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EMSL In Brief

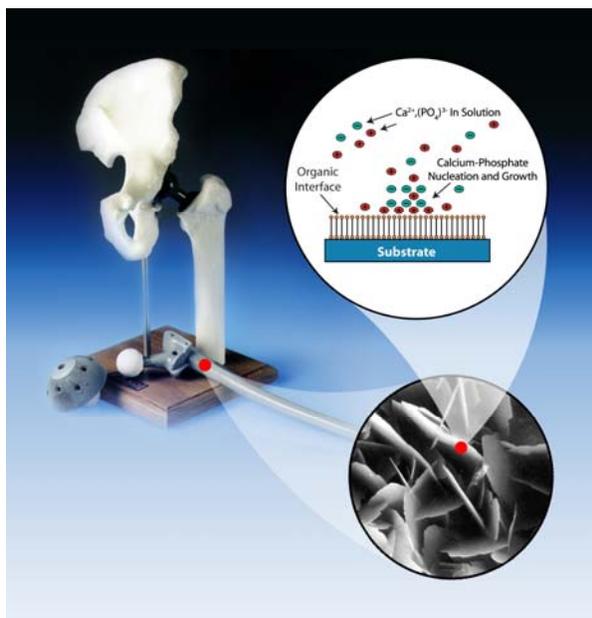
Environmental Molecular Sciences Laboratory

Calcium-Phosphate Coating Process Receives Prestigious FLC Award

A process for applying a calcium-phosphate coating containing therapeutic agents to orthopedic implants and other medical devices received a Federal Laboratory Consortium 2006 Excellence in Technology Transfer Award.

The Surface-Induced Mineralization process, developed by EMSL Director Allison Campbell and her collaborators at the Pacific Northwest National Laboratory (PNNL), was licensed in 2004 by Bacterin, a biomaterials research, commercialization, and development company located in Belgrade, Montana. The benefits of the coatings on orthopedic implants are twofold:

- Calcium-phosphate coatings containing the therapeutic agent have been proven in tests to kill infection-causing bacteria or greatly inhibit growth of bacteria by greater than 99 percent, helping prevent dangerous and costly post-surgical infections.
- The water-based deposition process coupled with the therapeutic agent provides an advanced method for applying coatings of pure calcium-phosphate—a natural component of bone—to artificial joints, allowing enhanced bone bonding and helping avoid loosening of the implant in the body.



Surface-Induced Mineralization process for coating orthopedic implants. The process involves coating the metal portion of the implant with a calcium-phosphate solution containing a small amount of therapeutic agent.

Campbell and PNNL Commercialization Manager Eric Jurrus were instrumental in working with Bacterin to license the process. Following licensing, Bacterin received a \$1.4-million appropriation from the Department of Defense to coat metal rods and pins for use in the battlefield. In addition, Bacterin was named one of the Top 25 Breakout Companies in 2005 by *Fortune Magazine*.

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