



# Indo-U.S. Collaborative Cotton-Based Product Can Absorb Oil Spills Quickly, Sustainably

ELYSSA SANDERS | October 5, 2021



**Nonwoven cotton could be the solution to recurring oil spills around the globe, according to one Texas Tech professor.**

*On Sunday (Oct. 3), approximately 126,000 gallons of crude oil leaked into the Pacific Ocean after a pipeline burst near the Southern California coast. Now, the U.S. Coast Guard is racing against time to contain the spill and mitigate environmental damage.*

*Seshadri Ramkumar, a professor of chemical countermeasures and advanced materials at Texas Tech University's Department of Environmental Toxicology, in collaboration with his research team and the India-based company Jayalakshmi Textiles, has developed a sustainable cotton product that can absorb oil instantaneously.*

*"Oil spills have become a recurring issue around the world, destroying wildlife habitats, compromising food sources and threatening human health," Ramkumar said. "With this product, Texas Tech is at the forefront of research developments in oil-absorbing materials."*



## Texas Tech Today

*Using untreated low-grade cotton, Ramkumar and his team developed an absorbent, nonwoven mat capable of collecting 50 times its own weight in oil. Raw, low-micronaire cotton is hydrophobic, meaning it will float on the surface of the water without sinking – ideal for toxic oil absorption.*

*While most commercial oil-absorbing materials are synthetic, this mat is made of natural materials that are biodegradable and safe for marine life. The product is ready for distribution and available in 100% cotton or 90% cotton formulations – both are reusable and environmentally safe.*

*“Microplastics are harmful to ocean life, so the use of synthetic materials to treat oil spills ultimately compounds the problem of ocean pollution,” Ramkumar said. “Cotton-based products are more sustainable and will not contaminate the ocean with microplastics.”*

*Ramkumar and his team were inspired to research oil-absorbing technology after the Deepwater Horizon spill of 2010, which released almost five million barrels of oil into the Gulf of Mexico. Now, Texas Tech's research could have significant environmental implications in the aftermath of California's devastating oil spill.*

*This work highlights the importance of scientific collaboration between India and the U.S. Timely Indo-U.S. collaborations could prove invaluable to the continued development of sustainable technology.*

*The fundamental work in Ramkumar's laboratory was supported by Cotton Incorporated.*



**Because Ramkumar proved that raw cotton works best to clean spilled oil, cotton is the base of this product.**



**Designed for marine environments, the product can absorb oil while repelling water.**