ELECTROCHEMICAL-BASED SENSOR WITH A REDOX POLYMER AND REDOX ENZYME ENTRAPPED BY A DIALYSIS MEMBRANE

ABSTRACT OF THE DISCLOSURE

An electrochemical-based sensor includes an electrode with at least one electrode surface, a film disposed on the electrode surface, and a dialysis membrane disposed on the film. The film includes a redox enzyme and a hydrophilic redox polymer (i.e., a polymer with an attached redox mediator(s)). In addition, the dialysis membrane serves to entrap the redox polymer and redox enzyme in the vicinity of the electrode. Such entrapment is accomplished by employing a redox enzyme and a hydrophilic redox polymer of a sufficiently high molecular weight that they do not pass through the dialysis membrane.