



Shaping the Next Chapter of Biomaterials Innovation

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Welcome to the 2nd volume of *Biomaterials Connect*. The published articles provide valuable examples and highlight the seamless integration of digital design and fabrication, the convergence of nanotechnology and biological systems, and the translation of fundamental scientific discoveries into clinically relevant solutions. Collectively, they offer a clear vision of the future of biomaterials science.

A common theme across these contributions is the continued development of intelligent, high-performance biomaterials. Nanotechnology remains at the forefront of this trend, enhancing drug efficacy, bioavailability, and interactions with biological systems through improved precision and control. Another major advancement has been observed in the field of polymeric and hydrogel biomaterials, where significant improvements in processing methods, chemical composition, and structural architecture have enabled greater customization and enhanced functional performance.

It is also important to highlight advances in manufacturing and digital technologies, including computer modeling, virtual simulation, and micromachining. These methods have become increasingly important in biomaterials research and development (R&D), offering substantial opportunities for customized and optimized patient care across a broad range of disciplines, including dental, orthopedic, and prosthetic applications. In the future, the integration of advanced digital technologies, living systems, and biomaterials, as exemplified by microfluidic models, organoids, and bioprinting, is expected to drive a paradigm shift in biomedical research, fostering greater interdisciplinary collaboration and improving the translation of innovative concepts into clinical and practical applications.

Overall, the current volume reflects the maturity of the biomaterials field while continuing to advance with clear direction and sustained momentum. Such progress is currently defined by a broader focus on sustainability, clinical applicability, and designs that prioritize human needs and experiences. We are sincerely thankful to all the authors, reviewers, and editors of *Biomaterials Connect* for their contributions to scholarly excellence, and we look forward with the highest confidence to the future of biomaterials science.

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