

Japan nano-tech team creates palladium-like alloy: report

December 30 2010

Japanese researchers have created an alloy with properties similar to palladium, a precious metal used in many high-tech goods, a news report said Thursday, dubbing the breakthrough "present-day alchemy".

Kyoto University professor Hiroshi Kitagawa and his team said they used nano-technology to combine rhodium and silver, elements which do not usually mix, to produce the new composite, the Yomiuri daily said.

The alloy has similar properties to [palladium](#), which is used in cars' emission-reducing catalytic converters as well as in computers, mobile phones, flatscreen TVs and dentistry instruments.

Like other white metals, such as silver and platinum, palladium is expensive, with its deposits largely limited to South Africa and Russia.

Palladium also has applications in the production of fuel cells -- a clean and [renewable energy source](#) that produces electricity by combining hydrogen and oxygen, with water as the only byproduct.

To make the new alloy, the Kyoto team used nano-technology to "nebulise" the rhodium and silver and gradually mixed them with heated alcohol, with the two metals mixed stably at the atomic level, the report said.

Japan's industry ministry has listed 31 rare metals, including palladium and lithium, which are used in industrial products, such as [electronic](#)

[devices](#) and batteries. Of these, 17 elements are called rare earth minerals.

Resource-poor Japan has tried to shift from its dependence on China, which controls the bulk of global rare earth production.

Kitagawa said he hopes to create more [alloys](#) using nano-technology, without specifying which ones, the Yomiuri said.

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Citation: Japan nano-tech team creates palladium-like alloy: report (2010, December 30)
retrieved 26 April 2024 from
<https://phys.org/news/2010-12-japan-nano-tech-team-palladium-like-alloy.html>

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