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A new strategy for the modification of a carbon paste electrode with carrageenan hydrogel for a sensitive and selective determination of arsenic in natural waters.

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ABSTRACT

An adsorptive stripping voltammetric method for the determination of As(III) and As_{total} in water samples using a carrageenan modified carbon paste electrode is presented for the first time (CAR-CPE). The modified electrode was prepared in different ways: by adding CAR in solid form or as a hydrogel together with graphite and paraffin, as well as adsorbing CAR by applying a potential on an unmodified carbon paste electrode. The best results were obtained when CAR was incorporated as hydrogel (HCAR-CPE). The selection of the ratio amounts for electrode preparation was carried out applying a multivariate experimental design. Variables like amount of graphite (U_1), HCAR (U_2) and paraffin (U_3) were optimized using a (2^K+2K+C) model. The results showed that the amount of HCAR

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