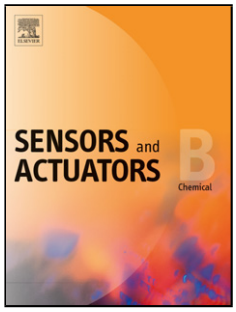

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DEVELOPMENT OF A POLYMER/TIO$_2$ HYBRID TWO-DIMENSIONAL PHOTONIC CRYSTAL FOR HIGHLY SENSITIVE FLUORESCENCE-BASED ION SENSING APPLICATIONS

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Highlights

- The polymer/TiO_2 hybrid 2D-PhC achieved fluorescent signal enhanced 25 times at 640 nm.
- The polymer/TiO_2 hybrid 2D-PhC was fabricated by liquid phase deposition and nanoimprint lithography.
- The polymer/TiO_2 hybrid 2D-PhC K^+ sensor achieved 4 times higher sensitivity than planar film K^+ sensor/
- The highly sensitive method using the polymer/TiO_2 hybrid 2D-PhC can be applied to various highly sensitive polymer-based fluorescence sensing devices.

Abstract

In this study, we developed a polymer/TiO_2 hybrid two-dimensional photonic crystal (2D-PhC) optical ion sensor that shows fluorescence enhancement based on the matching of the fluorescence