



Special Issue Reprint

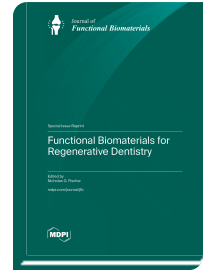
Functional Biomaterials for Regenerative Dentistry

www.mdpi.com/books/reprint/11670

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ISBN 978-3-7258-5279-6 (Hardback)

ISBN 978-3-7258-5280-2 (PDF)



Regenerative dentistry aims to replace diseased and damaged tissue with functionally integrated regenerated tissue rather than conventional bonded or embedded synthetic materials. The wide array of oral tissues that require regeneration due to common diseases—the periodontal ligament supporting sound biomechanical integration of teeth, the dental pulp maintaining tooth vitality, the alveolar bone supporting the function of overlying tissue and retention of teeth, and the mineralized tooth structure—presents many daunting challenges. Overcoming these challenges is essential to achieve oral health and obtain the associated benefits for the well-being and lifestyle of patients.

Biomaterials that promote regeneration serve a growing role in the dentist's repertoire of tools and techniques. The inherently patient-specific, adaptable, biocompatible, and immunomodulatory nature of regenerative biomaterials positions them as the future of everyday dental practice. The long history of surgical techniques in dentistry, combined with the wide scope of biomaterials being developed for nearly every diseased human tissue, produces an exciting opportunity for the development of functional regenerative biomaterials in dentistry. The objective of this Reprint is to collect the latest research on the development of functional biomaterials for regenerative dentistry—broadly defined—to highlight the present and future capacity of dentistry to lead the way in the field of tissue regeneration.

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