Dr. Syauqi Abdurrahman Abrori

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Highly motivated researcher with a Ph.D. in Engineering Physics specializing in Materials Science, seeking to contribute to innovative projects in biomedical sensors and electronic ink applications. My previous research focused on developing effective catalysts for electrochemical reactions, specifically optimizing materials for sensor applications, including non-enzymatic electrochemical sensors for detecting biomolecules. I am passionate about addressing impactful problems through creativity and advanced materials research, particularly in enhancing the performance and efficiency of sensors for biomedical applications.

Education

- PhD in Engineering Physics (2020-2023), Faculty of Industrial Technology, Bandung Institute of Technology, Indonesia
- Master's in Engineering Physics (2018-2020), Faculty of Industrial Technology, Bandung Institute of Technology, Indonesia
- Bachelor's in Engineering Physics (2013-2018), Faculty of Industrial Technology, Bandung Institute of Technology, Indonesia

Research Experience

- **Faculty Member,** Automotive & Robotics Engineering,BINUS ASO School of Engineering, 2024-present
  - Conducted research on the application of advanced materials and AI for high-tech industries, including renewable energy and medical applications.
- **Postdoctoral Researcher**, Pusat Riset Biomassa dan Bioproduk BRIN, 2023
  - Developing cellulose acetate membranes for CO_2 adsorbent applications.
- **Fellowship**, International Cooperative Graduate Program (ICGP) at National Institute for Materials Science (NIMS), Japan, 2022-2023
  - Conducted research on electrochemical CO_2 reduction reactions, focusing on optimizing catalyst performance and efficiency.
  - Gained experience in materials science research in a world-class research institution.
  - Collaborated with a multi-disciplinary team of researchers on cutting-edge projects. to engineer and optimize devices for enhanced catalytic performance.
- **Research Assistant**, Advanced Functional Materials (AFM) Research Group, Bandung Institute of Technology, Indonesia, 2019-2021
  - Conducted research on porous materials for sensor applications, including the synthesis, characterization, and testing of materials.
  - Authored 3 first-author publications in peer-reviewed journals.

Technical Skills

- **Techniques:** Electrochemical analysis, operando spectroscopy (Raman, X-ray absorption), material characterization (XRD, SEM, FTIR).

Leadership and Mentoring Experience

- **International Publication Section Head**, Research and Technology Transfer Office, Bina Nusantara University, 2023 - Present
  - Led a team of publication officers to support faculty publications.
  - Oversaw the publication process for international journals.
- **Teaching Assistant**, Engineering Physics Department, Bandung Institute of Technology, Indonesia, 2019-2021
  - Assisted in teaching undergraduate courses in engineering math, probability & statistics, sensor technology, sensors and actuators, material physics, and digital systems & logic.
  - Mentored students in their research projects.

Additional Skills

- Strong analytical and problem-solving skills.
- Excellent technical writing and communication skills.
- Proven ability to work independently and as part of a team.

Publications

- Makalew, B.A., **Abrori, S.A.**(2024) Material informatics-driven insights into brain cancer nanocarriers: A bibliometric comparison of PLGA vs. liposomes. Open Nano, 21, 100225
- Harito, C., **Abrori, S.A.**, Khalil, M., Yuliarto, B., Erten-Ela, S. (2024). Current progress of perovskite solar cells stability with bibliometric study. Current Opinion in Colloid & Interface Science, 74, 101862
- Harito, C., Khalil, M., Nurdiwijayanto, L., Septiani, N.L.W., **Abrori, S.A.**, Putra, B.R., Zaidi, S.Z.J., Taniguchi, T., Yuliarto, B., Walsh, F. C. (2024). Facet-controlled growth and soft-chemical exfoliation of two-dimensional titanium dioxide nanosheets. Nanoscale Adv.,2024 (6), 4325-4345.
- Hastuti, N., Khaerudini, D.S., Aini, E.N., Lukmandaru, G., Hisankusuma, J., Hertada, M.Q., Christiani, M. F., Razi, M.A., **Abrori, S.A.,**. (2024). The potential application of cellulose acetate membrane for CO2 adsorbent. Environmental Technology, 1-9.
- Nuruddin, A., Saputro, A.G., **Abrori, S.A.,** Maulana, A.L., Rahagung, V.L., Dipojono, H.K., Lesbani, A., & Anshori, I. (2022). Oxygen Reduction Reaction Mechanism on the Square Paddle-Wheel Cage Site of TM-BTC (TM= Mn, Fe, Cu) Metal-Organic Framework. Journal of Mathematical & Fundamental Sciences, 54(2).
- **Abrori, S.A.,** Septiani, N.L.W., Nuruddin, A., Anshori, I., & Yuliarto, B. (2022). Comparison of a 2D/3D imidazole-based MOF and its application as a non-enzymatic electrochemical sensor for the detection of uric acid. New Journal of Chemistry, 46(44), 21342-21349.
- Siregar, J., Septiani, N.L.W., **Abrori, S.A.,** Sebayang, K., Fahmi, M.Z., Humaidi, S., Lesbani, A., & Anshori, I. (2021). A pollutant gas sensor based on Fe3O4 nanostructures: A review. Journal of the Electrochemical Society, 168(2), 027510.
- Ulhakim, M.T., Rezki, M., Dewi, K.K., **Abrori, S.A.,** Harimurti, S., Septiani, N.L.W., Lesbani, A., & Anshori, I. (2020). Recent trend on two-dimensional metal-organic frameworks for electrochemical biosensor application. Journal of The Electrochemical Society, 167(13), 136509.
- **Abrori, S.A.,** Septiani, N.L.W., Hakim, F.N., Maulana, A., Anshori, I., & Yuliarto, B. (2020). Non-enzymatic electrochemical detection for uric acid based on a glassy carbon electrode modified with MOF-71. IEEE Sensors Journal, 21(1), 170-177.
- **Abrori, S.A.,** Septiani, N.L.W., Nugraha, Anshori, I., Suyatman, Suendo, V., Yuliarto, B. (2020). Metal-Organic-Framework FeBDC-Derived Fe3O4 for Non-Enzymatic Electrochemical Detection of Glucose. Sensors, 20(17), 4891.

Previous Projects Summary

Project Name: Bridging Research to Publication: Accelerating Student Scopus Indexation through Intensive Writing, Mentorship, and the Psychology Research Club's Strategic Program - Member

- Contract Value: IDR 75,000,000
- Duration: 2024 - 2025
- Client: BINUS
- Key Project Summary: Enhance student engagement in academic research and publications.

Project Name: International Recognition through Research and Collaboration & Global Engagement - Lead

- Contract Value: IDR 386,765,000
- Duration: 2023 - 2024
- Client: BINUS, Universities and Industry Partners
- Key Project Summary: Fostering strategic partnerships with top Japan institutions towards research and collaboration & global engagement.

Project Name: Bridging Industry and Universities for Sustainable Future (BINUS) Indo-Pacific Forum 2024- Member

- Contract Value: IDR 1,188,400,000
- Duration: 2023 - 2024
- Client: BINUS, University & Industry Partners
- Key Project Summary: Fostering strategic partnerships aligned with the SDGs to enhance BINUS Global reputation.