Center for Biomedical Research

Materials for Biomedical Applications

Bioactive Glasses for Tissue Regeneration

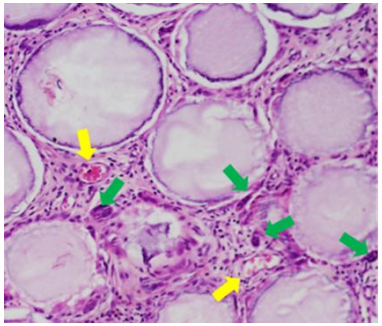
- Controlled release compositions that stimulate soft-tissue repair; technology is commercially available
- Fibers and micro-particles designed for anti-bacterial and hemostatic responses
- Clinical studies indicate reduced scarring compared with other treatments

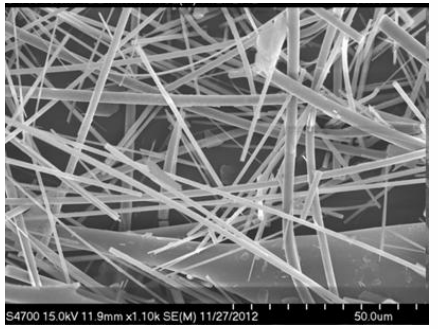
Glass- and Ceramic-Based Scaffolds for Bone Repair

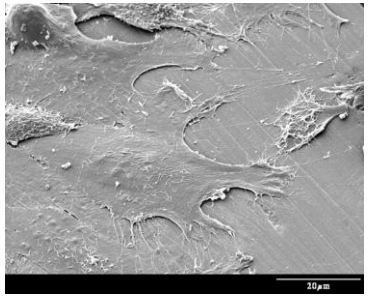
- Microstructures that simulate bone structures, with similar compressive strengths; nanoporosity for drug delivery
- Additive manufacturing techniques
- Promote bone regeneration in animal models

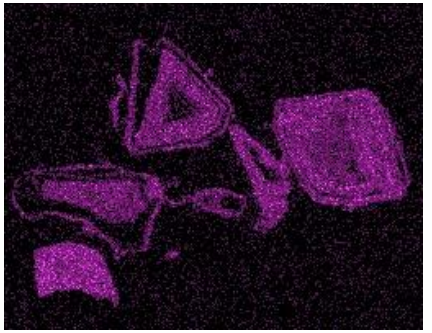
Composites with Hydrogels

- Bio-printed composites including stem cells to regenerate tissue for personalized care









PoC: Richard K. Brow, Distinguished Professor Emeritus of Materials Science and Engineering. brow@mst.edu
573-341-6812

Prior Funding Sources

- U.S. Army Medical Research Acquisition Activity
- National Institutes of Health
- National Science Foundation

Keywords

- Tissue regeneration, wound healing, bioactive materials, composites, stem cells

Recognitions

- Fellow and Past President, American Ceramic Society
- Fellow, National Academy of Inventors

Collaborative Interests

- Tissue engineering, controlled release materials, bioactive glasses, biomedical devices, bio-interfaces, dental materials