

# **Instrumented Robotic Platform for Measuring the Interface Resistance between Pipelines and Offshore Soils**

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## **Abstract**

The stability of offshore pipelines is governed by geotechnical considerations that are still being investigated and just being understood. The proposed research is aimed at designing and constructing an innovative, cost-effective, and reliable mechanism to quantify the interface resistance between offshore pipelines and soils in-situ. This will be achieved by measuring the interface shear resistance between an artifact that will resemble the pipeline coating and the surrounding soil in its undisturbed state. The proposed mechanism should have the capacity to deploy the pipeline artifact on the seabed and displace the artifact in a controlled environment while measuring the soil resistance and the associated artifact displacement. The proposed testing mechanism is envisioned to constitute an effective and revolutionary practical alternative to measuring the pipe-soil interface in a reliable and cost effective manner.