

Eslam Ahmed, Ph.D.

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📧 @Eslam-Sabry

🌐 <https://eslam-sabry.github.io/>



Personal Details

Nationality 📌 Egyptian
Date of Birth 📌 11 April 1998 (Age: 28)

Employment History

Apr 2026 – current 📌 **Project Assistant Professor**, Kyushu University.
Nov 2025 – Mar 2026 📌 **Project Assistant Professor**, Nagoya University.

Education

2022 – 2025 📌 **Doctorate of Engineering, Nagoya University** in Applied Physics.
Thesis title: *Theory of odd frequency pairing as a probe of topological superconductivity and Majorana fermions*
Supervisor: Prof. Yukio Tanaka

2020 – 2022 📌 **Master's of Engineering, Nagoya University** in Applied Physics.
Thesis title: *Odd-frequency Pairing in Floquet Topological Superconductors.*
Supervisor: Prof. Yukio Tanaka

2016 – 2020 📌 **Bachelor's of Science, Nagoya University** in Physics.
Thesis title: *Gauge/Gravity Duality.*
Supervisor: Prof. Masaharu Tanabashi

Scholarships and Awards

Apr 2023 – Sep 2025 📌 **Mitsubishi Corporation International Scholarship**, Mitsubishi Foundation, Japan.

Apr 2022 – Sep 2022 📌 **KDDI Foundation International Scholarship**, KDDI Foundation, Japan.

Oct 2016 – Sep 2020 📌 **Nagoya University Global 30 Undergraduate Scholarship**, Nagoya University, Japan.

📌 **Al Alfi Foundation Scholarship**, Al Alfi Foundation, Egypt.

Research Publications

Journal Articles

1 E. Ahmed, R. Ohashi, H. Isobe, K. Nomura, and Y. Tanaka, "Universal transport theory for paired fractional quantum hall states in the quantum point contact geometry," *arXiv preprint arXiv:2601.08792*, 2026.

- 2 **E. Ahmed**, Y. Tanaka, and J. Cayao, "Anomalous proximity effect under andreev and majorana bound states," *Journal of Superconductivity and Novel Magnetism*, vol. 38, no. 5, p. 220, Oct. 2025. [DOI: 10.1007/s10948-025-07057-9](#).
- 3 **E. Ahmed**, S. Tamura, Y. Tanaka, and J. Cayao, "Odd-frequency pairing due to majorana and trivial andreev bound states," *Phys. Rev. B*, vol. 111, p. 224 508, Jun. 2025. [DOI: 10.1103/PhysRevB.111.024508](#).
- 4 **E. Ahmed**, S. Tamura, Y. Tanaka, and J. Cayao, "Odd-frequency superconducting pairing due to multiple majorana edge modes in driven topological superconductors," *Phys. Rev. B*, vol. 111, p. 024 507, Jan. 2025. [DOI: 10.1103/PhysRevB.111.024507](#).



Presentations

- Dec 2025 **Frontiers of Superconducting Science with Novel Superconductors**, Yukawa Institute for Theoretical Physics (YITP), Kyoto University.
Poster Presentation: *Unveiling disorder robust Majorana bound states in trivial inhomogeneous superconductors*
- Oct 2025 **ISSP International Workshop "Quantum Transport Frontiers of Mesoscopic Physics"**, ISSP, University of Tokyo.
Poster Presentation: *Robust Zero-Bias Peaks from Non-Local Quasi-Majoranas in the Topologically Trivial Phase*
- Jun 2025 **New Developments in Condensed Matter Physics of Emergent Quantum Phenomena**, Kyoto University.
Oral Presentation: *Anomalous proximity effect under Andreev and Majorana bound states*
- Mar 2025 **Physical Society of Japan (JPS) Annual Meeting**.
Oral Presentation: *Anomalous Proximity Effect in Disordered Rashba Nanowire Junctions: Interplay Between Trivial and Topological Bound States*
- Sep 2024 **Physical Society of Japan (JPS) Annual Meeting**.
Oral Presentation: *Odd-frequency superconducting pairing and multiple Majorana edge modes in driven topological superconductors*
- May 2024 **Frontiers of Emergent Quantum Phenomena: Superconducting Junctions, Edge Conduction, and Anyons**, Kyoto University.
Poster Presentation: *Majorana fermions and odd frequency pairing in Floquet superconductors*
- Aug 2023 **Frontiers of Correlated Electron Systems**, Nagoya University.
Poster Presentation: *Majorana fermions and odd frequency pairing in Floquet superconductors*
- Sep 2022 **Physical Society of Japan (JPS) Annual Meeting**.
Oral Presentation: *Odd-Frequency Pairing in Floquet Topological Superconductor*




Skills

- Theoretical **Topological Superconductivity, Majorana Fermions, Floquet Theory, Quantum Hall Effect (QHE), Conformal Field Theory (CFT), Bosonization, Luttinger Liquids, Green's Functions.**

Skills (continued)

- Computational  **Languages:** Python, Julia.
Numerical Methods: Tight-binding, Recursive Green's Functions, DMRG (ITensors).
Libraries: PyTorch, JAX, CuPy, Kwant, NumPy, SciPy, matplotlib, sympy, ITensors.
- Languages  Arabic (Native), English (Fluent), Japanese (Daily conversation).

References

- Prof. Kentaro Nomura Professor, Department of Physics, Kyushu University.
 nomura.kentaro@phys.kyushu-u.ac.jp
- Prof. Yukio Tanaka Professor, Department of Applied Physics, Nagoya University.
 tanaka.yukio.j2@f.mail.nagoya-u.ac.jp
- Dr. Jorge Cayao Senior Researcher, Department of Physics and Astronomy, Uppsala University.
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