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應用新型正滲透薄膜生物反應槽處理廢水之研究

Application of novel forward osmotic membrane bioreactor for wastewater treatment

國立臺北科技大學環境工程與管理研究所 博士班4年級 張浩銘

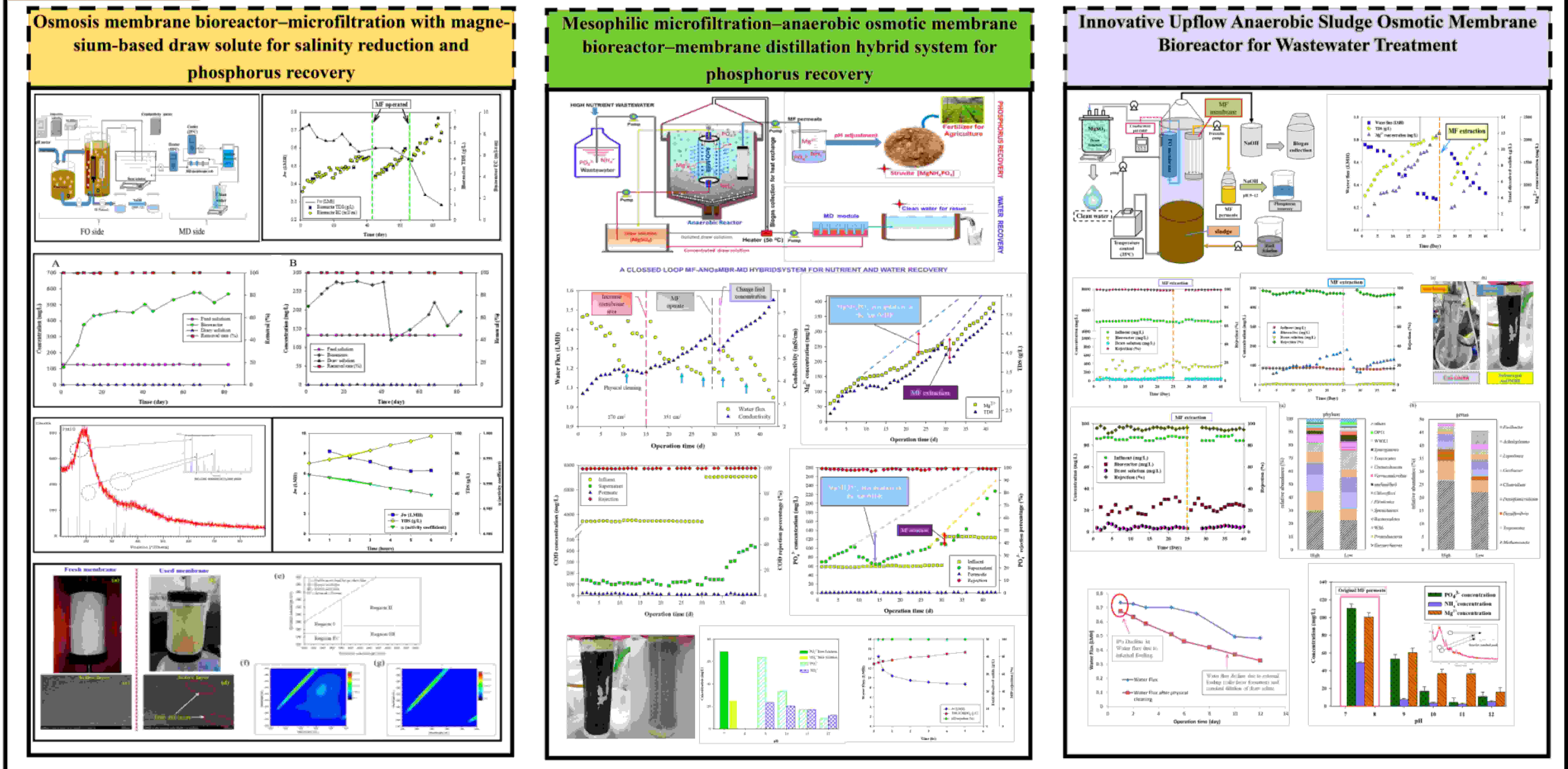
指導老師：陳孝行 教授



研究重點

Membrane technology has been employed in water supply and is important for sustainable water production. Of all the membrane processes, membrane bioreactor (MBR) technology has become one of the most effective options for improving water sustainability because MBR promotes wastewater reuse, requires less space, and produces less sludge. However, MBR technology has some operational problems such as membrane fouling and high energy cost. To overcome these limitations, a hybrid membrane bioreactor, known as the osmotic membrane bioreactor (OMBR), was developed by integrating the forward osmosis (FO) process into MBR technology. OMBR has the benefits of higher water quality, lower membrane fouling, and lower energy consumption. Therefore, the aim of this study is trying to investigate the efficiencies of aerobic/anaerobic OMBR for wastewater treatment. Besides, this study also tried to develop the specific OMBR to solve the drawbacks of typical OMBR system.

研究結果



研究生活及心得

從一開始決定念博士班後就開始了這條漫漫長路，一路上跌跌撞撞的，遇到了許多貴人的相助，也同樣地面臨的不少挫折與問題；從解決問題的過程中慢慢地成長與學習，也特別要感謝我的恩師-陳孝行老師，在我學習的過程中指引我，給我許多資源與方向並用心地鼓勵與栽培尚不夠火候的我，老師常說的“出去是要跟別人打仗的”，這也讓我了解到在專業上是絕對不可以輕易犯錯的。此外，也要特別謝謝一直支持我的爸媽，讓我能無後顧之憂的投入於研究之中；也謝謝研究室的學弟妹以及學長姊，因為有你們的相伴，讓我這4年來的博士生生活，不但不覺得孤獨，反而格外的有聲有色；最後，感謝中技社給予我如此的肯定，謝謝評審委員的青睞，我會繼續努力做研究，期許未來能為更多人有所貢獻。