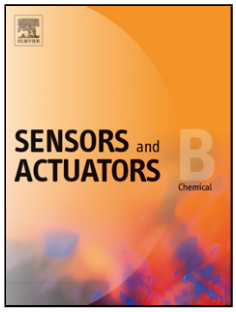

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Naked-eye-based Highly Selective Sensing of Fe^{3+} and further for PPi with Nano Copolymer Film

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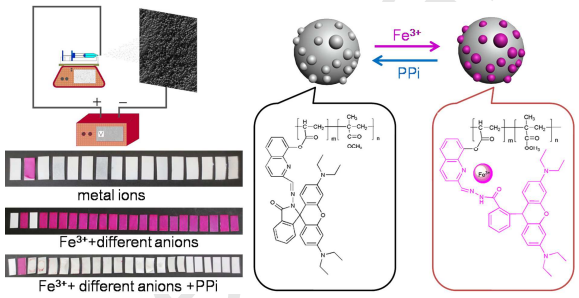

Graphical Abstract

Novel rhodamine-functionalized electrospun film was synthesized and utilized as colorimetric chemosensor for Fe^{3+} and further for PPi for the first time. This prepared copolymer was electrospun into nano film, as a solid-state sensor, which exhibits highly selective recognition of Fe^{3+} ions over various environmentally and biologically relevant metal ions and anions with a distinct color change from colorless to pink in very fast response time (<1 min). The sensor can detect Fe^{3+} quantitatively in concentration range of 100–2000 μM, and the calculated low detection limit (LOD) value could be 1.19 μM for Fe^{3+}. As the resultant product, the Fe^{3+}-contaminated nano film showed recovered color change by extra addition of PPi solution. It was found that the absorption intensity at 564 nm of the Fe^{3+}-contaminated nano film