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Exceptional Chiral Separation of Amino Acid Modified Graphene Oxide Membranes with high-flux

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Abstract

The primary aim of this investigation was to achieve chiral separations via fabricating graphene oxide (GO) based membranes with high separation performances, derived from incorporating a chiral selector (L-Glutamic acid) into GO flakes, based on considerations of GO membranes having the inherently high throughput nature. The GO membrane was fabricated via a simple vacuum filtration method, in which L-Glutamic acid not only provided the stacked GO nanosheets with the necessary stability to overcome their inherent dispensability in water environment but also finely tuned spacing of the GO nanosheets and the resulting performance. The corresponding membrane structure together with GO and amino acid modified GO nanosheets was systematically characterized by SEM, TEM, AFM, XPS, XRD, FT-IR and so on. Finally, enantioseparation performances of amino acid modified GO membranes Glu-GO membranes toward 3, 4-Dihydroxy-D, L-phenylalanine were

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