

Polymer nanofibers produced by electrospinning applied in regenerative medicine

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Abstract

Purpose of the book: *The purpose of the book is to present, on the background of the general retrospective look at issues of materials engineering in the context of progress, requirements and challenges of modern regenerative medicine made based on a review of available world-literature, the results of own researches, including the study of the structure and the properties of the selected polymer materials including the results of biological research, proving the usefulness of the newly developed nano-engineering materials and their applicability in regenerative medicine and tissue engineering. The results of those studies are fully original and represent a significant authors' contribution in Materials Science and Engineering achievements in the field of Nanotechnology.*

The content and scope of the book: *The book is a collection of three appropriately selected, but separately outworked monothematic papers. The first paper entitled "Materials Challenges in Regenerative Medicine" refers to general, retrospective look at issues of materials engineering in the context of progress, requirements and challenges of modern regenerative medicine and the study developed as a state-of-the-art on the basis of the review of the available world literature. On the basis of the study it was revealed that the engineering of nanostructured materials worth of scientific interest because of the expectations of tissue engineering and regenerative medicine are polymer nanofibers. The second paper entitled "Polymer Nanofibers Materials, Fabrication Technologies and Research Methods" is a combination of literature studies and generalize their research experience including a description of the selected standard and co-axial polymer nanofibers and their fabrication methods and the general presentation of key polymer nanofibers investigation methods. The third paper on "Polymer Nanofibers Applied in Regenerative Medicine" is the original report*

from a personally own research and contains a very detailed description of the results of own investigations of polymer nanofibers, including the results of biological research, proving the usefulness of the newly developed nano-engineering materials and their applicability in regenerative medicine, as well as tissue engineering.

Reference to the collection of papers included in the book should be given in the following way:

L.A. Dobrzański (ed.), Polymer nanofibers produced by electrospinning applied in regenerative medicine, Open Access Library, Annal V (2015) Issue 3, 1-168.