

---

## Title: Polymer Science and Metallic Composites at the Forefront: Innovations in Biomedical Polymers and Nanotechnology

---



**Prof. Dr. Song-Jeng Huang**

*(Guest Editor)*

Department of Mechanical Engineering, National Taiwan University of Science and Technology  
Taiwan,

E-mail: [sgjghuang@me.ntust.edu.tw](mailto:sgjghuang@me.ntust.edu.tw)

SCOPUS: ( <https://www.scopus.com/authid/detail.uri?authorId=55522746200>)

ORCID iD: (<https://orcid.org/0000-0002-6582-0339>)



**Dr. Chao-Ching Chiang**

*(Guest Editor)*

Department of Mechanical Engineering, National Taiwan University of Science and Technology  
Taiwan,

E-mail: [shoo6667@hotmail.com](mailto:shoo6667@hotmail.com)

ORCID iD: (<https://orcid.org/0000-0002-4127-0950>)

---

### **Proposal**

In the 21st century, the fields of biomedical polymer materials applications and nanotechnology have seen substantial growth. This has led to significant progress in both precision manufacturing and medical testing. The technologies involved have advanced to the point where new and improved processes with various applications have been developed.

The biomedical polymer material and metallic composites are interdisciplinary in nature, combining aspects of material sciences, semiconductor technology, bonding techniques, medicine, plasma processes, mechanical engineering, chemical engineering, and biomedical engineering. Some of the major applications of those materials include manufacturing technologies that are based on semiconductor processes, sintering, and metallurgical processes. This encompasses Micro-Electro-Mechanical Systems (MEMS), etching, and laser processes, which are utilized to create components at the micrometer scale, such as biosensors, detectors, and sensors. These components are crucial for applications in polymer science and composites.

Looking ahead, polymer science and metallic composites are anticipated to have significant applications in the realm of nanotechnology. This includes the miniaturization and accurate detection of devices, which provide real-time data. This data is essential for researchers and users alike, as it helps them to better understand their needs. In addition to this, advanced organic and biological coatings that are applied in bioelectronics, biosensors, or tissue engineering also represent important areas of focus.

This Special Issue offers a platform for sharing knowledge about unparalleled networking and relationship-building opportunities, presenting and discussing topics such as (but not limited to):

Composite material applications;

Metallic composites;

High molecular polymer;

Thermal process;

Biomedical testing and applications;

Plasma treatment;

Bonding;

Laser process;

Microelectromechanical;

Metal hydride;

Hydrogen storage materials;

The relationship between structure, properties, and biological materials applications.

---

---