Immediate Response System for Oil Spills

Dubovsky, Avi
Shafran, Roey
Hamoud, Tamer

Purpose of the Experiment As the demand for oil products increases so does its maritime transportation and thus enhance the risk for an oil spill to occur. Oil Spills can cause major environmental and economical damage that can become irreversible if treated inefficiently. For a treatment to be considered efficient, it has to begin as fast as possible after the start of the lick, be accurate and must cover most of the spilled oil. Procedures Used To answer the parameters of an efficient treatment, our response system is fully computerized, located on the oil tanker itself and categorize a spill by it size to treat it in the best possible way. The system continuously follows the oil level in the tanker by using computer vision techniques and can detect a change in the oil level, then categorize the spill by it size. If a spill is considered small, a sub-system of sealing balls is used to seal the leak. If the spill detected is big, chemicals that accelerate the degradation of the oil (called Dispersants) are being pumped into the damaged tank. Results This system allows an immediate response to a spill of any size, with accuracy up to 100%. The system decreases the environmental damage caused by a spill and in addition saves and reduce equipment and materials needed to treat a spill. The use of the system can prevent any spill from becoming an irreversible environmental and economical disaster.

Awards Won: