
Editorial

New Gold Science and Technology

By publishing a variety of papers in *Gold Bulletin* we aim to provide our readers with an indication of important discoveries and progress in gold science. The expectation is that some of these advances will lead to the development of new products and processes using gold. It is clear both from the recent papers and the abstracts in the Literature Highlights sections that there are a number of fields of research endeavour where our knowledge of gold and its derivatives is expanding significantly. The levels of activity in some of the areas still, however, remains below that for other precious metals, particularly those of Groups 8 - 10 of the Periodic Table. It is therefore logical to conclude that if there were more research investigations on gold topics, more rapid progress would be made.

Whilst gold metallurgy and its use in jewellery still remains far and away the dominant application area for gold, the importance of gold and its derivatives continues to grow in the electronics and medical and dental fields. The area with the biggest new potential is catalysis by gold, and our leading article in this issue helps to highlight this topic, but also underlines the fact that the development of gold catalysis is at a very early stage. Much work will need to be done to realise this potential. Gold catalysis does not follow the same patterns that are already established for use of the other precious metals, and a greater mechanistic understanding of the reactions involved will assist the development of applications in areas such as pollution control, fuel cells, chemical processing, and sensors.

The oxidative stability of gold is certainly a principle reason for its current and traditional use in jewellery, and this has led to the mistaken impression that its chemistry is



limited. A more accurate picture is that the chemistry of gold has been under-investigated. More thorough research, involving a wider spectrum of ideas, will lead to increasingly practical technology in colloids, nanoparticles, materials science, including films, and other areas. Gold electrochemistry is also developing in unconventional ways (see earlier *Gold Bulletin* articles and abstracts) and some of the new results could lead to applications in refining or fuel cell technology.

We hope that by publishing reviews and original research papers from a wide variety of disciplines we will help investigators to develop innovative ideas for the application of gold science and technology. In this issue we publish papers in a number of different technological areas; and in the Highlights section there is, for example, a description of new gold glutathione compounds which have strong chiroptical effects; and an indication that the properties of dilute erbium gold alloys have been investigated.

We would value your comments on the thoughts expressed above and will always welcome approaches from readers who would like to publish the results of their research in our journal.

A handwritten signature in black ink that reads "David Thompson." The signature is written in a cursive style and is underlined with a single horizontal stroke.

David Thompson
Technical Editor