

PRESS RELEASE

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World Gold Council unveils catalyst that's as good as gold

- **Gold can clean air and remove poison from waste gases**
- **Prototypes pave way for exciting use of gold in new technology**

Gold has the potential to clean air and neutralise odours, remove poisonous mercury from power stations, and help power computers and other equipment more efficiently than current battery technology. So says the World Gold Council, which is currently showcasing a range of prototypes to demonstrate gold's effectiveness as a catalyst.

Developed by partner organisations of the World Gold Council, the prototypes include a domestic air cleaner, a self-rescue gas mask, an indoor air quality control catalyst and a mercury emission control catalyst. The items are currently being demonstrated to potential manufacturers as part of the quest to seek partners for future development and production.

Dr Richard Holliday, Industrial Applications Manager at the World Gold Council, said: "Scientists have only quite recently discovered that gold is an effective catalyst when prepared in a special way. The prototypes we are currently showing manufacturers illustrate how effective gold catalysts can be. We are confident that these prototypes will help to pave the way for the widespread use of gold within new products as manufacturers cotton on to its benefits."

Research has found that even at ambient temperatures gold catalysts are highly active in oxidising toxic carbon monoxide and odour compounds found in air, which has exciting potential for indoor air quality control products. In addition, gold catalysts can effectively oxidise mercury, which enables it to clean waste gases from power stations.

The current industrial demand for gold is around 350 to 400 tonnes a year, accounting for just ten per cent of global gold demand. This is a very low figure when compared to other precious metals, including platinum, palladium and silver. The World Gold Council believes that by supporting research and feasibility studies of the role gold can play in new technology, it will help to raise awareness of its unique properties and boost industrial demand.

“We now know that gold has unique properties that make it ideal for use as a catalyst in chemical reactions and these are different properties to platinum and palladium catalysts,” added Dr Holliday. “We are not saying that gold will replace platinum or palladium, but it does offer the opportunity for new, cheaper, faster, more efficient catalysts in new processes. We believe that by demonstrating the potential for new uses of gold in many areas, we could help to increase the industrial demand for gold within the next five years.”

About the prototypes

A domestic air cleaner, under development by Givaudan, one of the largest fragrance manufacturers in the world, in conjunction with the Chemistry Department of the University of Cardiff is promising. The domestic air cleaner is based on room temperature gold catalysis and doubles as an air freshener. Building on the existing plug-in air freshener market, the device draws air through the unit and over the catalyst before expelling clean air past a fragrant wick.

A self-rescue breathing apparatus developed by Union Chemical Laboratories, one of the largest and oldest chemical research and development organisations in Taiwan. The prototype gas mask uses a gold catalyst to prevent the wearer inhaling carbon monoxide.

QinetiQ, Europe’s largest independent science and technology organisation, has developed an **innovative liquid fuel cell** that promises to operate for much longer than battery technology. A nanoparticulate gold electrocatalyst is a key component in the fuel cell process.

Tennessee Valley Authority (TVA) is the largest public power utility in the US. TVA has developed a **gold based mercury oxidation catalyst** to control poisonous mercury emissions from its coal-fired power plants. Gold increases the amount of mercury that can be removed by existing emission controls. The technique is currently being piloted at a power station in the US.

AIST, Japan’s National Institute of Advanced Science and Technology, has a been pioneer in developing gold catalyst technologies in the last few years. AIST has a range of prototype **gold catalysts for indoor air quality control** and other applications and significant intellectual property rights relating to commercial manufacture.

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Notes to Editors:

World Gold Council

The World Gold Council (WGC), a commercially-driven marketing organisation, is funded by the world's leading gold mining companies. A global advocate for gold, the WGC aims to promote the demand for gold in all its forms through marketing activities in major international markets. For further information visit www.gold.org.