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1 **Electro Membrane Extraction Using Sorbent Filled Porous Membrane Bag.**

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7

8 Abstract

9 Electro membrane extraction-solid-liquid phase microextraction (EME-SLPME) was developed for  
10 the first time to determine phenolic contaminants in water. The extraction system consisted of a  
11 solid/liquid interface that permitted a three-phase microextraction approach involving an aqueous  
12 sample (donor phase): an organic solvent-sorbent within a membrane bag, and an organic solvent  
13 (extractant phase), operated in a direct immersion sampling system. The sorbent, reduced graphene  
14 oxide/polyvinyl alcohol (r-GO/PVA), synthesized using graphene oxide and polyvinyl alcohol by  
15 dispersing the graphene oxide in polyvinyl alcohol and chemically reducing it in aqueous solution.  
16 The prepared sorbent was dispersed in 1-octanol and the solution was immobilized by sonication in  
17 the membrane bag wall pores which was in contact with the aqueous donor solution and organic  
18 extractant solvent (1-octanol) in the main bag itself. The analytes were transported by application of

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