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**TMS 2018**  
147<sup>th</sup> Annual Meeting & Exhibition



**MARCH 11 – 15, 2018**  
**PHOENIX, ARIZONA**

**SUBMIT AN ABSTRACT TO:**

## BIOMATERIALS

### BIO-NANO INTERFACES AND ENGINEERING APPLICATIONS SYMPOSIUM

This symposium focuses on fundamental understanding of biological and biomimetic-solid interfaces, as well as on their implementation into engineering applications. Interfacing biological molecules predictably with solid materials at the nanoscale is the key for hybrid materials design leading to innovative functional properties. Exploiting such properties towards developing functional materials and devices depends on a better understanding and control of the interfacial interactions at the atomic to nanoscale. This symposium will address the synthesis, modelling, and design principles of the bio-nano interfaces and their implementation into practical medical and technical applications such as tissue engineering, catalysis, sensors, electronics, and photonics. While the solids may include metals, ceramics, semiconductors, polymers, and their composites, the biopolymers include proteins, peptides, DNA, RNA, polysaccharides, glycans, lipids, and membranes, as well as cells and viruses. A special emphasis will be given to the assembly processes at solid-liquid interfaces that lead to specific surface phenomena and designed bio-nano-solid self-assembled structures and organizations towards functional materials and devices. The symposium will encompass the following themes:

- Fundamentals on BioNano interfaces
- Surface phenomena: dynamic interfacial interactions
- Biomolecular recognition of solids
- New trends in surface characterization, in situ and ex situ
- Modelling the interactions at the bio-nano interfaces
- Nanoscale assembly rules and design criteria
- Applications to electronics and photonics devices
- Implementations in regenerative and restorative medicine

Topics of interest for focused sessions include:

**Session 1:** Foundation of Bio-nano interfaces

**Session 2:** Surface phenomena and modelling of the bio-nano-assembly formation

**Session 3:** Implementation in regenerative and restorative materials

**Session 4:** Applications and devices on the basis of such technologies

Joint sessions on bio-nano-materials synthesis and characterization and dynamic nanointerphase of the biodegradable materials are planned.

## ORGANIZERS

**Candan Tamerler**, University of Kansas, USA

**Terry Lowe**, Colorado School of Mines, USA

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## SPONSORS

TMS Functional Materials Division; TMS Structural Materials Division

TMS Biomaterials Committee

**ABSTRACT DEADLINE IS JULY 1, 2017. SUBMIT ONLINE AT [www.programmaster.org/TMS2018](http://www.programmaster.org/TMS2018).**

**QUESTIONS? CONTACT [programming@tms.org](mailto:programming@tms.org)**