



## Nano-silver in socks.....no more smelly feet!

A number of household products have now been developed using nanotechnology to improve their performance. Many of these include nanoparticles, including silver nanoparticles. These products include paint, sports equipment, and socks, In the case of nano-silver socks, silver beads of silver with diameters less than 100 nm are woven into the fabric of the sock.

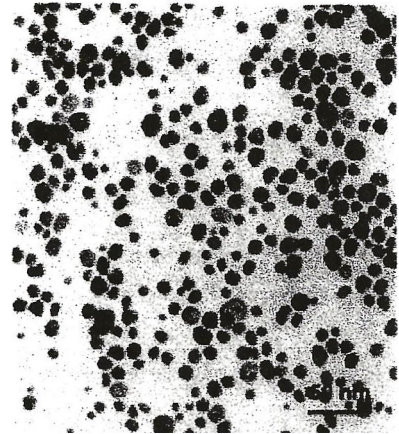
Silver is a natural "biocide" in other words it kills bacteria. However, by making the silver into nanometer size beads, it becomes even more effective. The manufacturers of the nano-silver socks claim they prevent athletes foot (a fungus!) and eliminate foot odor caused by bacteria that live on our feet.

Although the nano-silver in the socks kills the bacteria on our feet it is generally considered to be harmless to humans. You could eat a nano-silver sock everyday for a year with no risk of turning blue from the silver you swallow. There is very little silver. Silver nanoparticles have a large surface area so little is needed to interact with the bacteria. Of course, you would probably feel unwell from eating the rest of the sock!

The nano-silver doesn't just kill the bacteria on our feet. It will kill any bacteria it comes into contact with. So what happens when you wash the nano-silver socks....?

Here are some questions for your to answer and for class discussion:

1. If the silver beads are washed out of the socks, where do they end up?
2. What will happen to nano-silver beads if they end up in streams, or in the ground?
3. Do the nano-silver socks continue to work after repeated washing?

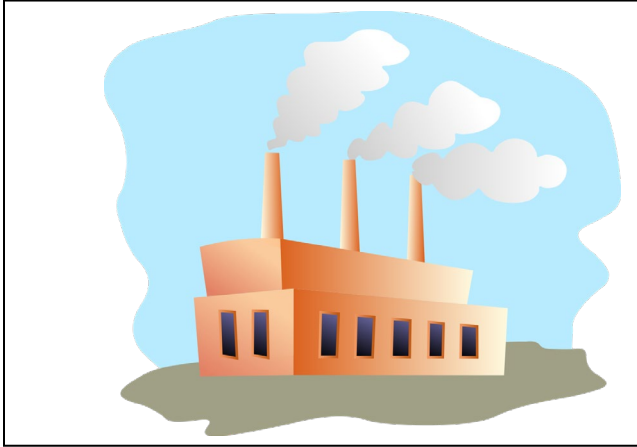


SEM image of Silver nanoparticles.  
Image from Arizona State University.

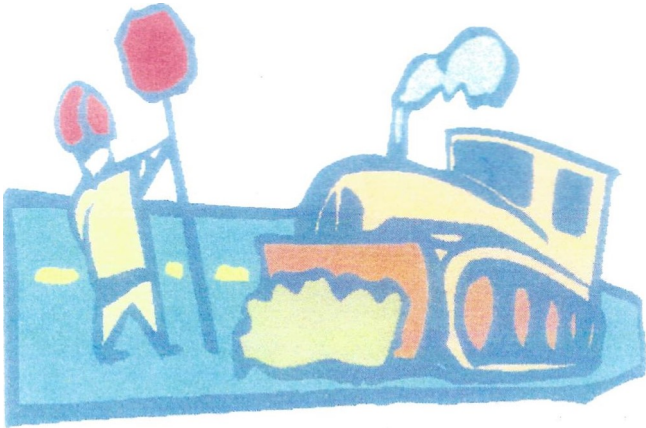
Name:

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Factory pollution



Construction site pollution:



Home pollution:



National Nanotechnology Coordinated Infrastructure

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Rocky stream



Part of our ecosystem

