논문 발표상

2018년 12월 19일

- **J. Shin**, et al., “Tunable Rectification in a Molecular Heterojunction with Two-Dimensional Semiconductors”, **Best Paper Award** (2020 KIST Symposium)
- **J. Shin**, et al., “Correlational Effects of the Molecular-Tilt Configuration and the Intermolecular van der Waals Interaction on the Charge Transport in the Molecular Junction”, **Best Paper Award** (2018 KIST Symposium)

Best Presentation Awards


우수발표상

SHIN Jaeho (Korea University)

2022년 5월 2일


Outstanding Presentation Award

Poster Session
SHIN Jaeho (Korea University)

July 23, 2020

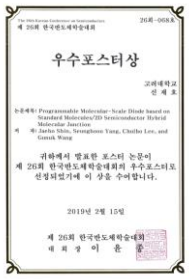
Bum Hoon Lee
President
The Korean Physical Society

- **J. Shin**, et al., “Molecular-scale photo-responsive heterojunction device with two-dimensional semiconductor” (*Oral, Best Oral Presentation Award), KPS Spring Meeting (2022)
- **J. Shin**, et al., “Highly Tunable Molecular Rectifier by Interfacial Design in Molecular Heterojunction with Two-Dimensional Materials” (*Poster, Best Poster Award), KPS Spring Meeting (2020)


Best Poster Award

2019년 12월 20일

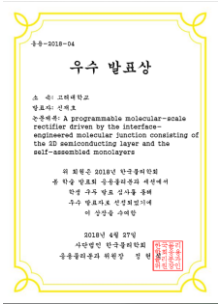
- **J. Shin**, et al., “Highly Tunable Molecular Rectifier by Interfacial Design in Molecular Heterojunction with Two-Dimensional Materials” (*Poster, Best Poster Award), KIST Symposium (2020)



- **J. Shin**, et al., “Programmable molecular-scale diode based on standard molecules/2D semiconductor hybrid molecular junction” (*Poster, Best Poster Award), The 26th Korean Conference on Semiconductor (KCS) (2019)

- **J. Shin**, et al., “Programmable molecular-scale diode based on standard molecules/2D semiconductor hybrid molecular junction” (*Poster, Best Poster Award), Nano Convergence Conference (NCC) (2019)

- **J. Shin**, et al., “Programmable Molecular-Scale Diode Driven by Interfacial Properties of Self-Assembled Monolayer and 2D Semiconducting Materials” (*Poster, Best Poster Award), KPS Fall Meeting (2018)



- **J. Shin**, et al., “A programmable molecular-scale rectifier driven by the interface-engineered molecular junction consisting of the 2D semiconducting layer and the self-assembled monolayers” (*Oral, Best Oral Award), KPS Spring Meeting (2018)

Research Interests

- ❒ Molecular Electronics
- ❒ Two-Dimensional (2D) Materials & Electronics
- ❒ Molecular-Scale Neuromorphic Devices