OPEN ACCESS Freely available online

Journal of Biomedical Engineering and Medical Devices

Editorial

Biomedical Applications: An Overview

Pragyan Priyadarshini

Department of Microbiology, Utkal University, Public University in Bhubaneswar, Odisha, India

EDITORIAL

Thermal spray processes and coatings are being used in biomedical applications for the first time. To provide non-oxidized titanium coatings, metallic coatings, especially titanium and its alloys, are sprayed onto metal prostheses in vacuum processes. The coatings are bioinert surfaces with enough roughness and porosity to enable the bone tissue to mechanically interlock. The compatibility and efficiency of bioactive HAp or fluorapatite coatings with bone-type phosphate structures is even better. These materials enable bone tissue to develop on the prosthesis's surface. Vacuum and atmospheric plasma technologies are now used to coat various human spare parts, such as hip, knee, and tooth implants. Nanocellulose applications in biomedicine can be divided into two categories: those that use nanocelluloses as bioinert materials and those that use bioactivated nanocelluloses. Chemical functional groups and biological markers are often added to nanocelluloses to increase their bioactivity. According to a global market study (FMI, 2012), the nanocellulose-related healthcare (medical and life sciences) market was projected to be near $100 billion in 2012. The biomedical application of nanoparticles (NPs) is a new field in which electron microscopy (EM) is a critical method for locating NPs intracellularly. EM can track and quantify NP dispersion, dissolution, and dosage internalized by cells and tissues, but this will only be reliable with proper sample preparation. The resolution of cellular ultrastructure must be considered when preparing cellular material for EM while preventing substantial alteration or loss of target NPs. There are now a variety of EM imaging modes with the spatial resolution and sensitivity needed to calculate and quantify the location and number of NPs in a biological matrix. Analytical EM also allows for the quantification of NP composition and ionic content within intracellular compartments. These techniques use both scanning and transmission EM, and they blur the lines between biological and physical scientists when it comes to EM. Biomedical applications often require the combination of a synthetic system with a living, biological organism, whether for interrogation or manipulation. The resulting system of a synthetic technology interacting with an organism can be classified as a hybrid system, one that brings together historically disparate technologies to create a superior, multifunctional system. Novel nanodrug delivery systems (NNDS) and nano-cancer imaging are two biomedical applications (NCI). The NNDS is gaining popularity as a result of its successful delivery at a predetermined pace and time.

Correspondence to: Pragyan Priyadarshini, Department of Microbiology, Utkal University, Public University in Bhubaneswar, Odisha, India, E-mail: pragyan.p@gmail.com

Received: April 06, 2021, **Accepted:** April 13, 2021, **Published:** March 20, 2021

Citation: Pragyan P (2021) Biomedical Applications: An Overview. J Biomed Eng & Med Dev. 6:159.