

Louisiana Tech researcher presents on eco-friendly nanotechnology at national conference

April 28 2011

Dr. Yuri Lvov, professor of chemistry and T.C. Pipes endowed chair in micro and nanosystems at Louisiana Tech University, recently led a symposium at the 241st Conference of the American Chemical Society (ACS), discussing his application of a more eco-friendly and cost-effective nano-material that can be used to significantly improve the properties of plastics, paints and other synthetic composites.

The symposium featured Lvov's presentation on the use of clay "nanotubes" – created from dirt and soils found in a number of places on earth – to strengthen plastics, paints, epoxies, rubber and others materials. The nanotubes can also be infused with different chemical agents, providing them with anticorrosion or antimicrobial properties.

The ACS event, recently held in Anaheim, California, is the world's largest professional chemical conference with over 12,000 participants in attendance. Lvov served as chief organizer and chairman of the Polymer-Clay Nanocomposites Symposium.

"It was an honor to organize the Polymer-Clay Nanocomposites symposium at this meeting," said Lvov. "A significant amount of time was spent contacting participants, shaping the program, selecting speakers, organizing a symposium dinner, and finding financial support for the program. We were chosen to lead this symposium because of our pioneering of the use of this new type of clay in polymer composite."

Lvov was one of the first scientists in the world to recognize the potential of naturally occurring clay nanotubes. Unlike carbon nanotubes, the clay nanotubes are available by the ton, are considerably cheaper, and are nontoxic. They also allow scientists to modify the properties to the resulting composites, in beneficial ways.

Lvov's symposium presentation detailed the technology of polymer doping with different types of dispersed clay nanoparticles. The clay, after chemical processing, can be dispersed into tiny particles of a few nanometers thick and hundreds of nanometers wide. The Louisiana Tech scientists are working with clay nanoparticles that are 50,000 times smaller than the thickness of a human hair.

As a result of the clay nanotubes' dynamic properties, Lvov says companies are very interested in this line of research and that a number of Louisiana companies have already contacted Louisiana Tech concerning the possibility of collaborative research in these areas.

Also presenting at the symposium, Dr. David Mills, professor of biological sciences and director for the Center for Applied Learning to Yield Scientific Teaching (CATALyST) at Louisiana Tech, reported on polymetacrylate clay composites for improved bone cement in orthopedic implants. Several students from Louisiana Tech's College of Engineering and Science also participated in the symposium, presenting five poster papers at the event.

"Organizing this ACS symposium helped us to establish Louisiana Tech among world leaders in the field of polymer-clay nanocomposites," Lvov said. At the speaker's dinner after the symposium, leading researchers in the field supported our initiative to organize the next Polymer-Clay Nanocomposites symposium as a part of the next National American Chemical Society Meeting in New Orleans in April of 2013."

Provided by Louisiana Tech University

Citation: Louisiana Tech researcher presents on eco-friendly nanotechnology at national conference (2011, April 28) retrieved 27 April 2024 from <https://phys.org/news/2011-04-louisiana-tech-eco-friendly-nanotechnology-national.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.