Prabesh Bista

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https://prabeshbista.github.io/

Education

09/2021 – 11/2024 **M.Sc. Physics**
National Central University, Zhongli, Taiwan
Thesis: *Development of a non-collinear optical parametric amplifier for photoelectron spectroscopy*.
Advisor: Dr. Cheng-Tien Chiang

09/2015 – 09/2019 **B.Sc. Physics**
Tribhuvan University, Kathmandu, Nepal

Research Publications

Journal Articles

1. M. Singh, **P. Bista**, Y.-C. Lin, C.-N. Kuo, Y.-J. Chuang, M. Paleschke, C.-B. Huang, M.-C. Chung, C.-S. Lue, and C.-T. Chiang, "Valence band momentum imaging of $NiTe_2$ by two-photon photoemission momentum microscopy", Applied Physics Letters **128**, 031601 (2026).
2. T.-I. Yang, Y.-W. Huang, **P. Bista**, C.-F. Ding, J. Chen, C.-T. Chiang, and H.-C. Chang, "Photoluminescence of nitrogen-vacancy centers by ultraviolet one-and two-photon excitation of fluorescent nanodiamonds", The Journal of Physical Chemistry Letters **13**, 11280–11287 (2022).

Presentation

Poster

09/2023 Thematic summer school on 2D Materials in Roscoff, France
Title: *Non-collinear optical parametric amplifier for photoemission spectroscopy*

01/2023 Annual Meeting of the Physical Society of Taiwan
Title: *Development of an Infrared non-collinear optical parametric amplifier at sub-megahertz repetition rates*

11/2022 IAMS Young Fellow Research Presentation
Title: *Construction of an infrared by non-collinear optical parametric amplifier*

Experience

Research Experience

10/2025 – Present **Internship**
Sunko Group, Institute of Science and Technology Austria
• Building and aligning an optical setup for time-resolved magneto-optical Kerr effect (TR-MOKE).

12/2024 – 05/2025 **Internship**
Baykusheva Group, Institute of Science and Technology Austria
• Built a non-degenerate parametric down-conversion (PDC) setup using a non-linear crystal.
• Developed a LabVIEW control and data-acquisition program for an Ophir power meter.
• Characterized beam-pointing stability.

Experience (continued)

09/2021 – 11/2024 **Master's Project**
Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan
- Constructed a non-collinear optical parametric amplifier from scratch.
- Engaged in investigating the electronic structure of bulk $NiTe_2$ using ARPES.

08/2020 – 08/2021 **Research Assistant**
Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan
- Generated second- and third-harmonic signals in nonlinear optical experiments.
- Developed a LabVIEW program for a Thorlabs PM100D power meter.
- Procured laboratory components and assisted with laboratory setup.

03/2020 – 07/2020 **Internship**
Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan
- Used Kelvin probe spectroscopy and ambient photoemission spectroscopy to determine the valence-band maximum of Pt- and Ti-doped WS_2.

Work Experience

05/2016 – 11/2019 **Physics Lab Assistant (full-time)**
Sagarmatha Engineering College, Lalitpur, Nepal
- Trained and guided students in laboratory experiments.
- Troubleshot and maintained laboratory equipment to ensure reliable operation.

Mentorship

IAMS-IIP Internship

06 – 07/2023 Marucheth Thongtheppairoj
Undergrad student at Sirindhorn international institute of Technology (SIIT), Thailand

Honors and Awards

09/2021–08/2024 **TIGP Scholarship** (Academia Sinica, Taiwan) — full scholarship covering tuition and living expenses.

11/2018 **Outstanding Administrative Staff Award** — Student Welfare Society, Sagarmatha Engineering College.

09/2018 **Travel Grant** — National Center for Physics, Pakistan; supported participation in the workshop on Tracking Detector in High Energy Physics.

Skills

Programming Python, LabVIEW

Software Microsoft Office, LaTeX, Origin, SOLIDWORKS, ImageJ

Optics Beam profiling, second- and third-harmonic generation, white-light continuum generation, optical parametric amplification, pulse-width compression and characterization

Other Hands-on experience with angle-resolved photoemission spectroscopy (ARPES)

Activities and Outreach

- Attended the workshop on Transport and Optics in Topological Systems at the Institute of Physics, Academia Sinica, Taipei, Taiwan (June 15–17, 2024).
- Participated in the summer school on Advanced Physics of van der Waals Hetero-Structures in Roscoff, France (September 23–October 1, 2023).
- Volunteered in an intercultural service program, supporting a school in Taiwan through online engagement (September 5–December 1, 2022).
- Participated in the online FOCUS PEEM workshop organized by FOCUS GmbH (June 16–17, 2021).

Activities and Outreach (continued)

- Attended the Workshop on Space Weather and Upper Atmospheric Physics in Kathmandu, Nepal (September 23–27, 2019).
- Participated in the workshop on Tracking Detector in High Energy Physics in Islamabad, Pakistan (October 15–19, 2018).
- Organized the National Science Exhibition at Patan Multiple Campus, Lalitpur, Nepal (February 18–19, 2018).