

Imprinted expended gate Field-Effect transistor for pesticide detection

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An extended gate field-effect transistor (EGFET) is a device that can be applied to chemical sensing with the benefit of low cost electrodes. A poly(methylmethacrylate) (PMMA)-imprinted film has been applied to fabricate on indium tin oxide glass as a gate electrode for an EGFET sensor for a specific detection of carbaryl sample. The imprinted film was obtained by mixing PMMA and carbaryl in dichloromethane and drop-cast on the EGFET electrode. Prior to measurements of carbaryl samples, the film was thoroughly rinsed with a low content of ethanol aqueous solution to remove carbaryl from the film. The carbaryl detection by the imprinted EGFET sensor was compared with that of the non-imprinted EGFET. The sensitivity, concentration range and specificity of the sensors were investigated. The imprinted EGFET has a high potential for low cost fabrication of easy-to-use pesticide sensors.

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