

Preface

I am delighted to introduce the proceedings of the 28th Annual Meeting of the International Society for Ceramics in Medicine (Bioceramics 28) held October 18 to 21, 2016, in Charlotte North Carolina, USA.

The title of Bioceramics 28 is “Multifunctional Bioceramics for Innovative Therapy” which highlights the multi-faceted application potentials of bioceramics. For the last four decades, bioactive ceramics have excelled over polymeric materials in the area of bone reconstruction primarily due to the unique bioactivity property that stimulates bone cell function and tissue formation. The extensive research efforts on the mechanism of bioactivity have led to a clear understanding of how bioactive ceramics interact with tissue fluids and signal the cells to make natural tissue. Understanding the elements of bioactivity has provided guidance to several new designs of bioactive ceramics with improved biological performance. Almost all chapters of Bioceramics 28 report on new designs and fabrication methods of bioceramic medical devices for tissue engineering and disease treatments.

The successful reconstruction of bone defects using bioceramics has been taken as a stepping stone to a more ambitious goal; to use the bioactive ceramics as a drug delivery system to treat diseases. It is intriguing that disease treatment using bioactive ceramic drug delivery systems crossed the borders of bone to include soft tissue applications. Data in the literature shine the lights on successful multifaceted applications of bioceramics in treatments of organ cancer, infection and soft tissue augmentation in urology and other fields. Of prime importance is the observation that implantation of bioactive ceramics in soft tissue supports natural soft tissue formation indicating that the activation of cell function by the material takes place without changing the original cell phenotype. This opens the horizon for engineering new generation of bioactive ceramics for augmentation and treatment of soft tissue and organ diseases.

I wanted to thank all members of the Organizing Committee in particular the administrative staff for the significant efforts to make the Bioceramics 28 a success. I would like to extend my deep appreciation and thanks to the Scientific Committee and reviewers for their efforts to review the articles presented in the Bioceramics 28 proceedings.

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