Nanotechnology restores art masterpieces

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Italian scientists are developing nanotechnologies to simply and less expensively restore paintings and other works of art.

The technology being developed by Piero Baglioni and colleagues at the University of Florence involves using water nanocontainers to restore artwork dulled by centuries-old buildups of grime and damaged from floods and failed attempts at preservation.

The researchers say tiny droplets of cleaning agents are suspended in water to form micro-emulsions that have advantages over traditional methods, which may involve the use of pure organic solvents. The micro-emulsions have a milder cleaning action that's less likely to damage fragile surfaces. In addition, they use up to 95 percent less organic solvent and have less of an environmental impact than traditional cleaning methods.

"These innovative systems are very attractive for the low amount of organic solvent ... and the very efficient and mild impact of the cleaning procedure on the fragile painted surfaces," the scientists said.

The research is scheduled to appear in the May 22 issue of the American Chemical Society journal Langmuir.