



DR. EFFI HELMY BIN ARIFFIN

Senior Lecturer
Faculty of Science and Marine Environment
Universiti Malaysia Terengganu



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QUALIFICATIONS

- PhD (Marine Geoscience), Université de Bretagne Sud (2017)
- Master of Science (Oceanography Geology), Universiti Malaysia Terengganu (2012)
- Bachelor of Science (Marine Science), Universiti Malaysia Terengganu (2008)
- Diploma of Agriculture, Universiti Putra Malaysia (2005)

FIELD OF RESEARCH

- Coastal Geomorphology
- Coastal Erosion
- Coastal Morphodynamics
- Coastal Management
- Hydrodynamics Modelling
- Sedimentology

RESEARCH INTEREST

Research interests focus on the interaction between hydrodynamic process (Numerical modelling) and coastal morphodynamic as response to seasonal monsoon for coastal management and coastal protection proposes.

EXPERT LINKAGES

- Kasetsart University, Thailand
- Université Bretagne Sud, France
- International Islamic University Malaysia
- Universiti Kebangsaan Malaysia
- Universiti Putra Malaysia

PROFFESIONAL MEMBERSHIP

- Eurpean Geosciences Union, Member, 2019 – Present (International)
- Geological Society Of Malaysia, Member, 2019 - Present (National)

RESEARCH GRANTS

Project Leader

Project : Marine knowledge Assimilations to coastal community via sustainable co-management
Position : Project Leader
Grant Name : KTAG
Status : Completed
Amount : RM5,000

Project : Impact of sea level rise on hydrodynamic changes at Kuala Nerus, Terengganu coast
Position : Project Leader
Grant Name : NAHRIM
Status : Completed
Amount : RM50,000

Project : Modelling the mechanism of coastal erosion and morphodynamic changes under the influence of monsoon and coastal defence structures at Kuala Nerus, Terengganu (Malaysia)
Position : Project Leader
Grant Name : FRGS – KPT
Status : Active
Amount : RM102,000

Project : Impact of sea level rise due to storm surge influence through coastal morphodynamics
Position : Project Leader
Grant Name : NAHRIM
Status : Active
Amount : RM200,000

Co-Researcher

Project : Investigate on life quality of fisherman through tourism activities
Position : Co-Researcher
Grant Name : Translational - UMT
Status : Completed
Amount : RM50,000

Project : Biomass and carbon stock of mangrove in Tumpat, Kelantan and Setiu lagoon, Terengganu: Adaptation of mangrove on sea level rise

Position : Co-Researcher

Grant Name : NAHRIM

Status : Completed

Amount : RM100,000

Project : Sedimentation rate of mangrove at Kelantan delta and Kuala Selangor : Adaptation to sea level rise

Position : Co-Researcher

Grant Name : NAHRIM

Status : Completed

Amount : RM100,000

Project : Coastal vulnerability index (CVI) on sea level rise at Kelantan, Negeri Sembilan and Melaka coast

Position : Co-Researcher

Grant Name : NAHRIM

Status : Completed

Amount : RM150,000

Project : Beach morphodynamic classification for identify the different of turtle nesting along Terengganu Coast, Malaysia

Position : Co-Researcher

Grant Name : Translational – UMT

Status : Active

Amount : RM20,000

Project : Research on impact, response and cost-benefit analysis on flood and drought crisis of water supply for Federal Territory of Kuala Lumpur

Position : Co-Researcher

Grant Name : NAHRIM

Status : Active

Amount : RM150,000

Consultation

- Project : Investigate the mechanisms of coastal erosion in reclamation area under the influence of monsoon at the southern part of Johor, Malaysia
- Position : Project Leader
- Funder : Country Garden Pacificview Sdn. Bhd. (Forest City)
- Status : Active
-
- Project : Shoreline Evolution and Prediction in Kuala Ibai, Kuala Terengganu
- Position : Project Advisor
- Funder : Geohydrocean Services Sdn Bhd
- Status : Completed
-
- Project : Pembinaan Pencegahan Hakisan (E-Fence) di Pusat Santuari Penyu Ma'daerah
- Position : Project Advisor
- Funder : Ma'Daerah Working Group/Jabatan Perikanan Malaysia/WWF Malaysia
- Status : Completed

