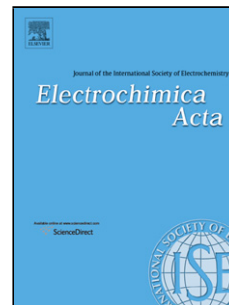


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Surface functionalization for spore-based biosensors with organosilanes

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Abstract

In the present work, surface functionalization of different sensor materials was studied.

Organosilanes are well known to serve as coupling agent for biomolecules or cells on

inorganic materials. 3-aminopropyltriethoxysilane (APTES) was used to attach

microbiological spores to an interdigitated sensor surface. The functionality and physical

properties of APTES were studied on isolated sensor materials, namely silicon dioxide (SiO₂)

and platinum (Pt) as well as the combined material on sensor level. A predominant

immobilization of spores could be demonstrated on SiO₂ surfaces. Additionally, the

impedance signal of APTES-functionalized biosensor chips has been investigated.

Keywords: biosensor, silanization, *Bacillus atrophaeus*, endospores, immobilization

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