

A review on the electrochemical sensors and biosensors composed of nanogaps as sensing material

Abstract

In the past two decades, the biological and medical fields have seen great advances in the development of biosensors and biochips capable of characterizing and quantifying biomolecules. To understand the important relationship between the biosensor and nano structure we introduce this proposal to fabricate and characterize the nanogap biosensor using size reduction technique for ss-DNA immobilization and hybridization detection . In this review, 2 masks designs are proposed, first mask is the lateral nanogap with gold electrode and the second mask is for pad gold electrode pattern, and lateral nanogap is introduced in the fabrication process using silicon, and gold as electrode. Conventional photolithography technique is used to fabricate this nanogap (NG) based on the standard CMOS technology and characterization of its conductivity together with its effect during sensing is investigated in this research.