AWARDS

- Best presenter, The International Conference on Ocean, Engineering Technology and Environmental Sustainability 2019, 2019 (International)
- Best presenter , International UMT Annual Symposium, 2010 (National)

PUBLICATIONS

Journal Article

1. **Ariffin, E. H.**, Zulfakar, Zufayri, M. S., Redzuan, N. S., Mathew, M. J., Akhir, M. F., Baharim, N. B., & Mokhtar, N. A. (2020). Evaluating the effects of beach nourishment on littoral morphodynamics at Kuala Nerus, Terengganu (Malaysia). *Journal of Sustainability Science and Management*, 15(5), 29–42.
2. Ismail, N. I., **Ariffin, E. H.**, Yaacob, R., Lokman, M. H., & Baharim, N. B. (2020). The Impact of seasonal monsoons on the morphology of beaches protected by barrier islands in Setiu, Terengganu, Malaysia. *Journal of Sustainability Science and Management*, 15(4), 1–10.
3. Mathew, M. J., Sautter, B., **Ariffin, E. H.**, Menier, D., Ramkumar, M., Siddiqui, D, Hugo, D. E., Nerea, T., Kalil, & Gensac, E. (2020). Total vulnerability of the littoral zone to climate change-driven natural hazards in north Brittany, France. *Science of the Total Environment*, 706, 135963.

4. Rattharangsri, T., **Ariffin, E. H.**, Awang, N. A., & Hongshuai, Q. (2020). Roughness coefficient of polyurethane-bonded revetment. *Maritime Technology and Research*, 2(1), 19–32.
5. Shariful, F., Sedrati, M., **Ariffin, E. H.**, Md Shubri, S., & Akhir, M. F. (2020). Impact of 2019 tropical storm (Pabuk) on beach morphology, Terengganu coast (Malaysia). *Journal of Coastal Research*, 95(1), 346–350.
6. Zufayri, M. S. Z., Akhir, M. F., **Ariffin, E. H.**, Awang, N. A., Matyaacob, M. A., Chong, M. S., & Muslim, A. M. (2020). The effect of coastal protections on the shoreline evolution at Kuala Nerus, Terengganu (Malaysia). *Journal of Sustainability Science and Management*, 15(3), 71–85.
7. Hamzah, M. L., Amir, A. A., Maulud, K. N., Sharma, S., Mohd, F. A., Selamat, S. N., Karim, O., **Ariffin, E. H.**, & Begum, R. A (2020). Assessment of the Mangrove forest changes along the Pahang coast using remote sensing and GIS technology. *Journal of Sustainability Science and Management*, 15(5), 43-58
8. **Ariffin, E. H.**, Sedrati, M., Akhir, M. F., Norzilah, M. N. M., Yaacob, R. & Husain, M. L. (2019). Short- Rosnan, Y., Shaari, H., Noraisyah, S., Ahmad, M. F., **Ariffin, E. H.**, Zakariya, R., & Husain, M. L. (2018). Annual changes of beach profile and nearshore sediment distribution off Dungun-Kemaman, Terengganu, Malaysia. *Jurnal Teknologi*, 80 (5), 57-66.
9. **Ariffin, E. H.**, Sedrati, M., Akhir, M. F., Norzilah, M. N. M., Yaacob, R. & Husain, M. L. (2019). Short-term observations of beach morphodynamics during seasonal monsoons: two examples from Kuala Terengganu coast (Malaysia). *Journal of Coastal Conservation*, 23(6), 985-994.
10. Rattharangsri, T., **Ariffin, E. H.**, Awang, N. A & Qi Hongshuai (2019). Roughness coefficient of polyurethane-bonded revetment. *Maritime Technology and Research*, 2 (1), 19-32.
11. Selamat, S. N., Maulud, K. N. A., Mohd, F. A., Rahman, A. A, Zainal, M. K., Wahid, M. A. A., Hamzah, M. L., **Ariffin, E. H.** & Awang, N. A. (2019). Multi method analysis for identifying the shoreline erosion during northeast monsoon season. *Journal of Sustainability Science and Management*, 14 (3), 43-54.
12. Prukpitikul, S., Kaewpoo, N. & **Ariffin, E. H.** (2019). An evaluation of a new offshore breakwater at Sattahip Port, Thailand. *Maritime Technology and Research*, (1), 15-22.
13. **Ariffin, E. H.**, Mathew, M. J., Yaacob R., Akhir, M. F., Shaari, H., Zulfakar, M. S. Z., Sedrati, M., & Awang, N. A (2018). Beach morphodynamic classification in different seasons at Terengganu beaches, Malaysia. *Journal of Sustainability Science and Management*, 13 (5), 61-72.
14. **Ariffin, E. H.**, Sedrati, M., Akhir, M. F., Daud, N. R., Yaacob, R. & Husain, M. L. (2018). Beach morphodynamics and evolution of monsoon-dominated coasts in Kuala Terengganu, Malaysia: perspectives for integrated management. *Journal of Ocean and Coastal Management*, 163, 498-514.
15. **Ariffin, E. H.**, Sedrati, M., Akhir, M. F., Yaacob, R., & Husain, M. L. (2016). Open sandy beach morphology and morphodynamic as response to seasonal monsoon at Kuala Terengganu, Malaysia. *Journal of Coastal Research*. 75, 1032-1036.

