

## Gold in the News – A look at recent stories concerning gold

### Further news on gold phase diagram updates

Further to the news on ternary phase diagrams in *Gold Bulletin* last year, further reviews and updates of binary and ternary phase diagrams have been reported:

- Gold – Terbium: Diagram redrawn showing 2 new intermetallic phases. H Okamoto, *J Phase Equilibria and Diffusion*, 2008, **29** (3), 286
- Gold – Gadolinium: Diagram redrawn showing 2 new intermetallic phases. H Okamoto, *J Phase Equilibria and Diffusion*, 2008, **29** (3), 285
- Aluminium - Gold – Copper: Diagram reviewed, including isothermal and vertical sections. V Raghavan, *J Phase Equilibria and Diffusion*, 2008, **29** (3), 260-261
- Aluminium – Gold – Cobalt: Diagram reviewed, including isothermal and vertical sections. V Raghavan, *J Phase Equilibria and Diffusion*, 2008, **29** (3), 259

### Drawing fine gold wire down to 10 microns

A new Chinese patent, CN 101254512, 2008, from the Shenzhen Yuehao Jewelry Co in Shenzhen describes a process of hot drawing gold bar down to fine wire of 0.01mm diameter. This involves heating the drawing dies to 700-950°C. The wire produced is claimed to be hard enough for knitting net-like ornaments.

### New 18 carat red gold claims to be resistant to colour fading

Rolex SA, Switzerland have publicised a new patented 18 carat red gold alloy, branded “Everose”, for watch cases which is claimed to be resistant to colour fading, i.e. loss of red colour. This is presumably due to loss of copper from the surface layer. The patent (DE60310555/EP 1512765) claims an alloy containing at least 6% copper and between 0.5% and 4% platinum.

### Gold plating with high adhesion to various plastic films

Researchers from the National Institute of Advanced Industrial Science and Technology (AIST) in Tsukuba, Japan, have developed a novel cyanide-free electroless gold plating reaction providing improved adhesion to various plastic materials.

Electroless plated gold films have attractive properties in terms of electrical conductivity, low contact resistance, corrosion resistance, solderability, abrasion resistance, and light reflection. Conventional electroless gold plating, however, requires the use of gold cyanide, causing problems related to the management of toxic substances and environmental pollution. Also, complicated pre-processing is necessary to achieve high adhesion to a base substrate.

After the discovery of a novel cyanide-free, electroless gold plating reaction two years ago, the team at AIST have been improving this method to achieve high adhesion and first deposition at room temperature by introducing an originally developed platinum colloid catalyst system. A continuous gold film can now be obtained within a few minutes, owing to the excellent catalytic property of the platinum nanoparticles. In addition the team also found that adhesion of the plating film was dramatically improved only by post-annealing for about 30 minutes at the temperatures ranging from 100°C to 250°C, depending on the properties of the plastics used.

See [http://www.aist.go.jp/aist\\_e/latest\\_research/2008/20081105\\_2/20081105\\_2.html](http://www.aist.go.jp/aist_e/latest_research/2008/20081105_2/20081105_2.html) for more information

### World Gold Council examines major gold producer efforts to combat HIV/AIDS

World Gold Council has published an industry-wide representation of disease management in the gold mining sector. The report examines how the diseases have impacted the countries under analysis and how the programmes implemented by gold mining companies have helped transform the health of workers and local communities.

Under the microscope are the disease management programmes of the world's four largest gold producers: AngloGold Ashanti, Barrick Gold Corporation, Gold Fields Limited and Newmont Mining Corporation.

The full report is available at: [http://www.gold.org/assets/file/pub\\_archive/pdf/health\\_mining\\_full.pdf](http://www.gold.org/assets/file/pub_archive/pdf/health_mining_full.pdf)