Electrodeposition and characterization of silane thin films from 3-(aminopropyl)triethoxysilane

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Résumé en anglais	3-(aminopropyl)triethoxysilane based films have been electrodeposited directly on polycrystalline gold and gold (111) electrodes in aqueous 3-(aminopropyl)triethoxysilane based electrolyte and in tetrahydrofurane based electrolyte. These films were characterized by means of IR-ATR and X-ray photoelectron spectroscopies. The film morphology was investigated by scanning tunneling microscopy while the film growth was observed by ellipsometry measurements. The vibrationnal and X-ray photoelectron analysis suggest that the chemical composition of the electrodeposited films either in liquid tetrahydrofurane or in liquid 3-(aminopropyl)triethoxysilane is identical. The resulting coating thickness is different for the same biasing time in the two liquid media. The gold surface is coated irreversibly by an amino terminated film of great interest for sensor applications which was used as the functionalized part of a surface plasmon resonance biosensor to monitor α-lactalbumin graft.
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