

Muhammad Shazzad Hossain is undertaking research on offshore foundations and anchoring solutions for more than 12 years. He has provided world leading research for mobile jack-up rigs. He has exposed the mechanisms of punch-through failures, costing \$10~50 million/incident, and developed novel spudcan shapes for mitigating punch-through and spudcan-footprint interaction issues. He has established a new paradigm for estimating spudcan resistance directly from in-situ site investigation data.

Hossain has explored the fundamentals of calcareous sediment, and revealed the seabed deformation mechanisms during installation and loading of dynamically installed anchors. He has developed dynamically installed 'fish' shaped anchor, adopting a geometry taken from nature, for cost-effective mooring of floating oil and gas drilling platforms, wind turbines and plastic collection nets.

He completed a PhD from the University of Western Australia in 2009. He is an Australian Research Council (ARC) Future Fellow, and a core member of ISO TC67/SC7/WG7/P4.

His recent research focus includes

- (i) Collection of plastics from rivers and oceans, and innovative recycling solutions
- (ii) Novel shape of dynamically installed anchors
- (iii) Constitutive model for calcareous silt
- (iv) Soil-structure and soil-soil interface friction models through interface friction, SEM, ESEM, cryo SEM and XRD tests
- (v) Geochemistry and mitigation of drought