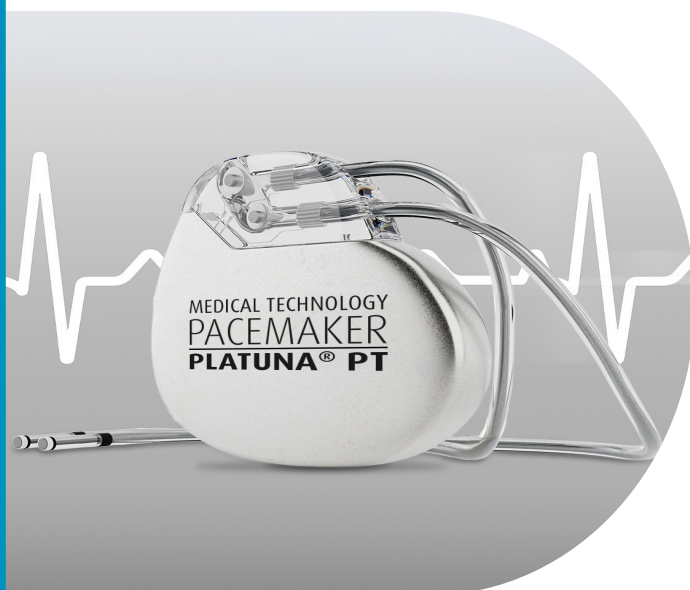


Picture credit: Umicore



The demands placed on surfaces in medical technology are high – and with good reason. They determine the functionality and safety of implants, sensors, and other instruments, and contribute significantly to the successful outcome of medical procedures. In this regard, high-quality coatings are essential, as the quality of plated surfaces is decisive for maintaining the properties and the performance of the end product.

According to Umicore, a leading advanced materials business, platinum is the precious metal of choice when it comes to medical technology. This is due to its unique properties, including chemical inertness, corrosion resistance, biocompatibility, temperature and dimensional stability, and excellent electrical conductivity. Indeed, platinum is one of the few metals that does not cause toxic reactions, even in long-term implants.

Umicore is seeing increased interest in its state-of-the-art platinum-based coating technology, PLATUNA® PT, which has been specially designed for medical applications. It is based on a strong acidic solution with a comparatively low sulfuric acid content. This makes it less aggressive towards the substrate to be coated and allows easier application on sensitive materials. Its properties enable uniform layer distribution, even with complex geometries. This is advantageous in the manufacture of miniaturised components.

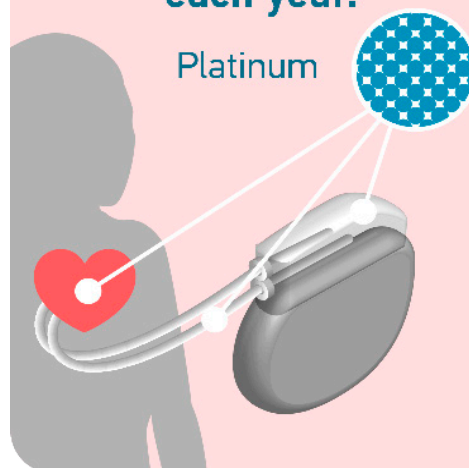
KEEPING PACE WITH PLATINUM

Platinum is the precious metal of choice for medical technology

Range of uses

Platinum coatings are found in a wide range of medical technology applications. For example, in pacemakers or neurostimulators they provide long-lasting electrical contacts, needed to control electrical impulse transmission.

Platinum is the only material suitable for the electrodes required in the one million pacemakers implanted each year.



They are also present in sensors for pH, glucose, oxygen, or electrocardiogram measurement, where coated, smooth, and non-porous surfaces improve signal quality. In addition, high electrical conductivity and chemical inertness ensure reliable measurement results over extended periods.

In addition, platinum markers are used to enable the precise positioning of catheters or clot-retrieval devices under X-ray control, due to platinum's radiopacity. Its radiopacity is put to great use when performing delicate, life-saving procedures to treat patients with neurovascular disorders such as strokes

or aneurysms, or when fitting stents to treat narrow or blocked arteries. Further, electrodes in ablation catheters benefit from the high conductivity and corrosion resistance of platinum coatings.

Since 2013, medical demand for platinum has grown at a consistent 3% compound annual growth rate. In 2024, medical demand for platinum represented 4% of total platinum demand, growing for the fourth consecutive year to reach 308 koz. This year, medical demand for platinum is expected to grow by a further 4% to 320 koz.

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