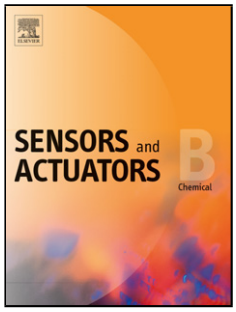

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A novel electrochemical imprinted sensor for acetylsalicylic acid based on polypyrrole, sol-gel and SiO_2@Au core-shell nanoparticles

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Highlight

- A novel electrochemical imprinted sensor was constructed for determination of acetylsalicylic acid.
- SiO_2@Au core-shell nanoparticles were introduced to improve performance of the sensor.
- Sol–gel technology and conducting polymer were applied to form recognition element of the sensor.
- The proposed sensor was used successfully for acetylsalicylic acid determination in real samples.

Abstract

A new nanocomposite imprinted electrochemical sensor was developed for sensitive and selective determination of acetylsalicylic acid (ASA), based on a gold electrode modified with one-step electropolymerization of the molecularly imprinted polymer (MIP) composed from polypyrrole (ppy), sol-gel, Silica@Gold core-Shell nanoparticles (SiO_2@AuNPs) and acetylsalicylic acid. SiO_2@AuNPs were introduced into the polymer matrix for the