Polymer Based Biosensors for Medical Applications - DTU Orbit (31/03/2019)

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The objective of this chapter is to give an overview about the newest developments in biosensors made of polymers for medical applications.
Biosensors are devices that can recognize and detect a target with high selectivity. They are widely used in many fields such as medical diagnostic, environmental monitoring and food safety. The detected element varies from a single molecule (such as glucose), a biopolymer (such as DNA or a protein) to a whole organism (such as bacteria). Due to their easy use and possible miniaturization, biosensors have a high potential to come out of the lab and be available for use by everybody. To fulfi these purposes, polymers represent very appropriate materials. Many nano- and microfabrication methods for polymers are available, allowing a fast and cheap production of devices. This chapter will present the general concept of a biosensor in a first part. The second part will focus on conducting polymers, used as electrode material in devices based on electrochemical detection. A third part will describe the molecularly imprinted technology, where the target is replicated in 3D negative form into the polymer.

General information
State: Published
Organisations: Department of Micro- and Nanotechnology, Polymer Microsystems for Medical Diagnostics
Contributors: Cherré, S., Rozłosnik, N.
Pages: 513-537
Publication date: 2015

Host publication information
Title of host publication: Advanced Polymers in Medicine
Publisher: Springer
ISBN (Electronic): 978-3-319-12478-0
DOIs: 10.1007/978-3-319-12478-0_17
Source: PublicationPreSubmission
Source-ID: 104827330
Research output: Research - peer-review » Book chapter – Annual report year: 2015