

Gold in the News

A look at recent stories concerning gold science and technology

Au(VII) is not

The hunt for the highest oxidation states of gold is of great scientific interest. In 1986 the group of Timakov, Prusakov and Drobyshevskii reported that fluorine atoms from a gas-phase radiofrequency discharge could react with AuF_5 and form a compound with the stoichiometry AuF_7 which had a characteristic IR frequency of $734(3) \text{ cm}^{-1}$. Now, in a thorough theoretical study D. Himmel and S. Riedel (Inorg. Chem. 46 (2007) 5338-5342) find that a complex with the AuF_7 stoichiometry and the right IR frequency can exist. It is, however, a complex of the previously known AuF_5 and a further F_2 unit, not an Au(VII) compound. This solves a controversy that lasted for two decades.

New Gold Bonding Wire Material

Kulicke & Soffa Industries, Inc. one of the world's leading suppliers of gold bonding wire to the semiconductor industry has launched a new gold wire branded Formax™ which, it is claimed, offers highly accurate and consistent loop profiles, providing higher wire bond yields. The new Formax™ product is claimed to form part of the next-generation in wire technology, with higher strengths, lower heat affected zone ranges and proven intermetallic stability. See www.kns.com for more details.



Ancient Dental Gold

A team of Italian researchers has described a newly discovered example of the use of dental gold dating back many hundreds of years. The example is based on the application of gold wire, which was used to string together artificial teeth, according to the current issue of The American Journal of Medicine. The researchers found the object, which dates from the 1st to the 2nd century AD, in the mouth of an unidentified woman who was buried in an elaborate mausoleum within a Roman

necropolis. Lead scientist Simona Minozzi an anthropologist at the University of Pisa, and her team believes the unidentified Roman's bridgework was made from the woman's own teeth that probably fell out due to periodontal disease. Gold wire bound the teeth together, with some teeth possessing drill holes to strengthen the wire bond. More gold wire secured the replaced tooth to side teeth that remained in her jaw. The earliest historical example of the use of dental gold dates back to the Etruscan period.

Golden Iranian treasures

Almost 500 ancient golden relics have been unearthed from a small rural town in Iran. Known as the Ramhormoz treasure, the hoard is thought to date back as far as 3400 BC. Among the find were five gold rings which were thought to belong to a powerful ruler or king in the area. One bears a cuneiform inscription which is thought to have been created by the Sumerians around 3000 BC. The gold pieces were found by the Khuzestan Regional Water Company during excavations at a 2,500-year-old site. The treasure will now go on display at either in Iran's National Museum in Tehran or in Ahvaz, the provincial capital of Khuzestan.

Gold Bulletin Impact Factor

Gold Bulletin had an even higher Impact Factor in 2006. The Science Citation Index figures, recently released, identify the journal as having an Impact Factor of 6.029, up from 5.2 in 2005, confirming the high quality of the papers published in the journal.



EDITOR'S NOTE

Catalysis and nanotechnology stories are reported in our newsletters CatGold News and NanoGold News