Junho Lee

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Affiliation & Education

SungKyunKwan University (SKKU), Suwon Korea
PhD student in Physical Chemistry (Mar.' 18 – present)
Researching density functional theory (DFT) calculation, deep learning in chemistry and biology
Advisor: Prof. Joonsuk Huh

SungKyunKwan University (SKKU), Suwon, Korea
B.S. in Chemistry (Mar.'14 – Feb'18)

Peer-reviewed Publications

Lee, J.; Sung, D; Chung, Y. K.; Song, S. B.; Huh, J., "Unveiling two-dimensional magnesium hydride for hydrogen storage material via generative adversarial network", Nanoscale advances, 2022, 4, 2332–2338.

Lee, J.; Song, S. B.; Chung, Y. K.; Jang, J. H.; Huh, J., "BoostSweet: Learning molecular perceptual representations of sweeteners" Food Chem 2022, 383, 132435.

Lee, J.; Chung, Y. K.; Sung, D.; Jeong, B. J.; Oh, S.; Choi, J.-Y.; Huh, J., "Carrier mobility of one-dimensional vanadium selenide (V_2Se_9) monolayer and nanoribbon systems: DFT study." Nanotechnology, 2022, 33 (13), 135703.

Lee, J.; Kim, B. J.; Chung, Y. K.; Lee, W. G.; Choi, I. J.; Chae, S.; Oh, S.; Kim, J. M.; Choi, J. Y.; Huh, J., Raman scattering of true 1D van der Waals Nb_2Se_9 nanowires. J Raman Spectroscopy 2020, 51 (7), 1100-1107.

Project Experience

SungKyunKwan University (SKKU), Suwon, Korea
Graduate Research Scientist, (Mar. '18 – present)

- Predicting RNA-protein binding from sequence by deep learning.
- Codon optimization by quantum annealing.
- Exploring the OCM catalyst by combining the artificial bee colony algorithm and machine learning.
- Inverse design of 2D metal hydride for hydrogen storage material by generative model.
- Prediction of sweetness of small molecules by machine learning.
- Simulate charge carrier mobility of 1D V_2Se_9 nanomaterials by DFT calculation.
- Simulate Raman spectrum of 1D Nb_2Se_9 nanomaterials by DFT calculation.

Additional Skills

- Practical and academic chemistry experience
- Data analysis
- Computational and data-processing skills
- Solving optimization problems
- Planning experiment and execution