

Magnetically Separable Enzyme Precipitate Coating (Mag-EPC) on Carboxylated Polyaniline nanofibers for Antifouling Application

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Quorum quenching via enzymatic degradation of autoinducers has been proposed as an environmental-friendly strategy. For example, acylase (AC) can degrade homoserine lactone type autoinducers. However, the poor enzymatic stability limits its practical uses for antifouling. Here, AC was immobilized and stabilized using carboxylated polyaniline nanofibers via the approach of magnetically-separable enzyme precipitate coating (Mag-EPC). The specific enzyme activity of Mag-EPC was 75 and 300 times higher than those of control samples: covalent attachment (CA) and enzyme coatings (EC), respectively.