

# MICROPLASMA SPRAYING

## OF BIOCOMPATIBLE COATINGS ON IMPLANTS

PWI has developed a technology and equipment of microplasma spraying of biocompatible coatings on the surface of different implants, including hip implants, dental implants, intervertebral cages etc.

This technology allows depositing coatings from hydroxyapatite powder (HA), titanium cellular coatings as well as double-layer biocermet (titanium-hydroxyapatite) coatings. Spraying of biocompatible coatings is done on microplasma spraying unit MPN-004. PLASMATRON FOR SPRAYING OF COATINGS  
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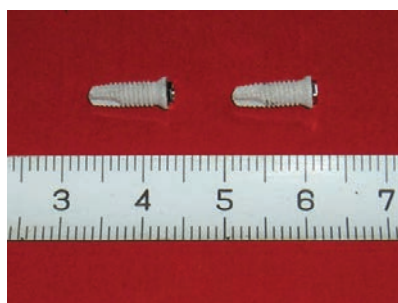
Unit for microplasma spraying MPN-004 with powder batchbox

Spraying of Ti-layer with regulated porosity (5–30 %, pore size 50–300  $\mu\text{m}$ ) and minimum oxidation level is carried out by means of microplasma spraying of Ti-wire. Combination of cellular Ti-coating with external HA layer provides coating cohesion strength with implant surface satisfying ISO 137779-2 and high level of biocompatibility.

- > Based on complete complex of mechanical and biomedical tests the implants with microplasma biomedical coatings are used in practice for hip replacement.



*a*



*b*



*c*

Products with biocompatible coatings made by microplasma spraying: *a* — parts of hip implant; *b* — cermet implant for interbody spinal fusion; *c* — dental implant

Developed by PWI