

表面与界面工程

Ni-mSA/CS双极膜的制备及其在电合成巯基乙酸中的应用

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摘要

以改性海藻酸钠和壳聚糖制备Ni-mSA/CS双极膜并用于电还原制备巯基乙酸。测定了膜的红外光谱、机械性能、含水率及离子交换容量。将阴极镍网预埋在阳离子交换膜的表面上, 以实现阴极室中的零极距电解。实验结果表明, 以巯基乙酸和二硫代二乙酸的混合液为阴极液, 25% H₂SO₄为阳极液, 电流密度为10 mA·cm⁻², 常温电解, 电流效率可达66.7%。

关键词

[改性海藻酸钠](#) [改性壳聚糖](#) [双极膜](#) [巯基乙酸](#) [电合成](#)

分类号

Preparation of Ni-mSA/CS bipolar membrane and its application to electro-generation of TGA

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Abstract

Ni-mSA/CS bipolar membrane was prepared from sodium alginate and chitosan and used as a separator in the electrolysis cell to produce thioglycolic acid(TGA).The FTIR, mechanical properties, moisture content and ion exchange capacity of membranes were investigated.The nickel net was settled down on the surface of mSA membrane to realize zero polar distance electrolysis in the cathode room.The experimental results showed that thioglycolic acid was prepared effectively by electro-reduction of dithioglycolic acid blended with thioglycolic acid in the cathode room and 25% H₂SO₄ as the anode electrolyte.The current efficiency was up to 66.7% at room temperature when current density was 10 mA·cm⁻².

Key words

[modified sodium alginate](#) [modified chitosan](#) [bipolar membrane](#) [thioglycolic acid](#) [electro-generation](#)

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