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S1. Nano(bio)Sensors and Bioelectronics
Poster

29 Development of an Enzyme Coated Microcantilever-Based Biosensor for Specific Detection of Short–Chain Alcohols

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This paper describes the development of a biosensor designed to enzymatic detection of short-chain alcohols. The biorecognition element, alcohol dehydrogenase, was immobilized on self-assembled monolayers deposited on top of silicon nitride microcantilevers. The self-assembly process was performed by surface activation using 3-aminopropyltriethoxysilane, followed by glutaraldehyde and biomolecule binding. X-ray photoelectron spectroscopy and atomic force microscopy were used. The biosensor showed a lower response time, a sensibility from 0.03 to 1.2 mL/L. Its selectivity was analyzed through exposure to pure and mixed volatile solvents. Sensor sensibility was higher in the presence of short-chain alcohols family and practically null involving others polar or nonpolar solvents.