

## Chemical and X ray Diffraction Analyses of Calcium Phosphate Used for Discrete Crystalline Deposition

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**Statement of Purpose:** NanoTite™ (Implant Innovations, Inc., Palm Beach Gardens, FL, USA) is an implant surface modification featuring discrete crystalline depositions (DCD™) of nanometer-scale calcium phosphate (CaP) particles processed by sol gel application over the microtopography of dual acid-etched titanium alloy (Osseotite®, Implant Innovations, Inc.). The two-part objective of this study is (1) to confirm that the CaP particles in the colloidal solution used for the DCD process have a predetermined crystallinity and chemistry that are not altered during the application process to the titanium surface and (2) to qualitatively assess the size and shape of the CaP particles deposited on the implant surface using Field Emission Scanning Electron Microscopy (FE-SEM).

