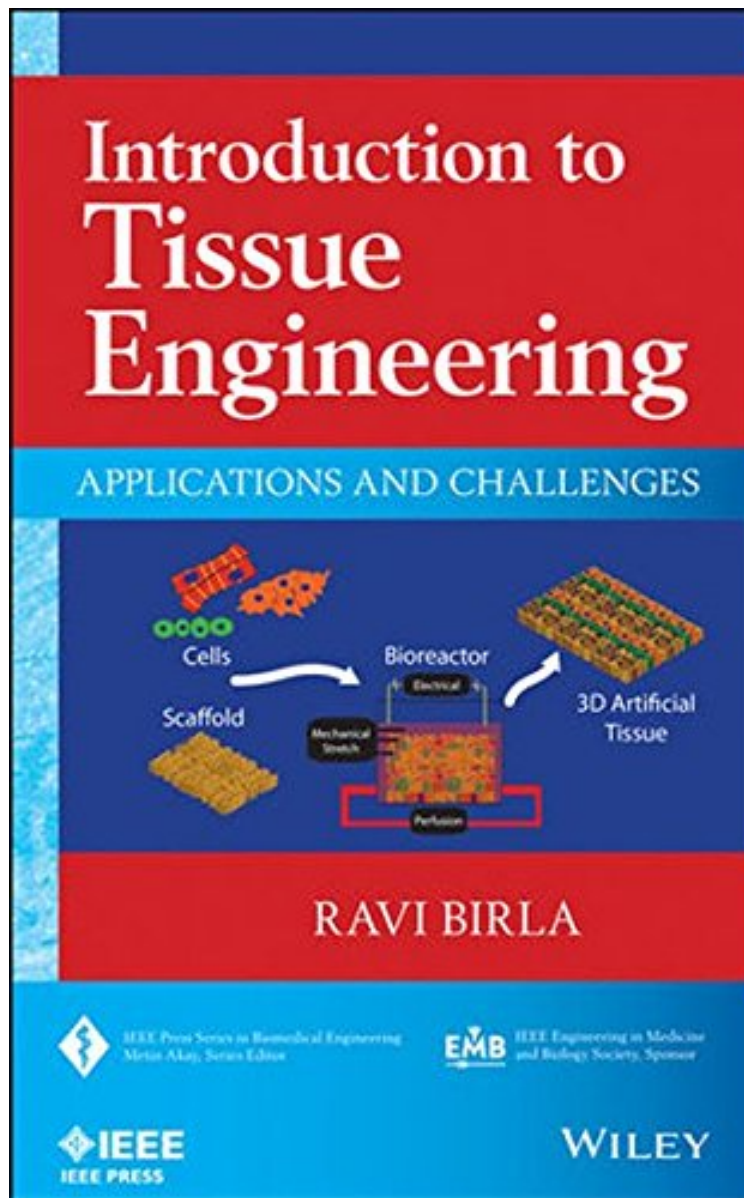


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# Introduction to Tissue Engineering: Applications and Challenges (IEEE Press Series on Biomedical Engineering)

Ravi Birla

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**Ravi Birla : Introduction to Tissue Engineering: Applications and Challenges (IEEE Press Series on Biomedical Engineering)** before purchasing it in order to gage whether or not it would be worth my time, and all praised Introduction to Tissue Engineering: Applications and Challenges (IEEE Press Series on Biomedical Engineering):

2 of 2 people found the following review helpful. Well researched. Well written. Well priced. By Andre Vitor Sobreiro Sigora Comprehensible in every single level. The best textbook in the field, as all the other ones are written by different authors writing different chapters. Dr. Birla, in this textbook, has actually researched every single topic regarding Tissue Engineering and explained in a very linear and interesting way, with lots of definitions and schematic views of the topics. If you're an outsider who's interested in knowing more about Tissue Engineering, this textbook is for you, since it's not very long nor dull. If you are taking classes and don't have a specific required textbook, this is a must have. And even you're already working on the field, that might give a homogeneous knowledge about the field and update on latest accomplishments from different laboratories world-wide. 0 of 0 people found the following review helpful. Great Introductory Book for Tissue Engineering By Sammy I bought this book to help introduce myself to the field of tissue engineering, and I believe that the book held true to its title. If you are looking for a book that is easy to read and has explanatory images to aid in the understanding of different concepts, then this book is one I greatly recommend. The book provides a comprehensive model in the beginning that encompasses the different aspects of the tissue engineering process. It then elaborates on the different parts of the model in a sequential manner and gives well-explained examples. I really enjoyed the book and I think it can be a very useful tool in understanding the different underlying themes in the field of tissue engineering. One thing I also enjoyed was the elaborate provision of the citations used throughout the text, which further strengthens the book's content and allows the reader to refer to the sources if needed. 0 of 0 people found the following review helpful. Very Expository! By A Customer Dr. Birla introduces you to seminal work in the field, the multidisciplinary landscape, and distinguishes between many related fields that encompass regenerative medicine. Dr. Birla coherently defines tissue engineering and provides the design principles that make tissue fabrication possible. He delivers on the necessity for 3D tissue architecture, vascularization of artificial tissue, and bioreactor technology. The last three chapters are dedicated to tracheal tissue engineering, bladder tissue engineering, and liver tissue engineering!

A comprehensive reference and teaching aid on tissue engineering covering everything from the basics of regenerative medicine to more advanced and forward thinking topics such as the artificial liver, bladder, and trachea. Regenerative medicine/tissue engineering is the process of replacing or regenerating human cells, tissues, or organs to restore or establish normal function. It is an incredibly progressive field of medicine that may, in the near future, help with the shortage of life-saving organs available through donation for transplantation. Introduction to Tissue Engineering: Applications and Challenges makes tissue engineering more accessible to undergraduate and graduate students alike. It provides a systematic and logical eight-step process for tissue fabrication. Specific chapters have been dedicated to provide in-depth principles for many of the supporting and enabling technologies during the tissue fabrication process and include biomaterial development and synthesis, bioreactor design, and tissue vascularization. The tissue fabrication process is further illustrated with specific examples for liver, bladder, and trachea. Section-coverage includes an overall introduction of tissue engineering; enabling and supporting technologies; clinical applications; and case studies and future challenges. Introduction to Tissue Engineering: Presents medical applications of stem cells in tissue engineering Deals with the effects of chemical stimulation (growth factors and hormones) Covers current disease pathologies and treatment options (pacemakers, prosthesis) Explains bioengineering, design and fabrication, and critical challenges during tissue fabrication Offers PowerPoint slides for instructors Features case studies and a section on future directions and challenges As pioneering individuals look ahead to the possibility of generating entire organ systems, students may turn to this text for a comprehensive understanding and preparation for the future of regenerative medicine.

About the Author RAVI BIRLA, PHD, is Associate Professor in the Department of Biomedical Engineering at the University of Houston. Dr. Birla's research focuses on the fabrication of 3D cardiovascular constructs, including bioengineering 3D artificial heart muscle, cell-based cardiac pumps, tissue engineering ventricles, and bioartificial hearts.