Materials Testing & Analysis – Orthopaedic Implants

We have extensive experience evaluating materials used in orthopaedic implants ranging from metals, ceramics and polymers to complex composites and coatings. Utilizing state-of-the-art analytical techniques, our materials experts are available to provide technical support during any stage of the life-cycle of a product. Our SinglePoint lab service characterizes material behavior during research and development, provides regulatory approval support, performs quality assurance testing, troubleshoots production processes, performs cleanliness evaluations, and determines the root causes of failures.

APPLICATIONS:

- Developed a comprehensive testing program, performed testing, analyzed data and provided report for validation of HA coating on a hip stem for a 510(k) submission
- Investigated the effects of thermal processing on premature failure of hip stems, and developed a QA screening tool for production
- Identified contaminants responsible for surface staining on implants, pinpointed likely source and recommended corrective measures to prevent recurrence
- Evaluated the effects of cleaning processes on the surface of an implant, helping the client to understand why their coating was not adhering properly

Capabilities

- Alloy verification
- Chemical analysis
- Cleanliness evaluation
- Coating characterizations
- Contaminant identification
- Failure analysis
- Hydroxyapatite validation
- Interface analysis
- Manufacturing process support
- Material interface analysis
- Mechanical testing
- Metallurgical evaluation
- Microbiology testing
- Raw material selection
- Specimen preparation
- Surface analysis

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