Taewoong Yoon

Department of Physics and Astronomy, Seoul National University
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Education

Seoul National University (SNU), Seoul, Korea
Ph.D. Candidate in Physics, Mar 2019 - Present
Advisor: Prof. Hyunyong Choi

Pohang University of Science and Technology (POSTECH), Pohang, Korea
B.S. in Physics, Mar 2014 - Feb 2019

Seoul Science High School (SSHS), Seoul, Korea
Mar 2011 - Feb 2014

Research Experience

Korea Institute of Science and Technology (KIST), Seoul, Korea
Research Assistant, Feb 2026 - Present
Advisor: Dr. Junghyun Lee

Seoul National University (SNU), Seoul, Korea
Graduate Research Assistant, Aug 2019 - Present
Advisor: Prof. Hyunyong Choi

Honors and Awards

1. BK Excellent TA Award, Jul 2020
2. BK Frontier Fellowship, Mar 2019 - Aug 2019
3. National Scholarship for Science and Engineering, Mar 2014 - Feb 2018

Publications

1. **Mesoscopic Spin Coherence in a Disordered Dark Electron Spin Ensemble**, Taewoong Yoon, Sangwon Oh, Junghyun Lee, and Hyunyong Choi, arXiv:2602.17074 (2026).
2. **Identifying NV center axes via spatially varying microwave fields for vector magnetometry**, Taewoong Yoon, Myungjun Cha, Dohun Kim, and Hyunyong Choi, *Applied Physics Letters*, **126**, 144002 (2025).

Presentations

Oral Presentations

1. **APS Global Physics Summit**. Denver, USA, Mar 2026.
   "Polarization of P1 electron spin bath via repetitive Hartmann-Hahn transfer"
2. **KPS Spring Meeting**. Daejeon, Korea, Apr 2024.
   "Probing and controlling many-body dipolar interactions between electron spins in diamond"
3. **Optics and Photonics Congress (OPC)**. Jeju, Korea, Aug 2023.

"Precise calibration of magnetic field vector in a diamond nitrogen-vacancy center ensemble"

4. **Optics and Photonics Congress (OPC)**. Jeju, Korea, Jul 2021.
   "Aberration correction of femtosecond lasers for deterministic quantum emitters in nitrogen-vacancy diamonds"

Poster Presentations

1. **Conference on Lasers and Electro-Optics (CLEO)**. San Jose, USA, May 2022.
   "Deterministic creation of single nitrogen-vacancy center in diamond using femtosecond laser writing"

Teaching Experience

Teaching Assistant at SNU

- Electrodynamics I (Spring 2021)
- Computational Physics (Fall 2020)
- Electromagnetic Waves and Optics (Spring 2020)
- Physics Lab. 2 (Summer 2019, Fall 2019)
- Physics Lab. 1 (Spring 2019)

Technical Skills

Optical and spin measurement: Confocal scanning microscopy, AOM double-pass configuration, ODMR and spin manipulation, HBT measurement, femtosecond laser writing

Instrument control and data acquisition: Experiment automation and instrument control (Python, LabVIEW)

Microfabrication: Photolithography (mask aligner, RIE, thermal evaporator)

Design and simulation: PCB design (Altium), CAD modeling (AutoCAD, Fusion), numerical simulation and data analysis (Python), electromagnetic field modeling (COMSOL)