

Green Technologies: From Flexible Brine Management to Efficient Carbon Capture

REGISTER NOW

2022/03/10 (四) 09:00~11:40 · NTU-MIT 聯合線上研討會

時間	主題	演講人
Moderator: Kuo-Lun Tung 童國倫 特聘教授，化學工程學系，NTU		
09:00~09:05	歡迎致詞	Pai-Chi Li 李百祺 研發長，研究發展處，NTU
09:05~09:45	Going Beyond Desalination Plants: Flexible Desalination and Brine Management	Jongyoon Han Professor, Dept. of Electrical Engineering and Computer Science, and Dept. of Biological Engineering, MIT
09:45~10:25	Capture and Direct Conversion of Carbon Dioxide	Betar Gallant Associate Professor and the ABS Career Development Chair, Dept. of Mechanical Engineering, MIT
10:25~10:30	休息	
10:30~11:00	Capacitive Deionization Technology: Perspectives for Desalination, Water Reuse and Resource Recovery 電容去離子技術在脫鹽、水再生與資源回收的應用研析	Chia-Hung Hou 侯嘉洪 教授，環境工程學研究所，NTU
11:00~11:30	An Essential for Upgrading Renewable and Waste Resources: Catalyst Research and Development 可再生及廢棄資源高值化關鍵：觸媒的研究發展	Wen-Yueh Yu 游文岳 副教授，化學工程學系，NTU
11:30~11:40	結語	Kuo-Lun Tung 童國倫 特聘教授，化學工程學系，NTU

*MIT 場次以英語進行 *研討會連結將於活動兩天前 Email 通知 *聯絡人：沈小姐，allyshen@ntu.edu.tw · (02) 3366-6303

MIT 演講人與講題簡介



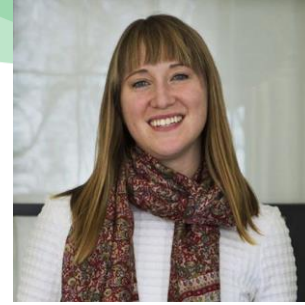
Jongyoon Han

Professor of Electrical Engineering
Professor of Biological Engineering

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Going Beyond Desalination Plants: Flexible Desalination and Brine Management

In this talk, Dr. Han will discuss a few critical challenges in seawater desalination, which are not properly addressed by the current large-scale desalination plants. Large-scale desalination plants are not adequate for resource-limited, sparsely populated regions of the world with limited water supply, which can be addressed by engineering a portable, small-scale desalination device. In Dr. Han's group, they have built such a prototype based on novel scientific advances in electrical desalination processes. Another significant challenges of desalination plants are the proper management of waste brine, which can cause significant environmental issues. Dr. Han will showcase a few promising engineering approaches to reduce the impact of the environmental release of brine rejects from desalination plants.



Betar Gallant

Associate Professor and the American Bureau of Shipping Career Development Professor in Mechanical Engineering

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Capture and Direct Conversion of Carbon Dioxide

In this talk, Dr. Gallant will highlight some existing challenges with CO₂ capture and the uncertain question of what to do with CO₂ once captured. These challenges reveal opportunities to develop emerging concepts to make carbon capture less energy-intensive and the need for more versatile capture technologies to meet demands in varied sectors where carbon will need to be managed. In this context, Dr. Gallant will describe their research efforts developing a concept of integrated CO₂ capture with direct electrochemical conversion, which shows potential to simplify the carbon management chain and lower critical energy penalties by avoiding the costly thermal regeneration step. Direct capture-conversion has expanded in recent years to allow for conversion of CO₂ to multiple possible end products, including minerals and chemical feedstocks. Dr. Gallant will discuss the scientific and practical challenges of the technology and factors to consider when assessing how it might contribute to managing carbon at scale.

NTU 演講人與主持人簡介



侯嘉洪

教授
環境工程學研究所

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侯博士擁有國立臺灣大學土木工程學學士、環境工程學研究所碩士，並於美國喬治亞理工學院取得土木與環境工程博士學位，現任臺大水科技與低碳永續創新研發中心執行長，曾擔任美國勞倫斯伯克利國家實驗室訪問學者、美國加州大學環境奈米研究中心與聖塔芭芭拉分校博士後研究員、美國喬治亞理工學院土木與環境工程博士後研究。研究專長包含：環境奈米技術、膠體與界面科學、環境電化學、水與能源之鍊結技術等領域，並曾獲得許多獎項，包含：科技部吳大猷先生紀念獎 (2018)、科技部優秀年輕學者計畫 (2018、2015、2012)。

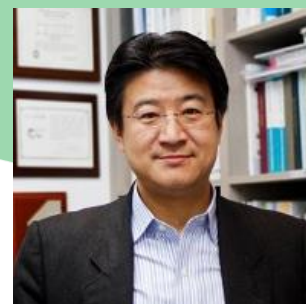


游文岳

副教授
化學工程學系

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游博士擁有國立臺灣大學化學工程學系學士、碩士學位，以及美國德州大學奧斯汀分校化工博士，曾擔任瑞士蘇黎世聯邦理工學院博士後研究員。游博士的研究聚焦於觸媒化學及表面科學，致力研發綠色化學程序以及替代能源科技所需的觸媒材料，進而促進物質與能源間的有效轉換，最新的研究主題包含催化轉移氫化金屬擔體觸媒的表面工程、以金屬超分子聚合物作為觸媒用於催化轉移氫化反應。游博士及其團隊獲獎無數，包含：台灣觸媒學會傑出論文獎 (2021)、科技部延攬特殊優秀人才獎勵(2018-2020)。



童國倫

特聘教授
化學工程學系

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童博士現為臺大工學院黃慶琅先生講座教授，曾任中原大學薄膜技術研發中心主任等職。童博士致力化工高效分離技術與薄膜分離材料研發，主要研究主題包含：無機薄膜製備、薄膜過濾機制、薄膜模組設計、分子模擬視算。童博士曾獲選擔任「國際水協會(IWA)」薄膜技術委員會「副會長 (Vice Chair)」(2017)、獲頒國際水協會「IWA會士 (Fellow)」(2018)、科技部「傑出研究獎」(2019)、「未來科技突破獎」(2019)、「傑出技轉貢獻獎」(2020)、中工會「傑出工程教授」(2020)、「侯金堆傑出榮譽獎」(2020)、「東元獎」(2021)等眾多獎項。