

Human hair may act as perfect support structure for growing nanoparticles

[Researchers have] demonstrated the use of human hair to grow catalytic nanoparticles (i.e., nanoparticles that are capable of carrying out chemical reactions).

Why human hair? Nanoparticles, like crystals, often need to be grown on something, particularly if they are going to be immobilized for the purpose of carrying out chemical reactions. Various support structures have been used, from wood to bacterial cell walls, but many are not ideal...On the other hand, human hair is abundant, cheap, and biodegradable. This combination makes it suitable for so-called “green chemistry,” which places an emphasis on sustainability and the use of environmentally friendly compounds.

The researchers collected...human hair...and ground it into a fine powder. The hair's proteins were extracted, and solutions containing either silver or gold ions were added. Mixing in [sodium borohydride](#) ...triggered the formation of silver or gold nanoparticles on the hair proteins.

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The authors believe that [the efficiency of the resulting nanoparticle catalysts] was due largely to the tiny size (but large surface area) of their nanoparticles. Moreover, their catalysts were reusable.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [Chemically Useful Nanoparticles Can Be Grown Using Human Hair](#)