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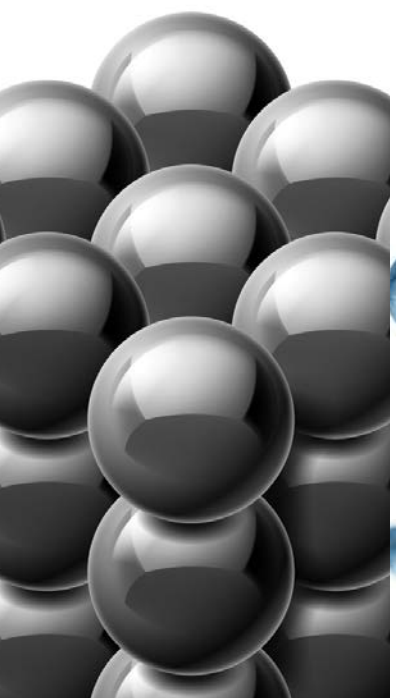

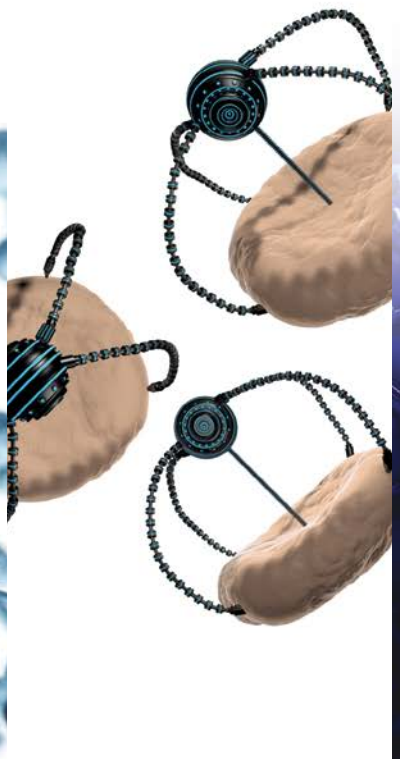

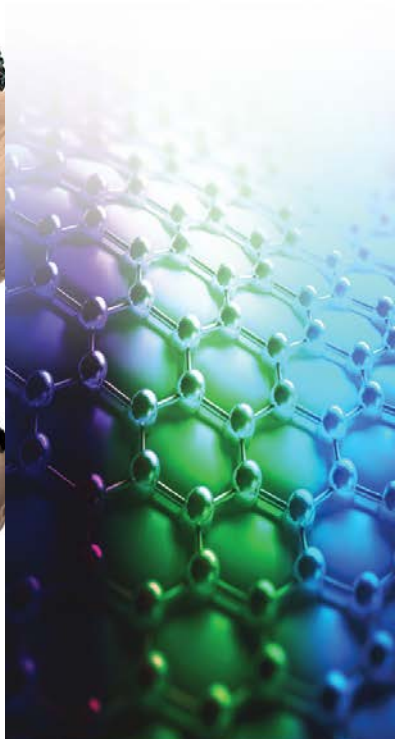

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NANO:

Hype, Yes, But Promise Too

By Matt Roush

Nanotechnology is nothing new, according to nanotechnology expert John Texter, PhD.

"The Chinese invented nanocarbon inks 3,500 years ago," said Texter, a professor of polymers and coatings at Eastern Michigan University. "They invented a combustion process for making carbon black that's still used today."

Later, Texter said, nanoparticles became a part of making rubber tires tougher and more durable, not long after the dawn of the automotive age in the 20th century.

True, nanotech got a ton of hype in the 1990s. Here in Michigan, a fellow named Rick Snyder returned to his home state in 1997, after a stint as an executive at computer maker Gateway, and set up two venture capital funds—the second of which, Ardesta, would concentrate on nanotech. Snyder also set up a magazine and website, called Small Times, to cover and promote the nanotech industry.

These days, according to Texter, nanotech can be found almost everywhere.

"Nanotech is just a hype word, but just about everyone can find a nanotech example that relates to them," Texter said.

Even humble latex paint. What makes latex paint superior to the oil-based variety is tiny particles of polymer—200 nanometers in size—suspended in water. When the paint dries, the particles bind the pigments and other materials together, making the paint film stronger and longer-lasting.

Of course, Texter is also quick to note that the field of nanotechnology has seen huge advances in the past couple of decades. Today, he's working with materials whose properties can seem alarmingly close to magic.

He can make coatings that switch from porous to impervious to water. Or that switch from transparent to opaque in the presence of a certain kind of chemical. Or that conduct electricity without water or wires.

Texter's laboratory is also working on nanotech coatings that confer resistance to the effects of ultraviolet light in a thin, transparent layer. Other coatings can be designed to resist corrosion, icing, and microbial contamination—again, in very thin layers of a near-transparent material. Oher applications include nanoparticles that give strong scratch resistance to digital media like CDs and automotive paints, and nanosized platelets that provide transparent gas barrier coatings in plastic bottles that keep carbonated beverages from going flat.

"Many new nanotechnologies with useful applications in consumer and industrial products and in medicine are coming," Texter said.

Texter was born in Pennsylvania and got his degrees–a bachelor of science in electrical engineering, a master's in chemistry, a second master's in mathematics, and a PhD in chemistry—from Lehigh University. After postdoctoral studies at the University of California at Irvine and the State University of New York at Binghamton, he worked for 20 years at Eastman Kodak, 1978-98, developing advanced coatings for films and papers. He would later run his own consulting/education company, Strider Research Corporation, before joining EMU's faculty as a full professor in 2002. He holds more than 40 United States patents and numerous service and research awards.

Matt Roush was Director of Communications and Public Relations for The Engineering Society of Detroit from March 2014 to February 2016. He is now Director of Media Relations and managing editor of the news bureau at Lawrence Technological University.