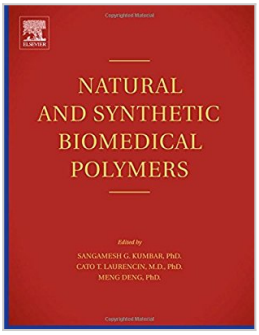

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Polymers are important and attractive biomaterials for researchers and clinical applications due to the ease of tailoring their chemical, physical and biological properties for target devices. Due to this versatility they are rapidly replacing other classes of biomaterials such as ceramics or metals. As a result, the demand for biomedical polymers has grown exponentially and supports a diverse and highly monetized research community. Currently worth $1.2bn in 2009 (up from $650m in 2000), biomedical polymers are expected to achieve a CAGR of 9.8% until 2015, supporting a current research community of approximately 28,000+.

Summarizing the main advances in biopolymer development of the last decades, this work systematically covers both the physical science and biomedical engineering of the multidisciplinary field. Coverage extends across synthesis, characterization, design consideration and biomedical applications. The work supports scientists researching the formulation of novel polymers with desirable physical, chemical, biological, biomechanical and degradation properties for specific targeted biomedical applications.

- Combines chemistry, biology and engineering for expert and appropriate integration of design and engineering of polymeric biomaterials
- Physical, chemical, biological, biomechanical and degradation properties alongside currently deployed clinical applications of specific biomaterials aids use as single source reference on field.
- 15+ case studies provides in-depth analysis of currently used polymeric biomaterials, aiding design considerations for the future

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Editorial Review

Review

"Overall, the book is of very great interest to a wide audience interacting with polymers, including chemists, biologists, and material scientists."--**Biomat.net, July 2014**

"Each chapter has a detailed table of contents. The text is generally well supported with figures and tables. Original literature is extensively cited. A useful index is provided. Overall, the book provides a concise introduction to biomedical polymers. It is hardbound and produced to a good quality."--***Biotechnology Advances*, 32, 2014**

About the Author
Dr. Kumbar is an Assistant Professor in the Departments of Orthopaedic Surgery, Materials Science & Engineering and Biomedical Engineering at the University of Connecticut. His research is focused on synthesis and characterization of novel biomaterials for tissue engineering and drug delivery applications. These polymeric materials namely polysaccharides, polyphosphazenes, polyanhydrides, polyesters as well as blends of two or more of the polymeric materials and composites combining the polymeric materials with ceramics in the form of 3-dimentional porous structures will serve as scaffolds for variety of tissue engineering applications. Dr. Kumbar is an active member of Society for Biomaterials (SFB), Controlled Release Society (CRS), Materials Research Society (MRS) and Orthopaedic Research Society (ORS). Dr. Kumbar is serving as a reviewer for more than 25 journals in the field of biomaterials, drug delivery and tissue engineering. He has recently edited a book “Natural and Synthetic Biomedical Polymers” Elsevier Science & Technology, 2014- ISBN: 978-0-12-396983-5. He is also on the Editorial Board of more than 7 journals in the area of his expertise including Journal of Biomedical Materials Research-Part B, Journal of Applied Polymer Science, and Journal of Biomedical Nanotechnology.

Dr. Laurencin is the Van Dusen Distinguished Endowed Professor of Orthopaedic Surgery, and Professor of Chemical, Materials, and Biomedical Engineering at the University of Connecticut. In addition, Dr. Laurencin is a University Professor at the University of Connecticut (the 7th in the institution’s history). He is the Director of both the Institute for Regenerative Engineering, and the Raymond and Beverly Sackler Center at the University of Connecticut Health Center. Dr. Laurencin serves as the Chief Executive Officer of the Connecticut Institute for Clinical and Translational Science at UCONN.

Dr. Laurencin earned his undergraduate degree in Chemical Engineering from Princeton, his medical degree, Magna Cum Laude, from Harvard Medical School, and his Ph.D. in Biochemical Engineering/Biotechnology from M.I.T.

A board certified orthopaedic surgeon and shoulder/ knee specialist, he won the Nicolas Andry Award from the Association of Bone and Joint Surgeons. His discoveries in research have been highlighted by Scientific American Magazine, and more recently by National Geographic Magazine in its “100 Scientific Discoveries that Changed the World” edition.

Dr. Laurencin is an outstanding mentor and he has received the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring in ceremonies at the White House. Dr. Laurencin has received the Elizabeth Hurlock Beckman Award for mentoring, and the American Association for the

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Dr. Laurencin previously served as the UConn Health Center’s Vice President for Health Affairs and Dean of the School of Medicine. Prior to that, Dr. Laurencin was the Lillian T. Pratt Distinguished Professor and Chair of the Department of Orthopaedic Surgery at the University of Virginia, and Orthopaedic Surgeon-in-Chief for the University of Virginia Health System.

Dr. Laurencin is an elected member of the Institute of Medicine of the National Academy of Sciences, and an elected member of the National Academy of Engineering. He is also an elected member of the National Academy of Inventors.

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