

# “A Handbook of Synthesis of Precious Metals Compounds and Complexes”

Edited by Jianmin Yu (Kunming Sino-Platinum Metals Catalyst Co, Ltd, China)  
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Monographs on precious metal compounds and complexes published in China in recent years have been relatively scattered rather than systematic and comprehensive. This book, “A Handbook of Synthesis of Precious Metals Compounds and Complexes”, published in Chinese and edited by Jianmin Yu, aims to present the most complete collection of information on precious metals compounds and complexes from a large number of sources from both within China and abroad. Some of the information is available in the book for the first time in Chinese.

## Compounds and Complexes of Precious Metals

This handbook provides detailed data obtained from both theoretical and practical studies on the synthesis of precious metals compounds and complexes. The book has eleven chapters, covering the synthesis and properties of gold, silver and platinum group metal (pgm) compounds and complexes.

The physical and chemical properties of the main compounds and complexes of the precious metals are reviewed in Chapter 1. The chemical formulae, English names, relative molecular weights and methods of synthesis of the compounds and complexes of gold (a total of 43), silver (48), palladium (103), platinum (226), rhodium (143), iridium (137), osmium (74) and ruthenium (148) comprise the most important part of the book and occupy Chapters 2 to 9. The synthesis of five pharmaceutical intermediate compounds and seven precious metal anticancer drugs is discussed in Chapter 10, and the synthesis of seven acetylacetonate complexes of precious metals which are used for making chemical vapour deposition (CVD) materials are detailed in Chapter 11.

## An Industrial Perspective

The editor of the book, Jianmin Yu, is a Professor at Kunming Sino-Platinum Metals Catalyst Co, Ltd, in

Yunnan Province, China. He is interested in the extraction, separation, recovery and refining of precious metals. He is also the legal representative of Kunming Yu Jin Technology Development Co, Ltd, which was established in April 2008 to develop key technologies in precious metals mining and resources. In addition to editing the book, he is the author of Chapters 4 to 8. Chapters 1 and 9 are written by Jun Lu, Senior Engineer at Kunming Yu Jin Technology Development Co, Ltd, and Chapters 2 and 3 are written by Yunkun Zhao, a researcher at the same company. Production of the book was commissioned and supported by the Yunnan Provincial Science and Technology Bureau Fund.

This book is aimed at three groups of people:

- Scientists engaged in research and development of precious metal-based materials, pharmaceuticals and fine chemicals;
- Researchers and technical personnel in the areas of separation, purification, refining and analysis of precious metals;
- Teachers and students in metallurgy, materials science, chemistry, chemical engineering or pharmaceutical science in universities and specialised secondary schools.

The text is clear, the examples and illustrations are easy to understand, and many references are listed for further information, which makes the book suitable for people of different levels of expertise to use and refer to. It might have been helpful to give the cited references after each method instead of listing them together at the back of the book, to help the reader to more easily find detailed information on a particular method of interest.

The English index of all substance names and the English abbreviations used in the book are given in an appendix. This list of substances covers a variety of precious metal complexes with ligands ranging from amines, halogens and phosphines to arsines, cyclopentadiene, dimethylglyoxime, oxalic acid and thioethers, reflecting the broad range of applications that are discussed in the book. Another appendix lists the technology services that the Kunming Yu Jin Technology Development Co, Ltd, provides. It would

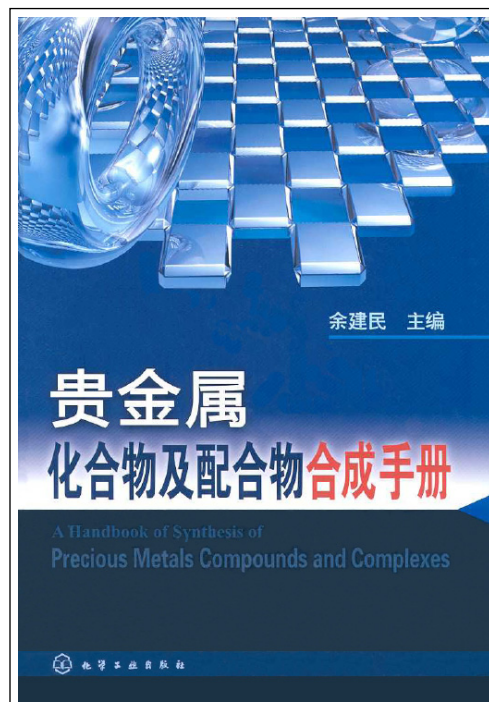
perhaps have been helpful for readers if a list of companies who can supply pgm sponge and basic raw materials in China and worldwide had also been included here and this could be considered for future editions.

### Concluding Remarks

Covering a total of 941 compounds and complexes of precious metals in a systematic way, this is a useful book for anybody involved in synthesis and applications of these compounds or complexes and is one of the most complete texts on the subject published in China to date.

### The Reviewer

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