

## THE HISTORY OF PLATINUM GROUP METALS: PLATINUM AND PALLADIUM

Platinum Group Metals (PGMs) include platinum, palladium, rhodium, iridium, ruthenium and osmium. Commonly occurring in nature together, these metals are among the rarest of all metallic elements. Two of these elements – platinum and palladium – are found in the Twin Metals' deposit, and are the only two PGMs found in their pure form in nature.

The first known example of platinum goes back to prehistoric times in South America, where a small statue is known to have been shaped out of the metal. The modern history of platinum group metals only began in the 18th century when European scientists began to understand and use the metals. Below is a brief historical timeline of platinum and palladium and their uses:

- In 1801, English physician William Hyde Wollaston obtained the first pure platinum sample. His methods formed the basis of the techniques which produce malleable platinum and palladium which are still used today.
- In 1842, platinum electrodes were used to create the very first fuel cell.



- In 1888, platinum was discovered in Canada, having been previously thought to only exist in Colombia and Russia. In 1924, platinum was also discovered in South Africa.
- In the 1970s, concerns increased about pollution and the environment which led to new air quality regulations in the U.S., and the beginning of pollution reduction technologies, such as the autocatalyst. The autocatalyst, containing the key components of platinum and palladium, is still used today to control and reduce harmful emissions from vehicles.
- Platinum mining production has continued to grow since the Second World War due to the development of new applications for the metal including in autocatalysts, industrial uses, medical equipment, jewelry and fuel cells – all of which are still used today.

#### Sources:

- Minerals Education Coalition, <http://www.mineralseducationcoalition.org/minerals/platinum>
- Palladium Alliance International, <http://www.stillwaterpalladium.com/history5.html>
- Platinum Today, <http://www.platinum.matthey.com/about-pgm/history-of-pgm>

