

Mask design platform for zinc oxide nanowire growth

Abstract

This paper mainly represent the simple and effective method to design the chrome mask for patterning the platform for zinc oxide nanowire growth. The most essential aspect that need to be considered in designing the chrome mask is the critical dimension of the mask. Hence, the mask is design by using AutoCAD software to design the desired size and length dimension of the mask. Fabrication and development of zinc oxide consist of a series of major steps. The silicon sample will be initially cleaned, followed by zinc oxide deposition and the zinc oxide nanowire will be growth in vertical direction by using VLS (Vapor-Liquid-Solid) mechanism. The nanowire will be patterned by using the chrome mask which design the platform of the nanowire formation. The initial design of the chrome mask is measured and compared to the fabricated chrome mask to detect the efficiency and the accuracy of the pattern transfer process. Our aim is to develop a comprehensive platform for prominent zinc oxide nanowire growth leading to novel and efficient functional of zinc oxide nanowire devices.

Keywords

AutoCAD; Mask design; Nanowire; Pattern transfer; Platform; VLS mechanism