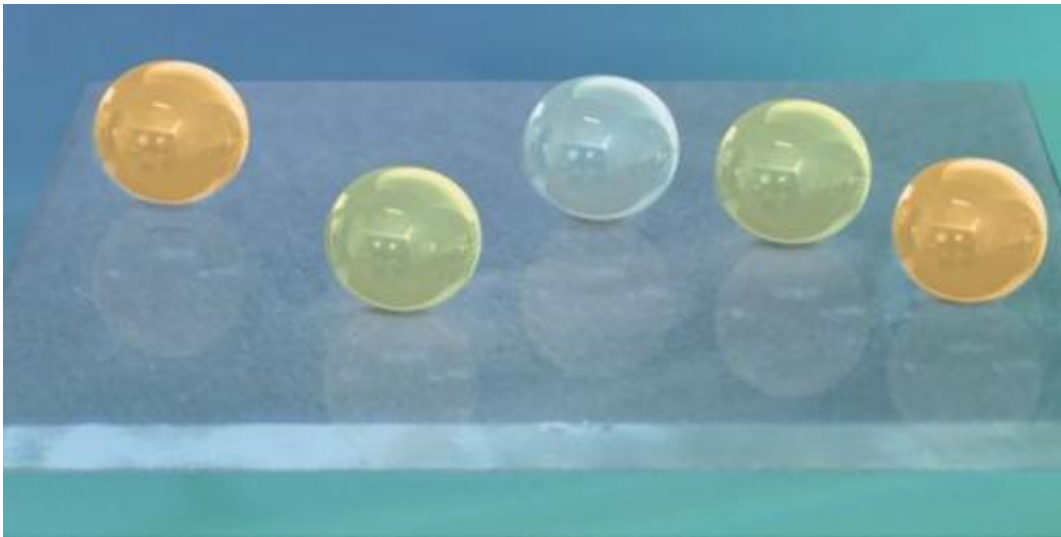


# Discovery could lead to new way of cleaning up oil spills

June 21 2013, by Brian Murphy

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Oil droplets bead on a submerged glass surface. UAlberta researchers developed a way to make the glass repel oil, a discovery that could lead to new technologies for cleaning up oil spills and preventing harm to marine ecosystems.

(Phys.org) —University of Alberta mechanical engineering researchers have shown that a simple glass surface can be made to repel oil underwater. This has huge implications for development of a chemical repellent technology for use in cleaning up oil spills.

At the time of spills, marine flora and fauna may come into contact with the oil, wreaking major damage. Underwater oil-repellent technology can potentially prevent the toxic effect of oil on marine ecosystems.

Lead U of A researcher Sushanta Mitra and his team members Prashant Waghmare and Siddhartha Das used surfactants, a key ingredient in soaps and detergents, as a way of making an underwater glass surface repel oil. The researchers propose that making use of this simple principle, large concentrations of surfactant can be added to oil-contaminated water, thereby ensuring that [marine plants](#) and animals exhibit similar oil-repellent characteristics and enabling them to overcome the deadly consequences of an oil spill.

Mitra says the most important step in demonstrating this property of surfactants is to ensure accurate deposition of an oil drop on the underwater glass surface. The U of A team came up with the first possible technique to reliably and controllably deposit oil drops on such underwater surfaces.

Mitra and his U of A team published two papers related to their findings. The technique related to the injection of oil on a surface beneath the water was published in the journal [Soft Matter](#), a publication of the [Royal Society of Chemistry](#), and will appear as a cover article in the upcoming issue.

The research revealing the effect of surfactant in making an underwater [glass surface](#) extremely oil-repellent was published in the journal [Scientific Reports](#).

Provided by University of Alberta

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