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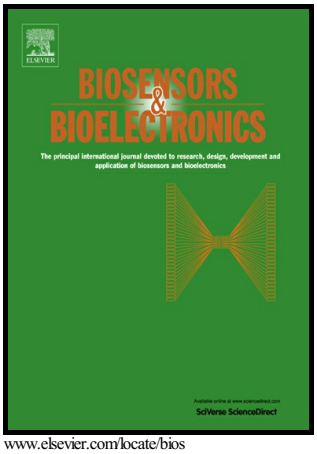

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Preparation of Co_3O_4/crumpled graphene microsphere as peroxidase mimetic for colorimetric assay of ascorbic acid

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Abstract

The well-dispersed Co_3O_4 nanoparticles-decorated crumpled graphene microsphere (CGM) was successfully prepared by aerosol-assisted frying self-assembly and annealing process. It is found that the obtained Co_3O_4/CGM nanohybrid possessed enhanced intrinsic peroxidase-like activity and could catalytically oxidize 3,3',5,5'-tetramethylbenzidine by H_2O_2 to produce a typical blue product. But the presence of ascorbic acid could induce the reduction of oxTMB to TMB, resulting in a significant blue color fading. Therefore, a simple, sensitive and selective