

## Antimicrobials: Silver (and copper) bullets to kill bacteria

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Summary:

A researcher has developed thin films of silver and copper that can kill bacteria and may one day help to cut down on hospital infections.

Dana Filoti of the University of New Hampshire is presenting thin films of silver and copper she has developed that can kill bacteria and may one day help to cut down on hospital infections.

The antimicrobial properties of silver and copper have been known for centuries -- last year, the U.S. Environmental Protection Agency officially registered copper alloys, allowing them to be marketed with the label "kills 99.9% of bacteria within two hours." Copper ions are known to penetrate bacteria and disrupt molecular pathways important for their survival.

Using zeolite ceramic structures, Filoti is testing the hypothesis that the combination of silver and copper might work synergistically to better kill bacteria, work that she will present on November 12 at a meeting of the scientific society AVS in San Jose. "The hard ceramic structure looks like Swiss cheese and inside the holes there are ions of silver and copper," says Filoti.

By experimenting with the ratio of the two metals and the texture of the thin films, she has been able to reduce the amount of microbes present on the surface by 99 percent. One application of these antimicrobials, which Filoti is developing in partnership with a company in New Hampshire, is an antimicrobial face mask designed to protect against pathogens that cause many hospital-acquired infections.

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### Story Source:

Materials provided by [American Institute of Physics](#). *Note: Content may be edited for style and length.*

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<[www.sciencedaily.com/releases/2009/11/091109142125.htm](http://www.sciencedaily.com/releases/2009/11/091109142125.htm)>