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MARE research framework

Organisation profile



The name of the partner organisation:

Universiti Teknologi PETRONAS (UTP)

Contact person and e-mail address:

Dr Shaharin A Sulaiman (shaharin@utp.edu.my)

Departments or other academic units at your organisation concerned with MARE-related topics:

1. Department of Civil & Environmental Engineering
2. Department of Geosciences
3. Department of Mechanical Engineering
4. Department of Petroleum Engineering

Current and past projects implemented at your institution and concerned with MARE topics:

Add as many lines as necessary

Project title	Funding agency	Project topics concerned (2-3 keywords)	Type of the project (research, education, mobility, capacity for the organization or external stakeholders, etc)	Possible links to MARE (joint activities, agreements, ...)
Heavy Minerals in Coastal and Fluvial Sediments: Provenance Indicators and Distributions in The Selected Fluvial and Coastal of Terengganu Malaysia	Yayasan UTP (YUTP)	Coastal sediment, minerals	Research (in progress)	Joint research

Identification of Mineral Potential Using QME Method in Disturbed Fluvial Systems for Volumetric & Economic Assessment	Ministry of Higher Education Malaysia (FRGS)	Coastal sediment, minerals	Research (in progress)	Joint research
Mangrove restoration project in Tanjung Kepah, Lekir, Perak, Malaysia	UTP Research & Innovation Fund (URIF)	Mangrove rehabilitation, environmental sustainability	Research	Joint activities
A Socio-Engineering Study on Littoral Morphodynamics Along Teluk Nipah Beach, Pangkor Island	UTP Research & Innovation Fund (URIF)	Coastal erosion, sediment transport	Research	Joint activities
Enhancement of learning experience in Design of Coastal Structures through a systematic problem-based learning approach	Scholarship of Teaching and Learning (SoTL)	Problem-based learning, real life project, site investigation	Research	Joint activities, publication

PHD Programs available

Add as many lines as necessary

- PhD in Civil Engineering

Topics of PhD thesis (or other graduate works if you do not have a PhD program)

Add as many lines as necessary

- Hydrodynamic characteristics of a semi-circular breakwater system for wave protection of mangrove rehabilitation sites (Dr Teh Hee Min)
- Development of an oscillating water for energy harvesting at offshore oil rig platforms (Dr Teh Hee Min)
- Perceptions and Benefits of Urban Lakes Under Different Environmental Conditions (Prof Nasir Shafiq)

- Graphene Oxide modified engineered cementitious composites for sulfur pit treatment in oil refineries (Ir Dr Mohamed Mubarak Abdul Wahab)
- Passenger Vehicle Instability during Flood Events (AP Ir Dr Zahiraniza Mustaffa)
- Geospatial Temporal Framework on Landslides Mitigation Strategies for Pipelines (AP Ir Dr Zahiraniza Mustaffa)
- Assessment of Hydraulic Performance in Constructed Wetland (AP Ir Dr Zahiraniza Mustaffa)
- Vulnerability Model of the Partially Buried Pipeline subjected to Debris Flow Hazard (AP Ir Dr Zahiraniza Mustaffa)

Key personalities at your organisation publishing on MARE -related topics:

Name	Key words (2-3) describing research interests	Personal webpage, if applicable
H.M. Teh (2021). Promoting Problem-Based Learning Through a Site Investigation at a Problematic Beach in Teluk Nipah. Book chapter. UTM Press. (In review)	Problem-based learning, real life project, site investigation	Nil
Muhammad Bello Ibrahim*, Zahiraniza Mustaffa, Abdul-Lateef Babatunde Balogun, Indra Sati Hamonangam Harahap, Mohammed Ali Mohammed Al-Bared, Mudassir Ali Khan (2021) Spatio-temporal Landslide Risk Analysis using machine learning principles: A case study of Bukit Antarabangsa Landslides Incidence. Journal. Applied Sciences (Under review)	Spatio-temporal, landslides, machine learning	Nil
Ebrahim Al-Qadami, Zahiraniza Mustaffa, Eduardo Martinez-Gomariz (2021) Six Degrees of Freedom and Coupled Motion Numerical Simulation on a Full-Scale Static Vehicle Stability Under Subcritical and Supercritical Flows. Journal. (to be submitted)	Subcritical and supercritical flows, vehicle stability	Nil
Mohamad Shaufi Sokiman	Coastal sediment, minerals	Nil

Current research profile of the organization in relation to MARE topics:



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The Civil Engineering expertise are able to provide current assessment and prediction methods on topics related to coastal mangrove rehabilitation, coastal protection, wetlands, floods as well as oil and gas related business.

At the Geoscience Department, the current research interest and focus are mainly looking into sediment properties and mineral distribution from the perspective of fluvial and coastal environments.

Ambitions of the organization (in terms of research topics) or aspired activities in relation to MARE topics (i.e. research collaboration agreements, phd supervision, internships for phd students to Eu partners)

UTP is actively involved in international collaborations. We look forward to signing a few MoUs with partners from Vietnam and EU in all aspects (research, academic, student experience). We are open to all kind of activities which include, but not limited to, joint research, staff exchange, student exchange, joint short courses, joint supervision of postgraduate students, and joint publications.

Obstacles and barriers hampering the aspired developments

The present pandemic would be the major barrier for the aspired activities. Other than that, we normally do not have much obstacles; it's more about the willingness of both parties to work together.

Enabling conditions and positive factor behind your current successes in relation to MARE -related research developments, and/or making you hopeful about your ambitions:

The university has a strong ambition in the three pillar of its organization, which are research, academics and student experiences. Internally, we have allocations for staff and students to be involved in international activities, and this is usually in the form of exchange activities with organizations whom we sign MoU's with. In the aspect of research, we adopt a lot on the concept of matching grants with many countries. So far the number of joint research of this kind has been growing steadily. Overall, in the last 10 years the variety of activities has been encouraging and has become catalysts for future activities.

Specific capacities you want to develop to reach you aspired MARE-related research goals, such as equipment, training for academic or technical staff, access to international databases, external experts support or PhD supervision etc etc

Through this project we are looking forward to get training for our staff by experts from different countries on the latest method and technology in relation to MARE issues. This could be in form of societal support, supervision of postgraduate students, regular seminars etc.



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Are there any national research or development policy objectives that support your current or aspired MARE-related research developments? Please expand on this, if so

Looking at recent development and governmental policies there are few agencies governmental, and government related that focusing on the research related to MARE. i.e. – Department of Mineral and Geoscience, Department of Irrigation and Drainage, Malaysia, National Hydraulic Research Institute of Malaysia (NAHRIM), Maritime Institute of Malaysia (MIMA), Institute of Geology Malaysia, and Geological Society of Malaysia.

What are specific enabling conditions or obstacles for the development of research training at your organization – in general, and in MARE-related fields

The key enabler in UTP is graduate assistantship scheme which is allocated at a limited for every lecturer, so that they can receive students who would be funded by the university. However, slowly this scheme will be abolished with the hope that lecturers could find their own funding to support students. There are indeed a number of external research grants (national level) available for lecturers although the competition can be regarded as stiff.

Another issue is the fact that there is no specific group that looks into MARE. The existing students are directly under the program of Civil Engineering and Geosciences degrees, which is rather a general area. Although it can be a good idea to form a group or research cluster, such organization would usually involve complex buy-ins and approval, which can be difficult. Furthermore, the mentality in Malaysia for such move would be to question the tangible commercial benefits.