

# No more stinky socks for Sibo!

By Ginny Stone

If you are a regular MiniMag reader, you may remember that a few months ago we found out about cool nano stuff being done at the Materials Research Department at iThemba LABS near Cape Town. Just to refresh your memory on how very small things are on the nanoscale, a single human hair is 10 000 nanometres in diameter.

Here's another interesting tidbit on just how amazing nano is: You know how gross it is when it's hot and you've had your shoes and socks on all day. You can't wait to take them off... but when you do – phheewwww. They stink! Even worse is when somebody else's feet pong and you have to sit there smelling them. Yuck! Well, think how cool this is: Scientists have come up with the idea of putting silver nanoparticles into socks. These particles are so teensy tiny you'd never even notice that they are there, but they do an awesome job – they kill the dudes that make your feet stink in the first place.



## How do silver nanoparticles kill off the microbes?

Because they are so incredibly small, the nanoparticles can get into the membrane (the outermost coat) of the microbes. Once they stick to the membrane, the nanoparticles short-circuit the cells so they can't make energy. And when cells can't make energy, they can't grow and eventually they die. If you ever do get a pair of nanosocks, don't bother

checking your feet for bugs riddled with silver. You'll never see them because they are just too tiny!

Clever scientists are going one step further, they are putting silver nanoparticles into

bandages. This makes sense when you think about it, because the nanoparticles would stop any bacteria growing in your wound and make it heal a lot faster.



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## Who exactly are these dudes?

They are microbes, bugs, bacteria and fungi. All these creatures grow merrily on your feet, especially when they are nice and warm and sweaty. Okay, so these bugs don't really harm you at all, but while they are happily eating and growing (on your very own tootsies) they do give off a nasty stench. Now, if you kill these bugs then you obviously kill the smell too.

You are probably wondering why they use silver nanoparticles. That's because scientists and doctors have known for a very long time that silver has properties to stop bacterial growth. Even the ancient Greeks and Romans put silver coins into their drinking water to make it safe. It's a bit like a broad-spectrum antibiotic but even better, because microbes do not build up a resistance to silver. In other words, the nasty bugs don't get used to it so that it doesn't work anymore. Clever, isn't it?

