

## Graphene Oxide Functionalization Strategies for Biosensing Purpose

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### Abstract

With the studies carried out in recent years, a prompt development of nanotechnology and better understanding of nanoparticles' structures and properties have enabled their use in different areas of biotechnology, including bioimaging, drug delivery systems, targeted therapeutic and biosensors for diagnosis and monitoring of various diseases mainly in terms of antibody-antigen, aptamer- biomarker, hybridization interactions. Graphene oxide (GO) is a two-dimensional (2D) carbon nanomaterial with a single layer structure of honeycomb weave known for its unique properties, such as high electron transfer rate, high electrical conductivity, high thermal stability, water solubility, large specific surface area (2630 m<sup>2</sup>/g),

exceptional elasticity and rigidity. Due to these properties GO is an emerging nanomaterial for the development of novel biological sensing platforms. In our present study, we investigated and compared different strategies for GO functionalization in solution phase and its capability to bind biomolecules and thus feasibility to be used in nanobiosensing. Three different functionalization procedure were employed using; i. Carbodiimide chemistry [1], ii. Carboxylation [2], iii. Silanization [3].

### Biography

Ezgi Kivrak is a PHD student at Ege Universities, Turkey. She is a scientific researcher at Ege Universities