

## 實驗室簡介

本實驗室主要的研究方向為探討化工程序之線上識別與控制器調諧，應用傳統與現代控制理論於各種程序工程，以發展製程分析、管理及控制的方法。另外，探討工廠之控制，其主要為化學工廠中各單元之設備間互動關係對控制效益之影響。

另一研究主題為高分子材料循環利用，並結合溫室氣體與碳足跡盤查，提供循環經濟與節能減碳減法方案。

## 指導教授與研究領域

指導教授	研究領域
錢玉樹教授	反應工程、程序控制、程序系統工程、化學反應器多重穩態之研究
孫殿元教授	程序最適化、數值方法、程序合成、人工智慧
楊鎮遠 助理教授	複雜流體模擬、高分子材料循環經濟、奈米流體應用、溫室氣體碳足跡盤查

## 實驗室成員

實驗室成員	
碩二	林政偉、林辰瑞、李彥霆、陳立澤
碩一	蔡賢丞、蕭宇量
專題生	彭品翔、楊仙羽、黃浩洋

## 主要設備儀器

主要設備(軟體)	功能用途簡介
COMSOL Multiphysics@ CAE有限元素分析軟體	CAE有限元素模擬電磁、結構力學、聲學、流體、熱傳、化工等各領域的產品設計和過程。包含電磁/光學、結構/聲學/機械、流體/熱傳、化學/電化學等模組。
Aspen Plus 化工流程模擬	閃蒸、精餾與吸收、物性、過程分析與優化、間歇過程、換熱器、反應器、複雜精餾、動態過程、聯立方程法、換熱網絡、經濟分析、煤化工過程、聚合過程、與Excel的連接。
Matlab	數值計算、繪圖功能、程式語言功能、繪圖介面設計、工具箱、擴充功能
TRANFOR	數學函數運算：數值分析、系統模擬及自動控制等領域。程式內容架構包含變數定義、函數、副程序、主程式等部分。

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## 畢業生動向

姓名	研究方向	現職
鄭宇庭	氫氧自由基技術裂解廢輪胎中的天然橡膠之模擬與檢測	服役
蔡昀翰	氫氧自由基裂解廢輪胎之檢測與丁苯橡膠裂解模擬	服役