16. Mahazan M., Khairuddin I., **Ariffin, E. H.**, Shaffril, H. A. M., Samah, A. & Turiman Suandi (2016). The impact of climate change on small-scale fishermen in Malaysia. *Journal of the Social Sciences*, 13 (11), 3352-3356.

Conference Publication

1. **Ariffin, E. H.**, Awang, M. N. & Ariffin, A. (2018). The impact of industrial Revolution 4.0 on Shipbuilding and Ship Repair Activities in Malaysia. *Advancement in Emerging Technologies and Engineering Applications*. November 9, Perak, Malaysia.
2. **Ariffin, E. H.**, Sedrati, M., Akhir, M. F., Yaacob, R. & Husain, M. L. (2016). Short-Term of morphodynamics changes using cross-shore profiles and foreshore sediments at Kuala Terengganu Beaches in Malaysia. *Universiti Malaysia Terengganu 13th International Annual Symposium (UMTAS)*. December 13-15. Kuala Terengganu, Malaysia.
3. **Ariffin E. H.**, Sedrati, M., Akhir MF, Yaacob, R. & Husain, M. L. (2016). Assessment of the impact of artificial coastal structure on shoreline evolution along a monsoon dominated coast: Kuala Terengganu, Malaysia. *Estuarine Coastal Conference 2016 (ECSA 56)*. September 4-9. Bremen, Germany.
4. **Ariffin, E. H.**, Sedrati, M., Yaacob, R., Husain, M. L. & Akhir, M. F. (2015). The Seasonal Dynamic on Beach Morphology at Open Sand Beaches in Kuala Terengganu, Malaysia. *12th Annual Meeting Asia Oceania Geoscience Society & 7th Asia Pacific of Hydrology and Water Resources (APHW) Conference*. August 2-7. Singapore.
5. Annuar, M. A., Husain, M. L. & **Ariffin, E. H.** (2012). Seafloor Morphology of Kuala Terengganu Nearshore, Malaysia. *International Conference for Postgraduate Education, (ICPE)*. December 18-19. Kuala Lumpur, Malaysia.
6. Annuar, M. A., Husain, M. L. & **Ariffin, E. H.** (2012). Seafloor Morphology of Kuala Terengganu Nearshore, Malaysia. *Seminar Hasil Penyelidikan KPT, SHPKPT*. November 8-9. Kuala Lumpur, Malaysia.
7. Annuar, M. A., Husain, M. L., & **Ariffin, E. H.** (2012). Nearshore Sediment Distribution and Characteristics along the Kuala Terengganu Coast, Malaysia. *8th International Conference on Marine Technology (MARTEC)*. October 20-22. Kuala Terengganu, Malaysia.
8. **Ariffin, E. H.**, Yaacob, R., Nor Antonina, A., Husain, M. L. & Anas, M. A. (2011). Abundance, Composition and Provenance of Heavy Minerals at Estuaries and Coastal of Terengganu, Malaysia. *7th Malaysia Geoheritage Conference & 4th Indonesia-Malaysia Joint Geoheritage Conference*. October 1-4. Kuala Terengganu, Malaysia.
