

Platinum Group Metals

– their Geological Occurrence, Extraction, and Applications

The Platinum Group Metals (PGMs) are a group of six structurally and chemically similar metals, rare in the earth's crust and with few economically mineable deposits. However apart from their rarity value, they are strategically important for their industrial, electronic and medical applications. Most of the known PGM deposits have been formed by high temperature magmatic processes often associated with copper and nickel sulphides. Major deposits are in South Africa, Russia and North America. The resultant mineralogy is complex and provides challenges for the extraction and separation of the individual metals, which require to be refined to high purity for their end use. Platinum and palladium are by far the most abundant metals of the PGMs and their application in automobile catalysts is critical in mitigating pollution from exhaust systems. In addition, there are many other uses of PGMs that have and are contributing to our lives today. The high market value of the PGMs encourages recycling and sustains the viability of their uses.

The Speaker:

Dr Bruce Rimmer –retired in 2002 after 35 years with INCO, a Canadian multinational company (now owned by Vale of Brazil) involved in the mining and extraction of nickel, copper, cobalt and precious metals. Early career was spent developing new refining processes for precious metals in UK and Canada, and then moved on to management of INCO's refinery in Park Royal, London.

Has a PhD in Inorganic Chemistry and is a Fellow of the Royal Society of Chemistry and a Chartered Chemist. Since retirement has got into geology through the Finchley Amateur Geology Society.