Development of Wireless Sensor for Continuous Real-Time Oil Spill Thickness and Location

Imad El-Hajj, Ali Chehab, Ayman Kayssi, Walid Saad

Department of Electrical and Computer Engineering, AUB

Marine pollution by oil spills is a devastating environmental hazard, requiring a low-cost efficient system for continuous and real-time thickness measurement and localization of floating oil. Knowing that none of the previous detection methods has managed to fully meet these requirements, it is necessary to devise a new technique to guide and speed-up the cleanup process of oil spills. We propose a sensor device, capable of sensing, processing and transmitting location and thickness information about an oil spill. The feasibility and potential of the device have been assessed and verified by developing a prototype. The objectives of this proposal are to: (1) miniaturize the sensor design so it becomes feasible to store and deploy them in large numbers; (2) improve the detection technique to allow higher resolution of detection for thin slicks; (3) improve the packaging and coating for better operation is a harsh environment; (4) test the sensor unit under various conditions.