ASA Treatment for Oil Spills

Kunisch, Paul (School: Friedrich-Dessauer-Gymnasium)
Derra, Thomas (School: Friedrich-Dessauer-Gymnasium)

In 2010, 780 million liters of crude oil flowed into the waters of the Gulf of Mexico. Eleven workers and hundreds of thousands of marine birds were to die. Oil spills do not only occur in marine ecosystems, but also on roadways just outside our homes. Our intention was to make a proactive contribution to the fight against oil spills, instead of looking on and doing nothing. Inspired by studies conducted by Indian researchers that was published in a specialist journal, we initially investigated, pulp as an oil sorbent that we had impregnated with a sugar alcohol-based gelator. In our own test series, we found that the quantity of absorbed crude oil can be doubled if alkenylsuccinic anhydride (ASA), a paper sizing agent, is used for impregnation. In oil sorption experiments on a larger scale, impregnated spruce sawdust and ASA-impregnated non-woven viscose fabrics with a polypropylene (PP) content – the latter being available as wiping cloths in supermarkets – stood the test as well. By upscaling the laboratory experiment to the marine scale, we plan to use special purpose vessels to roll out gigantic, impregnated viscose/PP non-woven fabrics onto the contaminated water surface. While they are hauled in, they are routed through a roller system in which the oil is squeezed out. We have proven that this process can be repeated indefinitely. Using a pasta machine, we were able to demonstrate its viability in the laboratory. We believe that this method can open up new opportunities in the fight against oil spills.

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