9. **Ariffin, E. H.**, Yaacob, R, Nor Antonina, A., Husain, M. L. & Anas, M. A. (2011). Sediment Distribution at Estuary and Coastal Water of Kemaman, Terengganu, Malaysia. *Universiti Malaysia Terengganu 10th International Annual Symposium (UMTAS)*. July 11-13. Kuala Terengganu, Malaysia.
10. **Ariffin, E. H.**, Yaacob, R, Nor Antonina, A, Husain, M. L. & Anas, M. A. (2011). The Variability of Coastal Morphology and the Associated Grain-Size Distribution at Estuary and Coastal Water of Dungun, Terengganu, Malaysia. *Universiti Malaysia Terengganu 10th International Annual Symposium (UMTAS)*. July 11-13. Kuala Terengganu, Malaysia.
11. Yaacob, R. & **Ariffin, E. H.** (2010). Effects of Sedimentology and Beach Morphology on Tourism at Terengganu Beach, Malaysia. *Universiti Malaysia Terengganu 9th International*

Annual Symposium (UMTAS). May 8-11. Kuala Terengganu, Malaysia. (Best Presenter Award)

Chapter in Book

1. **Ariffin, E. H.**, Sedrati, M., Daud, N. R., Mathew, M. J., Akhir, M. F., Awang, N. A., Yaacob, R., Siddiqui, N. A. & Husain, M. L. (2019). Shoreline Evolution under the Influences of Oceanographic and Monsoon Dynamics: The Case of Terengganu, Malaysia. In Ramkumar et al. (Ed.), *Coastal Zone Management: Global Perspectives, Regional Processes, Local Issues*. Amsterdam: Elsevier. pp. 113-130.

Newspaper and Magazine

1. Berita Harian (2019, October 23). 17 arca pelbagai hidupan laut jadi tarikan. Retrieved from <https://mediapermata.com.bn/17-arca-projek-umt-tarikan-baharu/>
2. Sinar Harian (2019, July 23). UMT lakukan simulasi tentukan pantai berisiko. Retrieved from <https://www.facebook.com/MediaUMTofficial/posts/sinar-harian-23-julai-2019-umt-lakukan-simulasi-tentukan-pantai-berisiko/1034284803445998/>
3. Sinar Harian (2019, December 19). Panik perigi timbul: Ini penjelasan pakar. Retrieved from <https://www.sinarharian.com.my/article/60882/EDISI/Terengganu/Panik-perigi-timbul-Ini-penjelasan-pakar>
4. Bernama (2019, October 19). Deretan 17 arca projek UMT tarikan baharu di Dapo Pata. Retrieved from <https://www.bernama.com/bm/news.php?id=1773978>
5. Utusan Borneo (2019, October 3). Deretan 17 arca projek UMT tarikan baharu di Dapo Pata. Retrieved from <https://www.pressreader.com/malaysia/utusan-borneo-sabah/20191003/282102048411801>
6. Ariffin, E. H. (2018). Pantai UMT kini kembali. *INFOCUS magazine*. 62 (7-19).

