Harun ARDIANSYAH
PhD Student and Graduate Teaching Assistant
Department of Nuclear, Plasma, and Radiological Engineering
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EDUCATION

December 2025 (expected)	**Ph.D. in Nuclear, Plasma, and Radiological Engineering** **University of Illinois Urbana-Champaign**, Urbana (IL) PhD Dissertation Title: **A Reactor Physics Framework to Detect Anomalies in HTGR Core** PhD. Supervisor: **Prof. Tomasz Kozlowski**
May 2021	**M.S. in Nuclear Engineering and Radiological Sciences** **University of Michigan**, Ann Arbor (MI) Research Topic: **Analysis of Steady State and Transient of PBMR-400** Advisor: **Prof. Thomas Downar**
October 2018	**B.Eng. in Nuclear Engineering** **Universitas Gadjah Mada**, Indonesia Final Thesis Title: **Core Design Parametric Study of Integral Pressurized Water Reactor (IPWR) with Mixed Oxide Ceramic Fuel using SRAC Code System** Final Thesis Advisor: **Dr. Alexander Agung**

WORK EXPERIENCE

2022 – Present — **Graduate Teaching Assistant**

- NPRE 455 (Neutron Diffusion and Transport), NPRE 247 (Modeling of Nuclear Energy Systems), NPRE 501 (Fundamentals of Nuclear Engineering)

2022 – 2024 — **Graduate Research Assistant**

- Illinois Microreactor Research, Development, and Demonstration Center (IMRD2C), University of Illinois Urbana-Champaign, Urbana, IL

2021 – Present — **Graduate Research Assistant**

ARTS Group, University of Illinois Urbana-Champaign, Urbana, IL

- Performing analysis on neutronic and thermal hydraulic safety of micro-HTGR reactors.
- Performing application of neutron noise for advanced reactors safety.
- Developing codes for neutron noise in HTGR.

2019-2021 — **Graduate Research Assistant**

NURAM Group, University of Michigan, Ann Arbor MI

- Performed analysis on steady state and transient of PBMR-400 benchmark.
- Performed validation and verification of HTR-10 with Serpent and AGREE.

2018-2019 **Research Intern**
Energi Sterilina Higiena, Indonesia
- Conducted safety analysis for 3 KWe Thorium Generator.

2016-2018 **Teaching Assistant and Laboratory Assistant**
Universitas Gadjah Mada, Indonesia
- Radiation Detection and Measurement Lab.
- Introduction to Nuclear Technology.

SKILLS/EXPERIENCE

- Programming:
  - Proficient: Python, MATLAB, Git.
  - Familiar: C++, MOOSE.
- Radiation Transport:
  - Monte Carlo Neutron Transport: Serpent, MCNP, OpenMC, SCALE (KENO).
  - Deterministic Neutron Transport: SRAC, PARCS.
- Thermal Hydraulics/CFD:
  - Familiar: RELAP, FLUENT
- Structural Material: ABAQUS

PROFESSIONAL ACTIVITIES

- 2025 Summer School in Open Science + Research Software Engineering by the US Research Software Sustainability Institute (URSSI), August 11-15, 2025, University of Alaska Fairbanks.
- Modeling, Experimentation, and Validation (MeV) Summer School 2024 by Argonne National Laboratory, July 29 – August 9, 2024, Argonne National Laboratory.
- Course on "Core Modeling for Transient" by GRE@T-PIONEER, virtual course, January 2024.
- Course on "Deterministic Modeling of Nuclear Reactor Multi-physics" supported by ENEN2+, December 2023, Chalmers University (Sweden).
- Nuclear Innovation Bootcamp 2022 by Nuclear Innovation Alliances, August 2022, University of Wisconsin-Madison.
- 10th International Conference on High Temperature Reactor Technology (HTR2021), virtually in June 2021. Presented a paper entitled "Evaluation of PBMR-400 Core Design Steady State Condition with Serpent and AGREE"
- Session Chair, 6th International Energy Conference ASTECHNOVA, 2021
- Indonesian Nuclear Society (HIMNI), 2021 – Present
- American Nuclear Society, 2019 - Present

HONORS AND AWARDS

- Mavis Future Faculty Fellowship, 2024 – 2025
- Best Team Project Award, MeV School, 2024

- Barclays G. Jones Graduate Fellowship, Grainger College of Engineering UIUC, 2023 – 2024
- Indonesia Endowment Fund for Education (LPDP) Scholarship, Indonesian Ministry of Finance, 2018

PUBLICATIONS

Peer-Reviewed Journals/Conference Proceedings:

1. **Ardiansyah, H.**, Kozlowski, T., Review of Detecting Anomalies in Power Reactors using Neutron Noise Analysis (Under Review in Nuclear Technology)
2. **Ardiansyah, H.**, Kozlowski, T., Modeling and Simulation of Neutron Noise in HTTR Core (In Preparation)
3. **Ardiansyah, H.**, Kozlowski, T., Novel Neutron Noise Unfolding Methods for Anomaly Detection (In Preparation)
4. Dwijayanto, R.A.P., **Ardiansyah, H.**, Harto, A.W. (2024). Verification and Geometry Optimization of a One Fluid Molten Salt Reactor (OFMSR) with Fixed Volume. ASME J of Nuclear Rad Sci. 1-20. https://doi.org/10.1115/1.4064465
5. **Ardiansyah, H.**, Oktavian, M. R. (2021). Evaluating the Diffusion Approximation Capability on the Integral Pressurized Water Reactor (IPWR) Core Calculation. Atom Indonesia, 47(2), 85. https://doi.org/10.17146/aij.2021.1013
6. **Ardiansyah, H.**, Seker, V., Downar, T., Skutnik, S., Wieselquist, W. (2021). Evaluation of PBMR-400 Core Design Steady State Condition with Serpent and AGREE. Journal of Physics: Conference Series, 2048(1), 012024. https://doi.org/10.1088/1742-6596/2048/1/012024

Book:

1. **Ardiansyah, H.**, Ekadewi, P., Silalahi, D. F., Gunawan, D., Wahyuni, E., Dipayana, G. F., Hardhi, M., Winofa, N. C., Ramadhan, R. A., Hidayat, T. (2022). Indonesia Post-Pandemic Outlook: Strategy towards Net-Zero Emissions by 2060 from the Renewables and Carbon-Neutral Energy Perspectives. In Penerbit BRIN. https://doi.org/10.55981/brin.562