

**Oil Slick Thickness Measurement:
A Possible Solution to A Long-Standing Problem**

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Abstract

The measurement of oil slick thickness has long been a relative science, with absolute measurement eluding the remote sensing community. Knowledge of oil slick thickness would significantly benefit both the spill response and scientific research communities. The effective direction of oil spill countermeasures such as *in situ* burning and dispersant application depends on knowledge of slick thickness and volume. Without accurate thickness information, application of these technologies in a spill response is a hit-and-miss scenario at best. In the research community there remains a great deal to be learned about oil slick spreading, and dispersant effectiveness. A remote sensor which can provide an absolute measurement of oil thickness, could begin to unravel some of the mystery surrounding the dynamics of oil slick spreading and provide a real method of measuring dispersant effectiveness. One of the most exciting roles for the slick thickness measurement sensor would be the calibration of other pieces of remote sensing equipment. Some of the most economical and commonly used airborne remote sensors are the ultraviolet/infrared (UV/IR) scanners and cameras. The UV portion of the sensor responds to the entire area of the slick including the thin sheen areas. The thermal IR portion of the sensor provides information on the thicker portions of the slick. The integration of data from the UV and IR provides an indication of the thick and thin portions of the slick. This is however a relative picture with little known about the actual thicknesses involved. Calibration of these economical instruments with a sensor capable of absolute slick thickness measurement would be a boon to the response community.