Harun Ardiansyah, S.T., M.S.

PhD Student
Nuclear, Plasma, and Radiological Engineering
University of Illinois Urbana-Champaign
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Summary

Harun is a PhD student at the Department of Nuclear, Plasma, and Radiological Engineering at University of Illinois Urbana-Champaign (UIUC) specialized in nuclear reactor physics and analysis. He is part of Analysis of Reactor Transient and Stability (ARTS) group at UIUC supervised by Prof. Tomasz Kozlowski. Along the years, he has involved in some projects related to nuclear reactor physics of advanced reactor, high-performance computing, analysis and method development. In his PhD research, he focuses on power reactor diagnostics and noise analysis for advanced reactor application. Aside his academic pursuit, he is also involved in energy policy activism in his home country of Indonesia. He is currently building a nuclear technology think-tank "Siwabessy Initiative" with his partners.

Education

University of Michigan, USA
MS (2021), Nuclear Engineering and Radiological Sciences
- Research Paper: Evaluation of PBMR-400 Core Design Steady State Condition with Serpent and AGREE
  DOI: https://doi.org/10.1088/1742-6596/2048/1/012024
- Advisor: Prof. Thomas J. Downar
- GPA: 3.86/4.0

Universitas Gadjah Mada, Indonesia
ST (or BSE, 2018), Nuclear Engineering
- Bachelor Thesis: Core Design Parametric Study of Integral Pressurized Water Reactor (IPWR) with Mixed Oxide Ceramic Fuel using SRAC Code System
  DOI: https://doi.org/10.17146/jfn.2018.12.2.5035
- Advisor: Alexander Agung, Ph.D.
- GPA: 3.69/4.0

Research Experience

Graduate Student Research Assistant, August 2021 – Present
University of Illinois Urbana-Champaign
- Research topic: Neutron diffusion code development, power reactor noise analysis for advanced reactors, safety analysis of advanced reactors (Molten Salt Reactors and High Temperature Gas-cooled Reactors)
- Advisor: Prof. Tomasz Kozlowski

Graduate Student Research Assistant, November 2019 – August 2021
University of Michigan
- Performed steady-state and transient analysis of PBMR-400 core design, validation and verification of HTR-10 with Serpent and AGREE
- Advisors and Mentors: Prof. Thomas Downar, Dr. Volkan Seker

Research Intern, June 2018 – December 2018
P.T. Energi Sterilia Higiena (Indonesia)
- Conducted and made reports of neutronics modeling and simulation of Thorium Generator 3 kWe
- Mentor: Dr. Andang Widi Harto

Research Intern, January 2017 – February 2017
Center of Nuclear Fuel Technology, National Nuclear Energy Agency of Indonesia
- Conducted research on Cesium separation using cation exchange method
- Mentor: Ir. Rosika Kriswarini

Teaching/Mentoring Experience

Universitas Gadjah Mada, August 2016 – May 2018
- ***Laboratory Assistant***, March 2017 – May 2018
  Course: Radiation Detection and Measurement Laboratory Works
  - Assisted lab works on multichannel analyzer, prepared lab syllabus, handouts, pre-tests, and exams for 60 sophomores nuclear engineering students
- ***Lecturer Assistant***, August 2016 – December 2016
  Course: Introduction to Nuclear Technology
  - Gave substitute lectures and review/discussion sessions, held office hours, and prepared supplemental materials for ~60 sophomores nuclear engineering students
  - Primary Instructor/Lecturer: Ir. Mondjo, M.T.

Awards

- **Indonesia Endowment Fund for Education (LPDP) Scholarship**, Indonesian Ministry of Finance (2018)

Professional Affiliations & Service

Organizations
- Siwabessy Initiative
  - Co-founder, 2021 – present
- American Nuclear Society (ANS)
  - Member, 2020 – present
- Indonesian Student Organization
  - Indonesian Student Organization at the University of Michigan
    - Vice President, January 2021 – May 2021
  - Indonesian Student Organization at the UIUC

    - Vice President, June 2021 – May 2022
  - Indonesian Student Organization at the United States
    - Co-director of Human Resources, July 2021 – June 2022
    - Vice President, July 2022 - Present
  - Overseas Indonesian Students' Association Alliance
    - Chair of Energy Committee, August 2021 – July 2022
- Institute of Nuclear Material Management (INMM) Student Chapter Universitas Gadjah Mada
  - Member, 2016 – 2017
- National Nuclear Youth Community (KOMMUN) Chapter Yogyakarta
  - Member, 2015 – 2017

Conference & Workshop Organization Activities

- Session chair
  - Energy Security & New and Renewable Energy, Astechnova 2021

References

Prof. Tomasz Kozlowski (txk@illinois.edu)
Prof. Thomas J. Downar (downar@umich.edu)

Publications

Journal Articles

- **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
- **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
- **Ardiansyah, H.** (2018). STUDI PARAMETER DESAIN TERAS INTEGRAL PRESSURIZED WATER REACTOR DENGAN BAHAN BAKAR MIXED OXIDE FUEL MENGGUNAKAN PROGRAM SRAC. *Jurnal Forum Nuklir*, *12*(2), 61. https://doi.org/10.17146/jfn.2018.12.2.5035

Book

- **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

Media Articles

- **Ardiansyah, H.** (2022, January 4). *3 misinformasi yang menghambat pengembangan energi nuklir di Indonesia*. The Conversation. http://theconversation.com/3-misinformasi-yang-menghambat-pengembangan-energi-nuklir-di-indonesia-174156