

Researcher revolutionizes rubber recycling

February 28 2011

Scrap rubber has remained little more than, well, scrap -- until now. University of Akron researcher Dr. Avraam Isayev developed an innovative rubber recovery technology expected to cause a major shift in rubber reprocessing for industrial use.

Isayev, a distinguished professor of polymer engineering, and his student research team invented a unique [rubber](#) processing method using a novel technique, ultrasonic devulcanization. Isayev's patented innovation allows for the recovery of rubber materials, which has been difficult, if not impossible, due to rubber's vulcanized, or crosslinked, nature. Think scrap-tire heap. Isayev's technology enables devulcanization, or breaking, of the sulfur crosslink bonds in the rubber compound, permitting the once scrap material to be reprocessed and reused.

"Extensive experimental and theoretical studies were conducted based on this and other related inventions," says Isayev, noting that more than 50 articles and book chapters were published during the last 15 years to develop this technology. The National Science Foundation, NASA and a number of industrial companies funded the studies.

Isayev founded Avraam Corp. to develop an industrial ultrasonic extruder to carry out the process of recovering rubber from tires, roofing materials, shoe soles and other industrially significant products. World leading athletic shoe supplier Nike Inc. funded the research.

Isayev's cutting-edge research is gaining attention. NorTech, a regional nonprofit technology-based economic development organization and

catalyst for growing Northeast Ohio's emerging technology industries, selected the development as a winner of its 2011 Advanced Materials Innovation Award Feb. 24.

Provided by University of Akron

Citation: Researcher revolutionizes rubber recycling (2011, February 28) retrieved 28 April 2024 from <https://phys.org/news/2011-02-revolutionizes-rubber-recycling.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.