

# Polymer-Based Surfaces and Their Sensing Applications

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Chemical sensors are analytical tools that are used for the determination of analytes by using a chemical information related to analyte concentration. Different types of materials such as carbon materials, polymer-based structures, metal-based nanoparticles, metal-organic frameworks, mesoporous structures, and transition metal dichalcogenides can be used in the construction of sensor platforms in order to improve the response of sensors. Among these materials, nano- or micro-structured polymers have taken an important place and attracted attention. These nano/micro-structured polymer-based sensing platforms are widely used in biomedical and healthcare applications, food analysis, environmental monitoring, and energy applications [1-6].

The topics of this talk are sensing applications of polymer-based surfaces including electrochemical sensors and nano/micromotors. The polymer-based surfaces mentioned herein are prepared by electrochemical techniques which are practical, rapid, simple, low-cost, sensitive and suitable for creating functional surfaces. Electrochemical modification or preparation of functional and efficient surfaces and interfaces provide certain advantages. Therefore, preparation and characterization of these surfaces will be described in detail. Following that, in the first part, the use of the prepared surfaces in the electrochemical detection of anticancer drugs and neurotransmitters will be demonstrated. In the second part, the use of polymer-based motors for recognition of cancer cell line will be demonstrated.

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