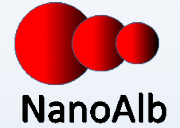


# NanoAlb – WEBINAR



## Electrochemical Grafting of Triazole on Gold Electrodes: A Novel Strategy for Enhanced Surface Modification and Medical Applications

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Finding novel strategies for surface modification is of great interest in electrochemistry and material sciences. In this study, we present a strategy for modification of a gold electrode through covalent attachment of triazole (TA) groups. Triazole groups were electrochemically grafted at the surface of the electrode by a reduction of in situ generated triazolediazonium cations. The resulting grafted surface was characterized before and after the functionalization process by different electrochemical methods (cyclic voltammetry (CV), electrochemical impedance spectroscopy (EIS)) confirming the presence of the grafted layer. The grafting of TA on the electrode surface was confirmed using analysis of surface morphology (by atomic force microscopy), the thickness of the grafted layer (by ellipsometry) and its composition (by X-ray photoelectron spectroscopy). Density functional theory (DFT) calculations imply that the grafted triazole offers a stronger platform than the grafted aryl layers.

This study not only demonstrates a successful method for electrochemical grafting of functional groups but also enhances the potential for advanced applications in medical sciences.

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