



Prof. Dr. Muksin, M.Si., M.Phil

Position	Research interests include seismology, seismic hazard mitigation, and microzonation using geophysical methods such as HVSR and InSAR, integrated with artificial intelligence. His work focuses on earthquake-prone areas, particularly in Aceh, to support disaster risk reduction.
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Academic Career	<p>Doctorate Course: Geophysics, Universität Potsdam, PhD thesis: Seismological Method used for geothermal exploration</p> <p>Magister Course: Physics, Institut Teknologi Bandung, Master thesis in Electromagnetic wave propagation, Earth Science, Research School of Earth Sciences, Australian National University, Master thesis in Seismic Structure of Sumatra</p> <p>Bachelor Course: Physics (Syiah Kuala University)</p>
Employment	Professor at Universitas Syiah Kuala, Research Assistant, GeoForschungsZentrum Potsdam, 2010-2015, Research Assistant, RSES-ANU, 2008-2010.
Research and development projects (last 5 years)	<ol style="list-style-type: none"> 1. AcehSeis(2014-2018),Pijayseis (2016-2017),Seulimeum and Seulawah(2017-2019) 2. Siposeis, (Passive seismic study for geothermal exploration, 2011-2015) 3. Lake Toba(2008),Imaging the crustal and upper mantle structure of the Walfish Passive Continental Margin withinSPP SAMPLE. 4. Integrating Realtime Earthquake Observation and Community Participation for Sustainable Local development (2023-2025) 5. Developing Carbon Capture and Storage Monitoring System (Matching Fund 2024-2025)
Collaborations (last 5 years)	<ol style="list-style-type: none"> 1. GeoForschungZentrum, German Research Center for Geosciences (Germany) 2. Earth Observatory of Singapore, Nanyang Technological University (Singapore) 3. Institut Teknologi Bandung (Bandung, Indonesia) 4. Universitas Gadjah Mada (Djogjakarta, Indonesia) 5. Universiti Sains Malaysia (Malaysia)
Patents and proprietary rights	Books: Yunita Idris, Muksin Umar, Laina Hilma Sari , 2020, RUMAH TAHAN GEMPA Untuk Masyarakat Aceh , Banda Aceh, Badan Penanggulangan Bencana Aceh, 978-623-90210-8-5.
Selective Publications (last 5 years)	<ol style="list-style-type: none"> 1. Isna, C., Oktari, R.S., Agussabti, A., Dirhamsyah, M. and Umar, M., 2025. Bridging Technology and Community: Local Perceptions of Earthquake Sensors in Aceh's Seismic Zones, Indonesia. <i>International Journal of Disaster Risk Reduction</i>, p.105613. 2. Yanis, M., Isa, M., Zaini, N., Abdullah, F., Umar, M., Marwan, Zahrati, C., Dewanto, B.G., Ananda, R. and Ghani, A.A., 2025. Evaluation of the shallow hydrothermal system in Jaboi Volcano based on the combination of remote sensing and geophysical measurements. <i>Geosciences Journal</i>, pp.1-19. 3. Simanjuntak, A.V., Palgunadi, K.H., Supendi, P., Muksin, U., Gunawan, E., Widiyantoro, S., Rawlinson, N., Daryono, M.R., Daryono, D., Karnawati, D. and Hanifa, N.R., 2024. The western extension of the Balantak Fault revealed by the 2021 earthquake cascade in the central arm of Sulawesi, Indonesia. <i>Geoscience Letters</i>, 11(1), p.35. 4. Asnawi, Y., Gunaya, M., Prayitno, S., Simanjuntak, A. and Muksin, U., 2024. Simulation Of Earthquake Intensity For Tsunami Prediction And Disaster Risk Management. <i>Geomate Journal</i>, 26(118), pp.17-24. 5. Jihad, A., Banyunegoro, V.H., Umar, M., Ramli, M., Idris, Y. and Rusdin, A.A., 2024. Characterizing Earthquake Source Parameters and b-Value Variations in Subduction and Fault Segments: Implications for Seismic Hazard Analysis. <i>Journal of Mathematical & Fundamental Sciences</i>, 56(1). 6. Feng, M., Wei, S., Chen, L., Muksin, U., Lythgoe, K., Wang, T. and Wu, Z., 2023. Pervasive crustal volcanic mush in the highly stretched Sunda plate margin of Northern Sumatra. <i>Geophysical Research Letters</i>, 50(21), p.e2023GL104391. 7. Simanjuntak, A.V., Palgunadi, K.H., Supendi, P., Daryono, D., Prakoso, T.A. and Muksin, U., 2023. New insight on the active fault system in the halmahera volcanic arc, Indonesia, derived from the 2022 tobelo earthquakes. <i>Seismological Research Letters</i>, 94(6), pp.2586-2594. 8. Simanjuntak, A.V.H., Muksin, U., Arifullah, A., Lythgoe, K., Asnawi, Y., Sinambela, M., Rizal, S. and Wei, S., 2023. Environmental vulnerability characteristics in an active swarm region. <i>Global Journal of Environmental Science and Management</i>, 9(2), pp.211-226. 9. Muksin, U., Riana, E., Rudiyanto, A., Bauer, K., Simanjuntak, A.V.H. and Weber, M., 2023. Neural network-based classification of rock properties and seismic vulnerability. <i>Global Journal of Environmental Science and Management</i>, 9(1), pp.15-30.
Membership	<ol style="list-style-type: none"> 1. European Association of Geoscientists and Engineers 2. Member of the Indonesian Geophysics Association, 3. Member of the Indonesian Physics Association.
External Link	https://fsd.usk.ac.id/muksinumar/