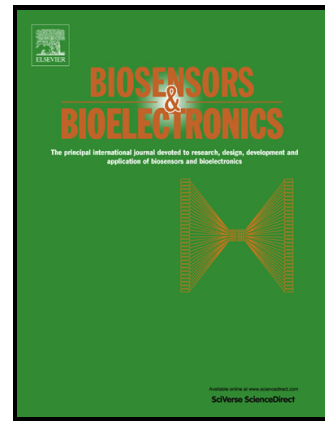


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Review Investigating pipeline and state of the art blood glucose biosensors to formulate next steps

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Abstract

Ten years on from a review in the twentieth issue of this journal, this contribution assess the direction research in the field of glucose sensing for diabetes is headed and various technologies to be seen in the future. The emphasis of this review was placed on the home blood glucose testing market. After an introduction to diabetes and glucose sensing, this review analyses state of the art and pipeline devices; in particular their user friendliness and technological advancement. This review complements conventional reviews based on scholarly published papers in journals.

Keywords: SMBG, CGM, Non-invasive, Smartphone, Wireless

1 Introduction

Home use blood glucose biosensors currently dominate 80% of the world market in biosensors. Of which the portable amperometric glucose biosensors are the most efficient and commercially successful. They are available in various forms such as pens and glucose displays etc. By examining Figure 1 it is visible that the biosensor market has grown at a phenomenal rate since 1985 and their applications have spread in to many sectors. Today they can be applied in many situations such as healthcare, pharma, food industry, environmental monitoring and security. The market share majority (\$13 billion) however is compounded by medical diagnostics; in particular glucose biosensors and those for home use being the most common (Rustagi & Kumar, 2013, Turner, 2013).

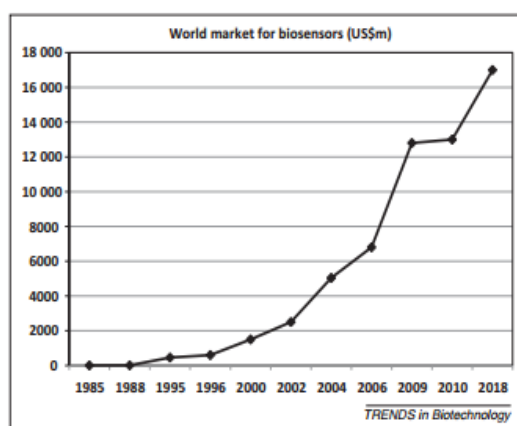


Figure 1: Estimation of biosensor world market (Turner,

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