

Development of Polymeric Fluorescence Sensor for the Determination of Bisphenol-A

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Abstract : Bisphenol-A (BPA), 2,2-bis(4-hydroxyphenyl)propane, is one of the highest usage volume chemicals in the world. Studies showed that BPA maybe has negative effects on the central nervous system, immune and endocrine systems. Several of analytical methods for the analysis of BPA have been reported including electrochemical processes, chemical oxidation, ozonation, spectrophotometric, chromatographic techniques. Compared with other conventional analytical techniques, optic sensors are reliable, providing quick results, low cost, easy to use, stands out as a much more advantageous method because of the high precision and sensitivity. In this work, a new photocured polymeric fluorescence sensor was prepared and characterized for Bisphenol-A (BPA) analysis. Characterization of the membrane was carried out by Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy (ATR-FTIR) and Scanning Electron Microscope (SEM) techniques. The response characteristics of the sensor including dynamic range, pH effect and response time were systematically investigated. Acknowledgment: This work was supported by the Scientific and Technological Research Council of Turkey (TUBITAK) under Grant 115Y469.

Keywords : bisphenol-a, fluorescence, photopolymerization, polymeric sensor

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