

## **Classification and medical applications of biomaterials—a mini review**

### **ABSTRACT**

Biomaterials are natural, synthetic, or hybrid materials, which are used in medical devices or implants that are placed in contact with the human biological system to compensate for or restore diminished functions of the body. The field of biomaterials has rapidly developed to meet the ever-expanding needs in healthcare and medicine practices. Advancements in science and technology have enabled the fabrication and reengineering of biomaterials into useful medical devices or implants, such as heart valves, bone plates, hip joints, and cardiac pacemakers. Because biomaterials are placed in continuous close contact with the recipient's body fluids or tissues, the classification of available biomaterials is crucial for selecting safer and highly biocompatible materials. This review focuses on biomaterial classification, namely bioceramic, polymeric, and metallic biomaterials. Their medical applications, advantages, and disadvantages are discussed. Current trends in biomaterials involved in disease treatments, such as controlled drug delivery and cancer therapy, are additionally explored.