

# Colombia's tinted gold passes for precious stones

April 8 2012, by Raul Arboleda and Carlos Osorio

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All that glitters is gold under a new thermochemical process developed by Colombian engineers for color-tinting the precious metal to make it look like sapphires, rubies or emeralds.

The tinting can increase the value of [gold](#) by a factor of five, meaning the chemically-altered precious metal is likely to appear in jewelers' display windows worldwide soon, according to University of Antioquia engineers.

"It does not involve painting the gold or covering it with some material that disguises the traditional white, yellow or pink of the precious metal," said Maria Eugenia Carmona, the principal researcher on the project.

"It involves subjecting it to an elaborate thermochemical process of eight to 10 hours, after which not only does its color become red, blue or green, among others, but also its market price increases significantly," she said.

Colombia extracted 56 tons of gold from its mines in 2011, representing a 4 percent increase over the previous year. Colombia's gold exports were valued at \$2.8 billion in 2011, a 31.4 percent increase, according to official figures.

Colombia, Peru and Mexico are Latin America's biggest gold producers.

"We are sitting on a mine and it's sad to see large companies take our gold as a raw material to other countries where it is processed to return here at a high price," Carmona said.

A better option, she suggested, is to give the gold added value that would allow Colombians to export a new product.

Well-known Bogota jeweler Eladio Rey said the thermochemical transformation produced an outcome that is "wonderful, so innovative."

"It is undoubtedly attractive to traders and buyers because of the diversity of colors, and much better if a high quality for the metal can be guaranteed," Rey said.

The only similar tinting process the University of Antioquia researchers could find was done in Italy, where blue gold was produced.

The University of Antioquia process involves mixing 24-carat gold with reactive metals in a four-to-one ratio. The mixture is then subjected to a thermal process in special ovens, which changes its color.

After cooling, the material has the appearance of precious stones, and can be coated with a protective resin and mounted in rings, brooches or pendants.

Rey says he likes the coloring process, not only because it allows gold to be combined with other gemstones, but also because it allows the product to be labeled "made in Colombia."

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