



The prospect of lab-created gold has returned to the headlines in recent weeks, with a US-based start-up claiming it has successfully converted mercury into stable gold using nuclear fusion technology. | Source: Uncover Quantum/Intelligent Collector

Lab-created gold back in the spotlight as start-up makes bold claims

Posted November 03, 2026 | By Samuel Ord

The prospect of lab-created gold has returned to the headlines in recent weeks, with a US-based start-up claiming it has successfully converted mercury into stable gold using nuclear fusion technology.

With that said, questions remain about the scale of the achievement and whether it could ever become commercially viable. Marathon Fusion announced in October that it had achieved nuclear transmutation, claiming its process produced gold at a rate 10 times higher than a previous record set by CERN, the European Organisation for Nuclear Research.

The announcement follows the company's earlier proposal, reported in July 2025, that gold could potentially be produced as a byproduct of nuclear fusion reactors.

Marathon Fusion's latest claim involves firing high-energy neutrons generated through fusion reactions at mercury, creating an unstable isotope that subsequently decays into stable gold. While the underlying nuclear physics is established, the company has not had its latest achievement independently verified.

Importantly, Marathon Fusion has not disclosed how much gold it produced, the cost of the process, or enough experimental data to show whether the claimed production rate is commercially meaningful.

The comparison with CERN also requires context. In 2025, CERN reported that its Large Hadron Collider had generated approximately 29 picograms of gold during experiments conducted between 2015 and 2018. The gold existed for only a fraction of a second before collisions with accelerator equipment destroyed it.

Marathon Fusion's longer-term projections are considerably more ambitious. A 2025 research paper, based on computer simulations rather than commercial production, estimated that a suitably designed fusion plant could produce approximately two tonnes of gold annually per gigawatt of thermal power.

However, commercial fusion electricity generation remains under development, and any gold produced through the proposed process could contain radioactive isotopes that would require extended storage before it could be used.

For the jewellery industry, comparisons with lab-created diamonds are inevitable. The expansion of synthetic diamond production has dramatically altered pricing and consumer expectations, raising questions about whether technological advances could eventually have a similar impact on gold.

At the same time, prominent legal cases are pressuring the industry on responsible sourcing, and reports of illegal mining are increasing worldwide as sky-high market prices continue to rise.

However, significant differences remain. Unlike lab-created diamonds, which can be manufactured using established industrial processes, producing gold requires nuclear transmutation and access to highly specialised fusion technology.

Indeed, while there has been much scepticism surrounding the bold claims of Marathon Fusion, industry analyst Paul Zimnisky told the *Jewelry Wire* that lab-created gold will likely arrive far quicker than most expect - particularly in comparison with lab-created diamonds.

"Diamonds were first produced in the 1950s, and it was decades before they became commercial," he explained.

"With the AI buildout, companies need an enormous amount of energy, so there's a lot of money going into fusion technology. I think it's just a matter of time for lab-grown gold. The cat is already out of the bag."

For now, Marathon Fusion's announcement is an intriguing scientific claim rather than evidence of an emerging alternative gold supply. Whether the latest development represents a genuine step towards commercial production remains to be seen.

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