

Stanford



Dongjae Shin

Postdoctoral Scholar, Photon Science, SLAC

Bio

BIO

My current research focuses on the design of catalytic materials. I have studied atomistic phenomena on catalytic surfaces to develop materials with improved catalytic capability under the philosophy of rational design. To achieve this goal, I use computational approaches, e.g., first-principles calculations and artificial intelligence (AI). Applications include heterogeneous catalysis for exhaust emission control, hydrogen production, and utilization of emission gas to realize carbon neutralization.

PROFESSIONAL EDUCATION

- Bachelor of Science, University of Seoul (2016)
- Master of Science, Korea Advanced Institute of Science and Technology (KAIST), Energy, Environment, Water and Sustainability (2018)
- Doctor of Philosophy, Pohang University of Science and Technology (POSTECH), Chemical Engineering (2023)

STANFORD ADVISORS

- Kirsten Winther, Postdoctoral Research Mentor
- Thomas Jaramillo, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Atomically dispersed Rh catalysts formed on defective CeO₂ surfaces with hydroformylation activity** *CHEMICAL ENGINEERING JOURNAL*
Lee, H., Shin, D., Oh, D., Jeong, B., Kim, K., Hur, C., Han, J., An, K.
2024; 496