SAN ANTONIO — A Texas Tech University research team has discovered that low-grade cotton made into an absorbent nonwoven mat is capable of collecting up to 50 times its own weight in oil.

The results were published online in the July edition of the American Chemical Society's journal Industry & Engineering Chemistry Research. The team, led by Seshadri Ramkumar, a professor in the Department of Environmental Toxicology, hopes this becomes an efficient tool to help with the clean-up of oil spills,

“With the 2010 crude oil spill in the Gulf of Mexico, which resulted in the major spill of about 4.9 million barrels of oil, it became apparent that we needed new clean-up technologies that did not add stress to the environment,” Ramkumar told Texas Tech Today. “This incident triggered our interest in developing environmentally sustainable materials for environmental remediation.”

Ramkumar previously created of Fibertect, a decontamination wipe capable of cleaning chemical and biological agents and was developed by researchers at Texas Tech as well. The four-year project focused on the fiber structure and its capabilities as an oil absorbent.

“Our research shows cotton as a high-performance fiber that can be deployed to clean up toxic oil spills,” Ramkumar said. “More importantly, the oil sorption by environmentally friendly and natural sorbents like aligned nonwoven cotton made from raw unprocessed cotton and correlation with its characteristics, such as cotton quality, fineness and maturity, are not reported at all to our best knowledge.”

Ramkumar and his team are now working with the university’s Office of Technology Commercialization to try to commercialize the new technology within the next year.