SUPERVISION

Doctor of Philosophy Degree

Thesis Title : Probabilistic modelling of shoreline change at Kuala Nerus, Terengganu
Student Name : Faerah Nasir
Role : Main Supervisor
Status : Active (2019 – present)

Thesis Title : Sediment characteristics and heavy minerals distributions comparison between Sungai Terengganu and Sungai Dungun: Fluvial flow between natural and distributed fluvial system
Student Name : Mohamad Shaufi Sokiman
Role : Main Supervisor
Status : Active (2020 – present)

Master Degree
Full research

Thesis Title : Beach morphodynamics variability of Penarik to Kuala Ibai: Erosion, accretion, and volumetric changes
Student Name : Noor Izam Ismail
Role : Main Supervisor
Status : Graduated (2018 – 2020)

Thesis Title : Field measurement and numerical approach of RIP current hazards at the selected recreational beaches along Pahang Coastline
Student Name : Muhammad Amirul Syafiq Hamsan
Role : Co-Supervisor
Status : Graduated (2018 – 2020)

Thesis Title : Studies on anthropogenic structure impact on shoreline and current movement along beach of Kuala Nerus, Terengganu
Student Name : Muhammad Syakir Zufayri Zulfakar
Role : Co-Supervisor.
Status : Active (2018 – present)

Thesis Title : Impacts of coastline changes on coastal community in Kuala Nerus, Terengganu
Student Name : Syazana Md Shubri
Role : Main Supervisor
Status : Active (2018 – present)

Thesis Title : Morphodynamic pattern in response to monsoonal seasons and coastal defence structures in Terengganu coast Malaysia
Student Name : Junainah Zakaria
Role : Main Supervisor
Status : Active (2019 – present)

Thesis Title : A model of coastal erosion scenario in monsoon dominated coast: case study of Pengkalan Maras beach, Terengganu, Malaysia
Student Name : Nurin Adina Roslee Jelani
Role : Main Supervisor
Status : Active (2019 – present)

Thesis Title : Numerical Modelling on Coastal Dynamic in Terengganu beaches, Malaysia.

Student Name : Nur Fatihah Shariful Azham
Role : Main Supervisor
Status : Active (2019- present)

Thesis Title : Storm Surge impact on beach Morphology in Kuala Terengganu,
Terengganu

Student Name : Wan Amrul Jaahiz bin Wan Abd Razak
Role : Main Supervisor
Status : Active (2020 – present)

Course work

Thesis Title : Integrated Coastal Zone Management. Assessment of shoreline
evaluation and its impact on coastal community throughout Coastal
Vulnerability Index (CVI)

Student Name : Mohd Sobri Amri Mohd Noor
Role : Main Supervisor
Status : Graduated (2018 – 2019)

Thesis Title : Integrated Coastal Zone Management. Assessment of shoreline
evaluation and its impact on coastal community throughout Coastal
Vulnerability Index (CVI)

Student Name : Norasyikin Ahmad
Role : Main Supervisor
Status : Graduated (2018 – 2019)

Thesis Title : Integrated Coastal Zone Management. Assessing the Impacts OF Kuala
Terengganu City Centre (KTCC) Development Towards the Local
Community

Student Name : Wan Suhardi bin Wan Md
Role : Main Supervisor
Status : Graduated (2019– 2020)

Thesis Title : Integrated Coastal Zone Management. Assessing the Impacts OF Kuala
Terengganu City Centre (KTCC) Development Towards the Local
Community

Student Name : Wan Aizuddin bin Wan Mohd Nasir
Role : Main Supervisor
Status : Graduated (2019 – 2020)

Master Degree (International Student)

