

to many other reviews, focuses on the use of electrosynthesis for preparative chemistry and is therefore very useful. The use of inert electrodes, as well as sacrificial anodes and cathodes is considered, as is the solvent employed. Electrochemical synthesis of platinum and ruthenium complexes are described.

Novel Oxidants and Reductants

The use of non-traditional oxidising and reducing agents in synthetic co-ordination chemistry is described in Chapters 8 and 9. These two chapters constitute a significant proportion of the book and are fascinating to read. Although some of the reagents may be familiar to synthetic co-ordination chemists, many may not be, and the use of such reagents offers valuable possibilities for the synthesis of novel materials as well as facile synthesis of established metal complexes. Oxidising agents, such as aryl-diazonium salts, tropylium salts, metal salts, non-metal halides and aminoxides are all considered in detail. The modification of such reagents for utilisation in aqueous media is also described. An extensive collection of novel reducing agents is also provided. The range of unusual products obtained, described by the use of the reagents employed, make these chapters of interest both to academic and industrial chemists. This information is not readily available, except by a lengthy and detailed search of the chemical literature. While more metals

are considered here than in other chapters, the platinum group metals still receive much attention.

The use of boron and aluminium hydrides in preparative chemistry is reviewed in Chapter 10, while the book concludes with features on molecular rearrangements of co-ordination compounds (Chapter 11) and some interesting possibilities for the solid state thermal synthesis of co-ordination compounds (Chapter 12). Many of these reactions are concerned with the expulsion of water or hydrogen halide from metal complexes to produce new species. The platinum metals again feature extensively.

Overall, the book is a welcome addition to the chemical literature and has much to recommend it. The platinum group metals receive excellent and thorough consideration, with roughly over 50 per cent of the book concentrating on them, the remainder being principally concerned with the 3d transition metals. The style, clarity and readability of the book are excellent and the book is well referenced and has sensibly constructed indexes. Most of the chapters deal with interesting research matters informatively, which is particularly important since many of the topics covered in the book are not covered in existing texts. I, therefore, consider this book to be a useful purchase for anyone seeking novel synthetic methodologies for academic or industrial application and I recommend it highly.

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Monodispersed Nanostructured Ultrafine Platinum

Nanostructured metal particles with interesting properties due to their quantum size effects, and with uses as advanced materials, have mostly been studied as isolated particles; while platinum monolayers have been little examined because of the difficult preparation of monodispersed ultrafine platinum particles.

However, a method has now been developed to control the size of polymer-protected ultrafine platinum particles (T. Teranishi, M. Hosoe and M. Miyake, *Adv. Mater.*, 1997, **9**, (1), 65–67). Ultrafine platinum particles, of different diameters, protected by poly(*N*-vinyl-2-pyrrolidone) (PVP), were prepared by heating H_2PtCl_6 under reflux in aqueous alcohol with PVP, and varying the reaction conditions.

Higher alcohol concentrations gave smaller particles of narrower size distribution; particle size reduced as: methanol > ethanol > 1-propanol. Thus nucleation rate is the principal factor in determining particle size and distribution. Electrophoresis produced monolayers dependant on platinum concentrations, voltages and times.

Industrial Platinum Metals Chemistry

Please note that the following change should be made in “Industrial Platinum Metals Chemistry Towards the Year 2000”, which appeared in *Platinum Metals Rev.*, 1997, **41**, (1) 8–11.

On page 10, in Figure 4, the molecule involved in the palladium-catalysed Heck reaction should have been dihydrofuran and not furan.