

Nanoelectrode chrome photomask design and specification for biosensor fabrication

Abstract

This paper explains the most crucial part of any microchip fabrication, which is the mask design for photolithography process. The design is initially sketched roughly to meet the design specification and later on designed using AutoCAD software. Therefore, to meet the required criteria, the overall width and length of the device is optimized at 12mm and 20.21mm respectively. Optimization of the size is done based on the chip behavior as a disposable chip and adding an economical value when it is commercialized. The nano electrode mask layout comprises of four sets of design which are single gaps for size reduction, single gaps for size expansion, multiple gaps for size reduction and multiple gaps for size expansion. While, the second chrome mask is fabricated for gold contact padding with two types of design sets, one is for single gaps and another is for multiple gaps. Both mask designs were sent for chrome mask fabrication for future use in biosensor fabrication.

Keywords

AutoCAD; Biosensor; Chrome photomask; Clinical diagnostics; Critical dimension; Nano diagnostic; Nanoelectrode; Photolithography