Thesis Title : Shoreface characterization and Depth of Closure calculation under Monsoon regimes along Terengganu Coast
Student Name : Charroux Sarah Annie Denise
Role : Main Supervisor
Status : Graduated (2018 – 2019)

Thesis Title : Monsoon vs typhoon impacts on intertidal beaches along Terengganu Coast, Malaysia
Student Name : Plunian Réjane
Role : Main Supervisor
Status : Graduated (2018 – 2019)

First Degree Students

Thesis Title : Coastal erosion impact on coastal community
Student Name : Nur Raihah Hazirah Ramli
Role : Main Supervisor
Status : Graduated (2018 – 2019)

Thesis Title : Digital Elevation Model (DEM) for flood mapping at Universiti Malaysia Terengganu Campus
Student Name : Kaannappar A/L P.Chandrasekaran
Role : Main Supervisor
Status : Graduated (2018 – 2019)

Thesis Title : Spatial observation of diatom for indicator sediment erosion
Student Name : Muhammad Izwan Yazin
Role : Main Supervisor
Status : Graduated (2018 – 2019)

Thesis Title : Beach morphodynamic influence by monsoon at Terengganu coast. Universiti Malaysia Terengganu
Student Name : Nur Fatimah Shariful Azham
Role : Main Supervisor
Status : Graduated (2018 – 2019)

Thesis Title : Coastal erosion and the necessity for insightful of coastal protection at Pengakalan Maras beach

Student Name : Nurin Adina Roslee Jelani

Role : Main Supervisor

Status : Graduated (2018 – 2019)

Thesis Title : Adaptation of coastal defence structure in Terengganu coast

Student Name : Muhammad Aizat Mod Rashid

Role : Main Supervisor

Status : Graduated (2019 – 2020)

Thesis Title : The coastal morphodynamic in East Coast of Thailand and Peninsular Malaysia

Student Name : Lee Shin Yun

Role : Main Supervisor

Status : Graduated (2019 – 2020)

Thesis Title : The coastal vulnerability index (CVI) at east coast of Peninsular Malaysia

Student Name : Aditya Bramana Putra

Role : Main Supervisor

Status : Graduated (2019 – 2020)

Thesis Title : Coastal imaging monitoring for beach changing in Terengganu, Malaysia

Student Name : Nasuha Mohd Shaffie

Role : Main Supervisor

Status : Graduated (2019 – 2020)

Thesis Title : The occurrence of marine habitat after coastal revolution at Kuala Terengganu.

Student Name : Abdul Hafiz Aiman Shamsul Amri

Role : Main Supervisor

Status : Graduated (2019 – 2020)

Thesis Title : Process of beach changes and its impact to fisherman community

Student Name : Sharin Mohamad Ramli

Role : Main Supervisor

Status : Graduated (2019 – 2020)

Thesis Title : Simulation of wave overtopping on eroding beach due to storm surge
Student Name : Toh Siaw Hui
Role : Main Supervisor
Status : Active (2020 – present)

Thesis Title : Dynamic of rip current at longshore uniform embayed beaches and groynes
Student Name : Umami Hajidah Mohamad Asri
Role : Co- Supervisor
Status : Active (2020 – present)

COURSE TAUGHT

- Coastal Processes
- Coastal Zone Management
- Field Course
- Earth And Space Science I
- Earth And Space Science II
- Meteorology

LINKS

- SCOPUS : 57191170820
- Researcher/ WoS ID : A-5487-2019
- ORCID : 0000-0002-8534-0113
- Researchgate : https://www.researchgate.net/profile/Effi_Helmy_Ariffin

JOURNAL REVIEWER

- Science of the Total Environment
- Progress in Earth and Planetary Science
- Scientific Report
- Geological Journal
- Journal of Ocean & Coastal Management
- Journal of Regional Studies in Marine Science
- Journal of Coastal Conservation
- Jurnal Teknologi
- Journal of Sustainability Science and Management
- Journal of Social Science and Humanity