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## Oil spill: Indian-origin scientist offers a solution

*In the form of non-woven cotton carbon absorbent wipes*

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*Fibertect is different from cotton absorption technologies in its combination with carbon*

*Fibertect is all-natural, 100 p.c. biodegradable and one sheet can be wrung and reused five times*

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Houston: As British Petroleum struggles to contain the oil spill in the Gulf of Mexico, an Indian-origin scientist from Texas University has created a special cotton fabric that can clean up crude oil up to 40 times its weight and help in cleaning efforts.

Seshadri Ramkumar, Associate Professor of the Texas Tech Institute of Environmental and Human Health, has created a non-woven, environment-friendly cotton carbon absorbent wipes called Fibertect. "Cotton fibre contains 0.5 per cent wax, which enables it to soak up 40 times its weight."

"The chemistry of cotton makes it the ideal material for oil absorption with its waxiness, strength when wet, absorption capacity and ability to biodegrade," said Professor Ramkumar, who described his discovery as "a blessing in an ironic situation." "The synthetic booms soak up only a third of what cotton absorbs and are not biodegradable. You take those plastics and where do you put them? In landfills. They will stay put forever," he added. "Add chemicals and it could absorb up to 70 times its weight," he said.

All-natural way

Through his research with non-woven cotton, Professor Ramkumar may have found an all-natural way to absorb oil from spills.

Rather than spending money and effort on containment structures and synthetic materials, he recommends utilising cotton.

"We are the only ones.. to my knowledge...focused on taking cotton to oil absorption using non-woven technology," he said.

Unlike apparel production, there is no need to go through the expensive processes of dyeing, bleaching and weaving the cotton.

One cotton product Professor Ramkumar invented last year was Fibertect, a commercially sold non-woven decontamination wipe that absorbs toxic chemical substances.

This is significant because now that the oil has reached the coastline, the non-woven cotton technologies could be doubly beneficial.

"Any wildlife rehabilitation that will occur we believe could be assisted with the Fibertect invention as well as other non-woven applications from his lab," said Ronald Kendall, founding director of Tech's

environmental institute.

“There are just so many applications of Professor Ramkumar's technology to take cotton and turn into products that we never even thought of before,” he added.

Several million feet of booms, lightweight tubes used to recover oil, have already been tossed into the ocean, according to the National Oceanic Atmospheric Administration.

What makes Fibertect different from other cotton absorption technologies, however, is its combination with carbon.

It is a three-layer design consisting of a top and bottom layer of cotton to absorb oil and a middle layer of carbon that absorbs hydrocarbons and harmful carcinogenic vapours released from the oil.

Why absorption needed?

Professor Ramkumar said his unique use of activated carbon fabric in oil clean-up is extremely beneficial because the toxic vapours could potentially destroy ecosystems and cause cancer in humans if they are not absorbed.

Professor Ramkumar said he and other researchers are simply taking what nature provides and applying it in new ways.

“Mother Nature has given cotton wax to protect it,” he said.

“The natural wax on the cotton helps to hold the oil together. So, wax has affinity towards oil, and then the carbon has affinity towards vapour, it holds the vapour.” Because Fibertect is all-natural, unlike synthetic plastic booms previously used to clean oil spills, it is 100 per cent biodegradable and one sheet can be wrung and reused up to five times.

According to [www.propublica.org](http://www.propublica.org), the only cleaning method currently being used by BP is dispersants, which is an aerial spraying technique.

Samples of Fibertect have been sent to the BP but no decision has been made on whether or not to use it.  
— PTI

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