

Special Issue Reprint

Ceramic and Metallic Biomaterials. Application in Medical Sciences

www.mdpi.com/books/reprint/11724

Edited by

Oana-Georgiana Dragos-Pinzaru

ISBN 978-3-7258-5531-5 (Hardback)

ISBN 978-3-7258-5532-2 (PDF)



This Reprint gathers cutting-edge research and reviews on ceramic and metallic biomaterials with direct applications in medical sciences. The contributions reflect a broad spectrum of approaches to enhance the safety, performance, and functionality of implants, coatings, and therapeutic systems. Several studies investigate antibacterial and antifungal coatings for dental and orthopedic applications, demonstrating how Ti(C,N)-based layers, sol-gel silica with natural compounds, and anodized Ti-Ag alloys can reduce microbial adhesion while maintaining excellent biocompatibility and corrosion resistance. Other works explore hybrid ceramic-polymer systems enriched with carbon nanotubes, doped bioglass and hydroxyapatite coatings, and advanced methods such as CoBlast deposition, all aimed at improving osseointegration and bone regeneration.

Beyond implants, the Reprint includes innovative approaches in nanomedicine and diagnostics, such as magnetic and gold-coated nanostructures for theranostic use, multimodal cancer therapies combining hyperthermia, chemotherapy, and magneto-mechanical actuation, and proof-of-concept sensors for detecting magnetic nanoparticles. Complementary reviews highlight progress in dental implant surface modification, the role of porous titanium alloys in bone regeneration, and the future of orthopedic biomaterials.

Together, these works illustrate how advances in material design and processing are driving next-generation biomedical solutions, bridging fundamental research with clinical application.

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.