

**IONIC HYDROPHILIC HIGH MOLECULAR WEIGHT REDOX
POLYMERS FOR USE IN ENZYMATIC ELECTROCHEMICAL-BASED
SENSORS**

75

ABSTRACT OF THE DISCLOSURE

Ionic hydrophilic high molecular weight redox polymers for use in enzymatic
80 electrochemical-based sensors include a hydrophilic polymer (such as a hydrophilic
polymer backbone) with ionic portions (e.g., cationic monomers incorporated in the
hydrophilic polymer backbone) and a plurality of attached redox mediators. The
redox mediators can be, for example, covalently attached to the hydrophilic polymer
in a pendant manner. An exemplary cationic hydrophilic high molecular weight redox
85 polymer is synthesized by co-polymerization of a hydrophilic acrylamide monomer,
[2-(acryloyloxy)ethyl]trimethyl ammonium chloride and vinyl ferrocene.