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Amperometric paper sensor based on Cu nanoparticles for the determination of carbohydrates

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Highlights

- A simple and low-cost sensor based on Cu nanoparticles supported on paper has been fabricated
- Best formulation for glucose detection has been optimised through experimental design
- An effective method for the estimation of total carbohydrates has been developed
- The method has been successfully tested in soft drinks

Abstract

In the present article the development of a paper-based amperometric sensor for the determination of glucose and of the total carbohydrates is described. The motivation of the study lies in the necessity of novel low cost and fast methods for the determination of sugars in foodstuff; the commonly used procedures, in fact, often suffer from inaccuracy. To this aim, paper-based electrodes have been fabricated through the deposition of an electrically conductive ink based on Cu nanoparticles, graphite and polystyrene. In order to

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