

## OUR EXPERTISE

Experience that delivers results.

### Market Segments

- Orthopedic (joint and spine)
- Dental
- Cardiovascular
- Veterinary

### Capabilities

- Hydroxylapatite coating (HA)
- Titanium plasma spray coating (TPS)
- Titanium on polyether ether ketone (PEEK)
- Rough porous TPS coating
- Asymmatrix® coating
- Custom coating technologies
- Sintered bead coatings on titanium and Co/Cr
- Resorbable blast media surface treatment (RBM)
- Passivation per ASTM F-86
- Heat-treating
- Final cleaning and packaging

### Coatings in Development

- Titanium on ultra-high molecular weight polyethylene (UHMWPE)
- Anti-wear ceramic coating

### Special Services

- Staff metallurgist and validation specialist
- FDA consulting and 510k submission
- Package design
- New coating development

## ABOUT ORCHID

Orchid is a worldwide leader of orthopedic medical device outsourcing, providing contract design and manufacturing services. We are a strategic sourcing partner that can handle an entire project or provide services at a Single Point in the process.

## CONTACT US TODAY

Make your ideas a reality.



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## PARTNER WITH US

Unparalleled experience, market-driven solutions and technical innovations.

Orchid's coating divisions have been leaders in the orthopedic industry for decades. Through communication with our customers and suppliers, we continue to develop value-added, innovative technologies and services.

Our newly developed process for applying titanium coating to PEEK spinal implants combines biocompatibility with osteointegration. In addition to developing new coating technologies, we are also experts in the clinical success of hydroxylapatite coating (HA), the high osseointegration capability of titanium plasma spray (TPS) / vacuum plasma spray (VPS), and the roughened surface of resorbable blast media (RBM).

If you want custom capabilities, rapid turnaround times, innovative technologies and an excellent track record, We can provide total project partnership right from the start to bring your products to market ahead of the curve.

## Implant Coatings and Surface Treatments

Leaders in the latest surface engineering technologies

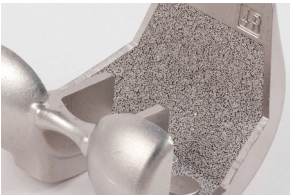






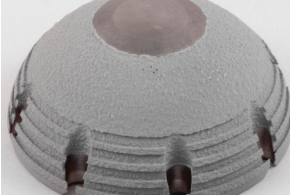


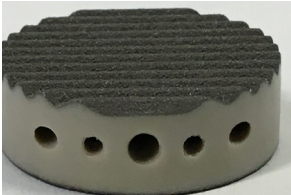
# IMPLANT COATINGS AND SURFACE TREATMENTS

Meeting the challenge of implant fixation.

## Sintered Coatings

	Spherical	Asymmatrix®
		
	Bead coating of various sizes that creates a three-dimensional porous structure that can be applied to either titanium or Co/Cr implants.	An irregular bead coating structure with the added features of an extremely rough surface and increased porosity.
Materials	Cp Ti on Ti alloy Co/Cr on Co/Cr	Cp Ti on Ti alloy Co/Cr on Co/Cr
Attachment Method	High-temperature sintering	High-temperature sintering
Macro-Texture	Smooth, moderately rough	Rough
Porosity Range (%)	30 – 50	50 – 70
Pore Size Range (µm)	100 – 300	100 – 300
Coating Thickness	> 0.020 in	> 0.020 in

## Sprayed Coatings

Titanium Plasma Spray (TPS) on metal	Hydroxylapatite (HA)	Resorbable Blast Media (RBM)	Rough Titanium Plasma Spray (TPS)	Titanium Plasma Spray (TPS) on PEEK
				
Creates interconnected porosity down to the substrate for titanium or Co/Cr implants using commercially pure titanium or Ti6Al4V.	The same mineral found in bone (60-70% of bone is mineral). Bone responds to it as an osteoconductive surface.	A textured surface that will provide the benefit of increased roughness (surface area) without leaving any foreign entrapped materials.	A vacuum plasma sprayed (VPS) titanium coating that can be applied on Titanium and CoCr substrates and has a rough surface texture.	Creates interconnected porosity down to the substrate for PEEK implants using commercially pure titanium or Ti6Al4V.
Cp Ti on Ti alloy Cp Ti on Co/Cr Cp Ti on TiCarbide	HA on Ti alloy HA on Co/Cr HA on SS	Proprietary	Cp Ti on Ti alloy Cp Ti on CoCr	Cp Ti on PEEK
Plasma spray	Plasma spray	Blast	Plasma spray	Plasma spray
Rough	Smooth	Smooth	Rough	Rough
20 – 60	Dense coating	N/A	30 – 50	20 – 60
100 - 300	Dense coating	N/A	100 - 300	100 - 300
0.005 – 0.038 in	25 – 75 µm	N/A	0.025 – 0.035 in	0.005 – 0.038 in

