

Abstract Submitted
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Enzyme Entrapment in Polyaniline Biosensors Observed via Fluorescence Anisotropy and Antiquenching LOUIS NEMZER, Nova Southeastern University — The entrapment of oxidoreductase enzymes within polyaniline polymer films by inducing hydrophobic collapse using phosphate buffered solution (PBS) has been shown to be a cost-effective method for fabricating organic biosensors. Here, we use fluorescence anisotropy measurements to verify enzyme immobilization and subsequent electron donation to the polymer matrix, both prerequisites for an effective biosensor. Specifically, we observe a three order of magnitude decrease in the ratio of the fluorescence to rotational lifetimes. The observed fluorescence antiquenching supports the previously proposed model that the polymer chain assumes a severely coiled conformation when exposed to PBS. We also find that this collapse is further aided by the enzyme itself.

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