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## Solid-Contact Potentiometric Sensor Based on Polyaniline and Unsubstituted Pillar[5]Arene

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### Abstract

© 2015 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. A novel potentiometric sensor based on screen-printed carbon electrode covered with electropolymerized polyaniline (PANI) and unsubstituted pillar[5]arene as ionophore has been developed and tested in potentiometric measurements of pH and metal ions. The introduction of pillar[5]arene improved the reversibility of the pH response in the range from 2.0 to 9.0 with the slope of 45mV/pH. Among metal cations, the response to Fe<sup>3+</sup> and Ag<sup>+</sup> ions was referred to PANI redox conversion whereas the signal toward Cu<sup>2+</sup> in the range from 1.0×10<sup>-6</sup> to 1.0×10<sup>-2</sup>M (limit of detection (LOD) 3.0×10<sup>-7</sup>M) to specific interaction with the macrocycle.

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### Keywords

Electropolymerization, Pillar[5]arene, Polyaniline, Potentiometric sensor, Solid-contact sensor