tion it contains, browsing through this book will always be a rewarding experience. It is nicely produced, and is an important addition to books about modern applications of palladium chemistry to organic synthesis. It is comprehensive in the literature coverage to early 1994, and it is recommended for purchase by research libraries associated with palladium chemistry or synthetic organic chemistry. M.V.T.

Reference

1 *Platinum Metals Rev.*, 1992, **36**, (1), 39

Platinum Complexes Used in DNA Binding Studies

DNA binding studies need unsaturated complexes with emissions sensitive to environmental changes to bind to DNA. Some ruthenium and platinum complexes have photoluminescence changes upon intercalation into calf-thymus (ct) DNA. Scientists at the University of Hong Kong, (H.-Q. Liu, T.-C. Cheung and C.-M. Che, *Chem. Commun.*, 1996, (9), 1039–1040) have now found two platinum complexes with dramatically enhanced photoluminescence on binding. $[Pt^{II}(dpp\text{-}C,N,N')(MeCN)]^+$ had a 271-fold increase in emission and $[Pt^{II}_2(pby\text{-}C,N,N')_2(\mu\text{-}dppm)]^{2+}$ had a 117-fold increase; dpp-*C,N,N'* = C-deprotonated 2,9-diphenyl-1,10-phenanthroline; pby-*C,N,N'* = C-deprotonated 6-phenyl-2,2′-bipyridine and dppm = diphenylphosphinomethane. This is attributed to intercalation into ct DNA, and may be used as luminescent switches for DNA.

Platinum 1996

For more than a decade Johnson Matthey has conducted an annual survey of commercial aspects of the platinum metals, and presented the findings in a comprehensive yet readable fifty-two page review.

The recently launched "Platinum 1996" records that during 1995 a recovery in South African production and increased Russian shipments lifted platinum supplies by 10 per cent to 4.98 million oz, while platinum demand improved by 5 per cent to a new peak of 4.79 million oz. Despite a fall of 20,000 oz, at 1.85 million oz autocatalyst manufacture still formed the major requirement for platinum, followed by jewellery with an increased demand of 1.81 million oz.

It is interesting to note that usage by the automotive industry is not confined to emission control catalyst manufacture. Platinum-tipped spark plugs continue to replace base metal plugs on new vehicles, the oxygen sensors used in engine management systems employ platinum, and the lightweight plastics increasingly used in body parts and engine components are reinforced with glass fibre formed using platinum bushings. In addition, the petroleum industry uses platinum catalysts in the production of gasoline and cleaner-burning diesel fuels, while for the future, proton exchange membrane fuel cells could be used to power zero emission vehicles.

During 1995 industrial demand for platinum increased by 21 per cent to 990,000 oz, the highest level for sixteen years. At the same time sales of palladium for electronics applications rose by 19 per cent to 2.65 million oz, while high demand from the chemical and glass industries boosted industrial off-take for rhodium by 12 per cent to 48,000 oz. Despite a 12 per cent increase in demand for ruthenium from the electronics industry, a decline in purchases by electrochemical companies contributed to an overall fall in demand of almost 5 per cent, compared with 1994. Iridium demand increased from 42,000 oz in 1994 to 52,000 oz in 1995; although the electrochemical sector accounts for about half of the demand for iridium, smaller applications including crucibles, biomedical and spark plug tips for aerospace applications all increased.

Readers of *Platinum Metals Review* who wish to have access to this authoratitive source of information on the many factors that influence the supply and demand of the platinum metals are invited to direct their request for a free copy of "Platinum 1996" to the author: Alison Cowley, Johnson Matthey PLC, 78 Hatton Garden, London EC1N8JP, England; Fax: +44-171-269-8389.