HEXAVALENT CHROMIUM PROBE BASED ON THE PEROXIDASE MIMETIC CATALYST

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Abstract - A new hexavalent chromium (Cr(VI)) probe was proposed using graphene oxide (GO) as a peroxidase mimetic catalyst. The detection based on the color change of tetramethylbenzidine (TMB), which was catalyzed by GO. Firstly,by adding 8-hydroxyquinoline (8-HQ), the color of the probe will be turned "OFF".The color will be turned "ON" when Cr(VI) was added owing to the chelation reaction between 8-HQ and Cr(VI). The color change can be observed by naked eyesor UV-vis spectrophotometer. Under the optimal experimental conditions,the prepared probe exhibited high selectivity, limit of detection (6 nM), andlarge linear range. The available application of the method for real water sampleswas appliedsuccessfully.

Keywords - Hexavalent chromium; chelate; graphene oxide; mimetic catalyst; naked eyes.