

# Researchers are using West Texas cotton for biodegradable towel designed to clean up oil spills



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LUBBOCK, TX (KCBD) - Two young entrepreneurs have brought an idea out of the labs and into U.S. Markets that is the first of its kind.

“Towelie,” a simple name for a seemingly simple product with the potential to clean up a complicated environmental and ecological problem: oil spills in bodies of water.

It’s an affordable, nonwoven fabric material that’s durable and biodegradable with the ability to hold up to 15 times its weight in oil. It floats on water, all without leaving micro-plastic residue.

Ronald Kendall Jr. and Luke Kitten have been working on the “legwork” for this project since high school with Texas Tech professor Seshadri Ramkumar, Ph.D., FTA (Hon.) who works in the Nonwovens and Advanced Materials Laboratory/Department of Environmental Toxicology.

“Since then we have been developing our skills of business and engineering for myself and have gained the ability to produce a product like this that is viable to the current U.S. market,” Kitten said.

Kendall majored in Energy Commerce and founded the company, E Innovate, LLC, to continue researching and producing environmentally-friendly solutions for complex contamination problems.

“The real challenge was being able to develop the technology to use natural fibers as an absorption core (cotton) for the Towelie. That was the biggest hurdle that we and our collaborators have had to overcome,” Kendall said.

This cloth takes advantage of the durability and absorbency of cotton fibers that normally goes to making textiles like denim, opening up new uses in industrial markets for the products of West Texas farmers. Another thing that makes this technology unique is its ability to biodegrade, as opposed to synthetic absorbents already on the market that don’t break down and leave small bits of micro-plastic fibers behind, adding to plastic pollution in the oceans.

The value of Towelie is already being applied with major oil and gas companies in the Permian Basin, being used to replace synthetic absorbents and disposable towels as a way of cleaning up grease and other hydrocarbons on job sites; cleaning leaks from well heads, rods and tubes that develop in oil and gas drilling operations.

But, Kendall says this product’s uses don’t stop there: “What’s really exciting about Towelie is not only is it biodegradable and highly capable for oil absorption, but it’s also naturally hydrophobic with no chemical treatment or addi-

tives... this product is able to float on water... Highly effective for remediating oil spills... It allows it for multiple uses with a quilted surface and highly-abrasive surface that is able to cut through anything while still holding together and not ripping when it's full of oil."

They demonstrate Towelie's uses by putting out a tank of water and pouring oil in. The oil separates from the water, leaving a thick dark layer on the surface. They lay the Towelie on top of the oil, trying to push it down and it simply floats and returns to the surface. When they pull the Towelie from the water, the oil has been absorbed while repelling the water, leaving a clear surface.

They show another oil absorbent rag that is on the market, but they explain it's full of plastic and leaves behind micro-plastic fibers that "contributes to micro-plastic pollution, which is a huge issue we are finding in our ecosystem and oceans today."

Dr. Ramkumar says this technology is great for the future of ecological clean-up and people all over the world.

"They started a company out in Lubbock that has translated their product into the marketplace... that product is going to save a lot of lives... particularly marine life as well protect people from toxic oil spills and chemicals. This is what every university aspires these days and this is why Texas Tech is very big in promoting research that could translate into a commercial product," Ramkumar said.

This technology is available for purchase online at [TowelieGlobal.com](http://TowelieGlobal.com)

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