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EPA approves Tech cotton technology for use in Deepwater Horizon oil spill cleanup

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Fibertect™, a nonwoven cotton-carbon material, created by Seshadri Ramkumar, an associate professor of nonwoven materials for The Institute of Environmental and Human Health, has been approved by the Environmental Protection Agency as a sorbent for oil application in the cleanup of the Deepwater Horizon oil spill.

The EPA approval came after First Line Technologies, a Virginia-based company that commercializes Fibertect™, sent a crew to Grand Isle, La. to test the absorption material on oil that had washed ashore.

"It was observed that when the oil was viscous, and even semi-solid," Ramkumar said, "the Fibertect™ was able to absorb the oil."

Not only is the oil spill contaminating the surface of the water, but recently the National Oceanic and Atmospheric Administration — NOAA — has reported plumes below the surface releasing toxins.

Ramkumar said Fibertect™ will prove to be more successful in cleaning than other methods that are being used, such as dispersants, because it is a non-toxic material that eliminates harmful vapors released by the oil.

"Recently, there have been some reports, which have been endorsed by NOAA," Ramkumar said, "that even at a depth of 400 meters below the surface of sea there are some plumes, the oil is seen as a plume from which volatile gases such as benzene and other volatile forms of the oil are emanating, and these volatile gases are known to have carcinogenic effects, and they are also known to give some catastrophic damage to the marine life, so this is one important finding."

He said these plumes are reducing oxygen levels by up to 40% and that Fibertect™ not only absorbs oil, but also combats the oxygen depletion.

Originally, Ramkumar did not develop Fibertect™ for oil absorption but said although this oil spill is a tragedy, it was a perfect fit for his research and the advancement of the technology.

"My original application was to develop a wipe, cleaning material for soldiers and fighter planes," Ramkumar said, "just



Muralidhar Lalagiri

SUDHEER JINKA (LEFT) and Vinit Kumar Singh, both graduate students working within The Institute of Environmental and Human Health, produce nonwoven cotton in Seshadri Ramkumar's laboratory at the institute.



First Line Technology

FIBERTECT™, A NONWOVEN cotton product initially designed at Texas Tech for the cleaning of toxic chemicals, absorbs semi-solid oil during its initial evaluation in Grand Isle, La. The Environmental Protection Agency has approved the product for use in the cleanup of the Deepwater Horizon spill.



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dealing with toxic vapors.”

The use of Fibertect™ to clean the oil spill has led to the EPA approval which will lead to the development of new Fibertect™ materials such as gloves, face masks that block toxins, carpet, industrial and household cleaning materials and more.

Amber Dean, associate managing director of licensing and business development of technology commercialization for Tech, said the EPA approval of Fibertect™ is bringing notoriety to the university and Ramkumar.

“There has been a lot of interest,” Dean said, “Texas Tech has been in the news quite a bit because of it.”

She said it is also bringing funding for the university.

“In addition to a portion coming back to Tech,” Dean said, “a portion is going to the researcher. There’s also a portion going to Ramkumar’s college and Ramkumar’s department for additional research. So, it’s very beneficial for us to license a technology and for there to be revenues generated from the sales of that technology.”

Fibertect™ has licensing agreements with First Line Technologies as well as Hobbs Bonded Fibers in Waco.

Todd Reno, director of business development at the Reese Technology Center and Tech alumnus, said this approval will help bring Tech to a new level of recognition.

“When Tech can get out in front and be the spokesperson and be the problem solvers for any kind of issue that’s a good thing,” Reno said, “but when it’s something of this magnitude, obviously it’s going to bring additional attention to Tech and to the university.”

He said Ramkumar and his invention will help bring Tech to status as a National Research University because researchers and students from all around the world want to work with him.

“Part of the Tier One plot is you have to bring in researchers,” Reno said. “You have to bring in this top-notch talent.”

Ramkumar said within a year there will be new products on the market and High Plains cotton farmers will see an increase in revenues.



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