

## CHEMICALLY INITIATED BONE CEMENT



### **Brief Description:**

A biocompatible polymer bone cement with numerous advantages over the currently used polymethyl methacrylates.

### **Background:**

Currently available commercial bone cements are based on polymethyl methacrylates and have several disadvantages including toxicity, lack of bioactivity, volumetric shrinkage, tissue necrosis, and the generation of heat upon polymerization. Due to these high temperatures produced during polymerization, antibiotic treatment with bone cement is very limited. Only tobramycin, gentamycin and vancomycin are heat-stable and can survive the high temperatures during the polymerization of PMMA's.

### **Invention Description:**

Our chemically initiated cement is composed primarily of a monomer that has already proven very effective in commercial dental composites. Our extensive testing of this new cement has found that this system is biocompatible, has a peak exotherm that is below 45 degrees C, low shrinkage, and excellent mechanical properties. This system provides a biocompatible alternative to PMMA-based bone cements while maintaining good mechanical properties.

### **Uses:**

Bone repair, orthopedic surgeries, implants, etc.

### **Advantages:**

- Biocompatible
- Less heat generated during polymerization
- High strength
- Low shrinkage

\*Patent Pending

Please visit our website at: <http://www.umkc.edu/ors/ott> for a detailed description of this and other technologies.

### **UMKC OFFICE OF TECHNOLOGY TRANSFER**

4747 TROOST RM. 120  
KANSAS CITY, MO 64110  
PHONE: 816-235-5091  
FAX: 816-235-5092  
E-MAIL: ERICWA@UMKC.EDU  
WEBSITE: WWW.UMKC.EDU/ORS/TT