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Fabrication and characterization of IDE based sensor through conventional lithography method

Abstract

This paper mainly illustrate regarding the fabrication process of IDE based sensor for bio-molecular detection process. Material that is utilized in this process is zinc oxide due to bio-compability and elevated electrical characteristic. IDE mask is designed by using auto-cad software which tailors for detection of bio substance which is extremely small scale in size. Zinc Oxide material is also used due to presented of nanostructure that can be synthesized through hydrothermal route. Zinc oxide solution is prepared by series of sol-gel process and is coated on the SiO substrate which acts as insulator layer during the lithography process. IDE mask is patterned transfer on sample by using conventional lithography process which the parameters are critically adjusted to ensure that the pattern transfer process occur with minimal defects. The fabricated sensor will be further validated through electrical and morphological characteristic. Capacitance test and impedance test is taken with various pH solution to observe the response of the sensor with different pH values. Keywords: IDE sensor, bio-compability, Zinc Oxide, auto-cad software, sol-gel, SiO substrate, hydrothermal route

Keywords; Auto-Cad Software, Bio-Compability, Hydrothermal Route, IDE Sensor, SiO Substrate, Sol-Gel, Zinc Oxide (ZnO)