

Development and Characterization of Biosynthesized Green Polymer Membranes for Microfiltration Applications = 生物合成微

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摘要

薄膜技術應用於水處理正受到全球性重視，在水與廢水處理方面，這項應用技術已越來越專業且精緻。目前全球約有26億人使用不安全的水源，故本研究的目的是研發生物可分解薄膜來去除廢水中會導致疾病之細菌。

本研究主要是探討利用甲殼素-甘油，來製造出具生物可分解之綠色薄膜，以應用於廢水中細菌之過濾。本研究先從國內廢螃蟹殼中萃取出天然甲殼素，此天然甲殼素與甘油經本研究所研發之創新技術予以合成後，即可獲得具生物可分解特性之綠色薄膜。本研究採用厚度測試、靜態膨脹、張力測試、FTIR、數位顯微鏡、SEM-EDS、XRD等測試方法，來分析此綠色薄膜之各項性質，根據上述性質分析結果，本研究亦提出此綠色薄膜表面化學化合物之合成模式。

本研究所合成之綠色薄膜經微過濾試驗後，其大腸桿菌之有效去除率可達92%~95%之間，故可證實本研究所合成之綠色薄膜具有廢水過濾應用功能。

關鍵詞：生物可分解、薄膜、微過濾、甲殼素-甘油、特性分析、廢水

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