

Third Laureate Fundamental Research



◆ **Project title:** Sensors and Biosensors Fabrication Based on Nanomaterials

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Abstract:

Sensors and biosensors have been widely used in different fields such as; biological and chemical analysis, medical and clinical detection, agricultural and water sciences, environmental monitoring and food processing industries, therefore, the fabrication these devices is important. Numerous efforts have been focused on the significant improvements of precision, accuracy, sensitivity, detection limit, linear concentration range, stability and reproducibility of sensors and biosensors based on application novel compounds such as nanomaterials.

In the present project with immobilization of different electron transfer mediators, enzymes, proteins and various biomolecules such as ; glucose oxidase, catalase, hemoglobine , cholesterol oxidase, super oxide dismutase, alcohol dehydrogenase, nicotin adenine dinucleotide (NAD⁺) and flavine adenine dinucleotide (FAD) onto various nanostructures such as, carbon nanotubes, metals and metal oxide nanomaterials and silicon based nanocompounds sensitive and selective sensors and biosensors for analysis important analytes including, insulin, glucose, arsenic, mercury, nitrite, hydrogen peroxide, dopamine, uric acid, ascorbic acid, iodate, periodate, chlorate, bromate, thiols and mercaptans, glucose, cholesterol, hydrogen peroxide, super-oxide and nitrite have been prepared.

