Science

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Nano-based antimicrobial paint is created

Published: Jan. 24, 2008 at 12:10 PM

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NEW YORK, Jan. 24 (UPI) -- U.S. chemists have developed a low-cost, environmentally friendly nanotechnology for producing antimicrobial, vegetable oil-based paints.

The technique created by researchers at the City College of New York and Rice University embeds antimicrobial silver nanoparticles into the paints. Although silver's antibacterial, non-toxic properties have been known for centuries, coatings containing antimicrobial agents have failed commercially due to their high cost of production.

"We extensively worked on polyunsaturated hydrocarbon chains containing polymers/oils

to devise a novel approach to nanoparticle formation," said Professor George John of CCNY, the lead author of the study.

Study co-author Professor Pulickel Ajayan of Rice University said the simplicity of the process and economics should allow the commercialization of the new paints as a versatile coating material for health and environmental applications.

"Using the same approach we should be able to produce a large variety of nanoparticle dispersions useful in applications ranging from healthcare to catalysis," added co-investigator Ashavani Kumar, a postdoctoral research associate at Rice.

The scientists said the nanoparticle-embedded coating can be applied as are traditional paints to such surfaces as metal, wood, polymers, glass and ceramics.

The research is to appear in the March issue of the journal Nature Materials.