

Vacuuming Up an Oil Spill

By Alyssa Danigelis | Tue Nov 16, 2010 12:22 PM ET





I've heard of [a company making a vacuum cleaner from ocean plastic](#) but not a realistic way to actually vacuum oil out of the ocean. A group of Norwegian grad students appears to have figured out a way to do it using a handheld device they invented.

Previously, Swedish vacuum cleaner manufacturer Electrolux brought attention to the massive volume of plastic caught in ocean gyres [by making several concept vacuum cleaners](#) out of marine plastic. Plus, MIT researchers came up with a design for [a swarm of giant solar-powered robots](#) that could pull oil out of the water around the clock using a conveyor belt-like system involving oil-absorbing nanofabric. The idea is great, but I really like what this group of Norwegians has come up with.

Several grad students at the Norwegian University of Science and Technology invented a vacuum device that can spit out bark or another material to absorb the oil, and then sucks the oil-laden material up. According to [the university](#), the device is four times better at cleaning oil than conventional techniques. Grad students Silje Rabben, Marius Høver Montarou, Arne Sigmund Skeie worked with an oil spill manager to come up with a design that automates a process usually done manually: Putting absorbent material into the water, removing it, and then scrubbing down rocks by hand.

The students figured that plenty of oil-absorbing material is already being used, including bark, peat moss and chemicals so why not make the process faster? Their vacuum weighs roughly 20 pounds, first shoots out the absorbing agent, and then brushes in the device's head rotate to thoroughly mix the material with the oil. Then a mechanism reverses it all, sucking the contaminated material back through.

I like that the device, which is called MOSE for "Mechanical Oil spill Sanitation Equipment", can also effectively scrub down oil-covered surfaces while it deals with the absorbent material. Perhaps this is precisely the device for [the super material](#) invented by nonwoven technologies professor Seshadri Ramkumar at Texas Tech University. His highly-absorbent biodegradable material is made from raw cotton with an activated carbon core to lock in mousse-like oil from spills.

The Norwegian students have already created a company, called [Kaliber Industrial Design](#), to market their MOSE vacuum cleaner. Their design has already won several innovation awards in Norway. The only drawback I see is scale. Granted, the device is primarily envisioned as a solution for smaller spills like ones from vehicular or truck accidents, but it has portability that should only get better as the students work to lighten the design.

The massive, horrific Gulf spill isn't going to be resolved overnight. By the time the MOSE device advances,

there will likely still be an equally massive need for it.

Photo: Norwegian University of Science and Technology grad student Silje Rabben at right demonstrates the oil spill vacuum cleaner she and several other grad students created. Credit: [Nina Tvetter/NTNU](#).

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