

PRESS RELEASE

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GOLD AT FOREFRONT OF 'NANOTECHNOLOGY REVOLUTION'

World Gold Council research paper demonstrates important applications in development using gold nanoparticles

World Gold Council (WGC) has today published '*Gold for Good: Gold and nanotechnology in the age of innovation*', a research paper detailing new scientific and technological innovations using gold. The report, which was produced in conjunction with Cientifica Ltd, the world's leading source of global business and investor intelligence about nanotechnologies, demonstrates how gold nanoparticles offer the potential to overcome many of the serious issues facing mankind over the coming decades.

Gold nanoparticles exhibit a variety of unique properties which, when harnessed and manipulated effectively, lead to materials whose uses are both far-ranging in their potential and cost effective. This report explores the many different applications that are being developed across the fields of health, environment and technology.

Trevor Keel, Nanotechnology Project Manager at World Gold Council said:

"The opportunities and possibilities identified in this report are just a subset of the amazing scope to use gold in the era of nanotechnology. As a readily available and well understood material, gold nanoparticles are ideal for use in a vast array of applications that improve our lives. WGC is looking to promote and invest in the development of gold-based innovations through Innovations Partnerships, so that the full benefits of gold nanotechnology can be realised."

Tim Harper, founder of Cientifica Ltd, said:

"Over the last decade, almost \$50 billion of government funding has been invested into nanotechnologies, and this investment is now starting to bear fruit with a steady stream of commercially viable nanotechnologies which are positively impacting human health, the environment and technology. This paper demonstrates the many varied applications in which gold nanotechnology can improve society's standard of living."

Health: Gold has a long history in the biomedical field stretching back almost five thousand years. However the dawn of the 'nano-age' has really broadened the potential of gold in biomedical applications and today, gold nanoparticles are being employed in entirely novel ways to achieve therapeutic effects.

Tumour targeting technologies which exploit gold's inherent bio-compatibility are being developed to deliver drugs directly into cancerous tumours. Additionally, simple, cost effective and sensitive diagnostic tests are being developed for the early detection of prostate and other cancers.

Environment: Environmental concerns have never been more prominent - energy and clean water scarcity, global warming and pollution are all major issues that need to be addressed. Gold nanoparticle based technologies are showing great promise in providing solutions to a number of environmentally important issues from greener production methods of the chemical feedstocks, to pollution control and water purification.

Gold-based catalysts are being developed that can effectively prevent the release of highly toxic forms of mercury into the atmosphere, the reduction of chemicals from green feedstock, and also for water purification and contaminant detection. In addition, gold is being used in meeting the challenge of constructing cost effective and efficient fuel cells, a key 'clean-energy' technology of the future.

Advanced technology: Gold is already a well established material in the electronics industry and the use of gold can only increase as the worlds of electronics and nanotechnology interact further in the future. Gold is being developed for conductive nanoparticle inks for plastic electronics because of its material compatibility, inherent durability and proven track record of reliability. Gold nanotechnologies have also been shown to offer functional benefits for visual display technologies like touch sensitive screens and potentially for use in advanced data storage technologies including advanced flash memory devices.

Companies interested in collaborating with World Gold Council are invited to make contact.

The full paper can be downloaded from:

http://www.gold.org/assets/file/rs_archive/gold_and_nanotechnology_in_the_age_of_innovation.pdf

OR

<http://cientifica.eu/blog/white-papers/gold/>

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Notes to Editors:

World Gold Council

World Gold Council's mission is to stimulate and sustain the demand for gold and to create enduring value for its stakeholders. It is funded by the world's leading gold mining companies. For further information visit [.gold.org](http://gold.org).

Innovation Partnerships

World Gold Council works directly with partner companies via Innovation Partnerships. These support research and development of new practical applications for the metal, drawing on a genuine commercial market requirement for innovation. Partner organisations include (but are not limited to) precious metal, chemical, electronics, materials and biomedical companies, ranging from small enterprises through to established international businesses. Interested companies are invited to contact World Gold Council for further details.

During 2009-2010 World Gold Council is particularly interested in receiving proposals relating to the following areas:

Industrial catalysts (including catalysts for pollution control and chemical processing)

Biomedical applications (including medical diagnostics, therapeutics and materials)

Advanced electronics (including any technology or component likely to be used in next-generation devices)

Fuel cell systems (including applications both within the fuel cell structure and hydrogen processing infrastructure)

Optical materials (including nanotechnology, chemicals and coatings)

Cientifica

Cientifica Ltd, based in London, is one of the world's best-respected consultancy companies in the field of emerging technologies and technology commercialization. It provides global business intelligence and strategic consulting services to industry, governments and investors worldwide.

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