Easing concerns about the toxicity of diamond nanoparticles

New research has brightened the prospects for using nanodiamonds as drug carriers, implant coatings, nanorobots and other medical applications that take advantage of diamond nanoparticles' attractive properties.

The research is scheduled for publication Dec. 28 in ACS' weekly *The Journal of Physical Chemistry B.*

Liming Dai (University of Dayton), Saber M. Hussain (Wright-Patterson Air Force Base) and colleagues, including PhD student Amanda Schrand, explain that advances in technology have made a new generation of nanodiamonds available.

Although diamond in bulk form is inert and biocompatible, nano-materials often behave differently than their bulk counterparts. That led to concern that diamond nanoparticles might have toxic effects on cells.

"We have for the first time assessed the cytotoxicity of nanodiamonds ranging in size from 2 to 10 nm," the researchers state, adding that nanodiamonds were not toxic to a variety of different cell types. "These results suggest that nanodiamonds could be ideal for many biological applications in a diverse range of cell types," they add.

Source: American Chemical Society