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Poly(carboxybetaine methacrylate)-grafted silica nanoparticle: A novel carrier for enzyme immobilization

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Highlights

- ► Zwitterions-grafted nanoparticle (SNPs-pCBMA) was developed for enzyme coupling.
- ► An uncharged polymer-grafted nanoparticle (SNPs-pGMA) was prepared for comparison.
- ► Catalase and lipase bonded on SNPs-pCBMA showed higher stability than on SNPs-pGMA.
- ► Enzymes on SNPs-pCBMA exhibited high stability at neutral and alkaline conditions.

ABSTRACT:

Polymer-coated nanoparticles are favorable carriers for enzyme immobilization for their advantages of high specific surface area, small mass transfer resistance and a large number of active groups for covalent bonding of enzymes. Of the various

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