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Biosensing systems based on detecting changes in cantilever surface stress have attracted great interest. To achieve high reliability of measurements, high quality and high reproducibility in functionalization of the sensor surface are key points. In this paper, we investigate different methods to clean and regenerate the sensing surface of cantilever biosensors. Perchloric acid potential sweep, potassium hydroxide-hydrogen peroxide, and piranha cleaning are investigated here. Peak-current potential differences from cyclic voltammetry, X-ray photo-electron spectroscopy and fluorescence detection are applied to characterize surface cleanliness. The experimental results show that piranha cleaning is the most reliable and efficient cleaning procedure.

General information

State: Published
Organisations: Department of Micro- and Nanotechnology, Nanoprobes, BioLabChip, Bioanalytics, McGill University
Number of pages: 2
Publication date: 2012
Peer-reviewed: Yes
Electronic versions:

NMC_2012_Final
Research output: Research - peer-review › Paper – Annual report year: 2012