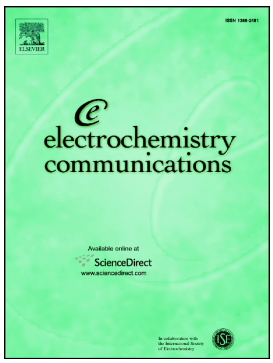

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Preparation and study of a carbohydrate-functionalized carbon surface by electrochemical oxidation of 4-aminophenyl-β-D-glucopyranoside

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ABSTRACT

4-aminophenyl-β-D-glucopyranoside has been electrochemically immobilized on carbon and PPF surfaces by oxidation of the amine. The unprotected glucoside layers were analyzed by XPS, AFM, CV and contact angle experiments. Results demonstrate that the carbohydrate-functionalized surfaces retain the desirable properties of the glucoside compound, producing a wetting-enhancing effect and permitting the electrochemically controlled release of a glucosyl cation equivalent by oxidative cleavage of the anomeric glycosyl–O bond.

KEYWORDS. Modified electrode, amine oxidation, glucose, glucosyl cation.