

**REDOX POLYMERS FOR USE IN
ELECTROCHEMICAL-BASED SENSORS**

ABSTRACT OF THE DISCLOSURE

[0064] A redox polymer for use in an electrochemical-based sensor includes a hydrophobic polymer backbone (e.g., a hydrophobic poly(methyl methacrylate) polymer backbone) and at least one hydrophilic polymer arm (such as a hydrophilic oligo(N-vinylpyrrolidinone) polymer arm) attached to the hydrophobic polymer backbone. The redox polymer also includes a plurality of redox mediators (e.g., ferrocene-based redox mediators) attached to the at least one hydrophilic polymer arm.