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TMS 2017
146th Annual Meeting & Exhibition



February 26 – March 2, 2017
San Diego, California, USA

BIOLOGICAL MATERIALS SCIENCE

The interaction of materials and biological systems is a rapidly growing, interdisciplinary frontier in materials science and engineering with boundless possibilities. Biological materials science involves the application of materials science and engineering principles to the study of biological materials, including the design, synthesis and fabrication of materials systems from biological lessons. This symposium emphasizes the primacy of biological materials to the development of biomaterials and biomimetic materials. Biological materials comprise the inorganic and organic constituents of biological systems, whereas biomaterials are synthetic materials developed to replace, restore, or augment biological materials. The structure and properties of biological materials exhibit a breadth and complexity unmatched in current biomaterials. Biological materials are formed under ambient conditions by living and adaptive biological systems for multifunctional performance. The structure and properties of biological materials are typically hierarchical, inhomogeneous, and anisotropic. Therefore, biological materials exhibit complex structure-property relationships, which are only beginning to be elucidated. Biomimetic materials (or bioinspired materials) have unique, tailored structure and properties designed based upon the study of structure-property relationships in biological materials. Biomimetic materials most often utilize creative new methods of synthesis/processing and microstructure design in order to achieve the desired functionality.

The symposium will encompass the following themes:

- Biological and natural materials (hard and soft tissues)
- Biomaterials (implants and devices)
- Biomimetic and bio-inspired materials
- Bio-enabled materials and systems
- Bio-related applications

In addition, two poster sessions are planned:

- Biological Materials Science
- Student Poster Contest

ORGANIZERS

Po-Yu Chen, National Tsing Hua University, Taiwan

Francois Barthelat, McGill University, Canada

Michael M. Porter, Clemson University, USA

Steven E. Naleway, University of California, San Diego, USA

PROCEEDINGS PLANS

Selected papers from this symposium may be published in the TMS journal, *JOM*.

SYMPOSIUM SPONSOR

TMS Biomaterials Committee

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