

The Role of Plasma Spray Coatings in Orthopedics

Last Updated Monday, 29 June 2009

As the name suggests, a plasma spray coating is a special covering that is applied to substrates such as medical devices, semiconductors, jet engine components and various metals in order to improve their surface properties or enhance their efficiency. Plasma spray coatings can heighten the quality of appearance, extend a device's durability and act as corrosion and scratch resistance.

Medical devices, typically made of stainless steel or other durable and light weight elements, are required to exert minimum friction, excellent adhesion and most importantly controllable conductivity and usability tolerance. These features are often optimized by using titanium coatings. Medical devices can range from a single non-ground wire to devices of various shapes and sizes that demand extensive masking.

Along with serving as corrosion resistance for common medical devices, titanium coatings are now applied to orthopedic implants in order to afford the implant greater permanence. The porous, bio-active coating enables the biomedical engineer to design an implant that is better suited to interact with human bone tissue.