Engineered Biomaterials for Bone and Tissue Repair

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Abstract: A global challenge is to provide healthcare for an aging population. In particular, there is a growing need for engineered biomaterials to replace diseased or worn out tissues and organs in the body. Missouri S&T has a recognized leadership in the creation of bioactive glass for bone and soft tissue repair. This presentation will discuss recent and current research at Missouri S&T in the development and evaluation of bioactive glass for the repair of loaded and non-loaded bone, and for the healing of soft tissue wounds. Efforts to enhance interdisciplinary research in Biomedical Engineering at Missouri S&T through the Center for Bone and Tissue Repair and Regeneration (CBTRR) will be briefly described.

Len Rahaman is Professor of Materials Science and Engineering and Director of the Center for Bone and Tissue Repair and Regeneration at Missouri S&T. He joined Missouri S&T in 1986 where he has received Faculty Excellence and Research Awards. For many years, his research efforts were in the areas of processing and sintering of advanced ceramics. He is a Fellow of the American Ceramic Society, and his textbooks on Ceramic Processing and Sintering of Ceramics are recognized as the standards in those areas. Dr. Rahaman also teaches a continuing education short course in Sintering of Ceramics for the American Ceramic Society. In the last five to ten years, Dr. Rahaman’s research has focused mainly on bioactive ceramics and glasses for bone repair and tissue engineering applications. He has received the Claypool Award for Medical Research from Missouri S&T, the Best Paper Award from the International Society for Technology in Arthroplasty, and the University of Missouri System Award for Inter-Campus Collaboration for his work on biomaterials. He is the author of 4 textbooks and the author/co-author of nearly 200 publications.