

教育部補助大專校院延攬國際頂尖人才執行成果簡介

請依下列標題提供中英文版本，影音、照片及檔案若無，可免填。***為必填。**

*標題	發展新型永續循環光電催化劑和其反應機制研究	
*計畫成果簡述	利用催化反應機制的研究，發展出新型分子催化劑用於光催化和電催化方式產生氫氣和轉換二氧化碳，並培養出數位碩士生具有相關專長。此外並從事 EMI(English Medium Instruction)教學和研究比較 EMI 和 CMI(Chinese Medium Instruction)教學對化學系學生之學習影響。	
*成果說明	<p>1.學者受惠於教育部本項經費的支持，完成建置實驗室必備的基本設施，採購電化學和光學分析儀研究設備，利用研究設備功能來達成研究的目標；同時也購買化學藥品和耗材。</p> <p>2.運用本計畫合聘1名研究行政助理，以協助規劃實驗室、採購設備、核銷藥品耗材費用之行政事宜，並協助 EMI 教學的研究和統計資料問卷彙整。</p> <p>3. 在教學工作方面，學者每學期至少開設一門英語專業課程，致力培育電化學和有機金屬催化的年輕研究人才。此外從事在 EMI 教學對化學系學生的影響研究，初步統計分析結果顯示，受英語教學和中文教學的學生成績表現，並無明顯差異，並發現英語班學生有比較好的學習動機。</p> <p>4. 在學生訓練方面，目前剛剛有三名完成碩士學位，都分別從事和綠能催化相關的研究。有四名碩士學生和一名博士班學生，繼續和分別從事發展新型分子催化劑來催化與能源轉換相關反應，和發展新型多電子催化模型。</p> <p>5.至今發表四篇論文，其中一篇在國內中文期刊，另外三篇發表在國際期刊。</p>	
成果影音	成果影音標題	
	Youtube 網址	
	說明	
成果照片 (請另行提供圖檔)	成果照片	VW
	照片說明	實驗室一角
成果檔案 (請另行提供檔案)	檔案名稱	

Title	The development of new types of electrocatalysts and photoredox catalysts and investigations of their reaction mechanisms
*Brief Summary	Several new types of molecular catalysts have been developed as photocatalysts and electrocatalysts for the hydrogen evolution reaction and the conversion of carbon dioxide. Through those studies, several graduated students have been trained with relevant expertise. In addition, EMI (English Medium Instruction) courses have been provided for chemistry-major students. Furthermore, the influence of language instruction (EMI vs Chinese Medium Instruction) on the learning of chemistry-major students are ongoing investigation.
*Description of achievement	<p>1. Benefits from the administration fund provided from the Ministry of Education enable facilitating the construction of the necessary basic facilities for the laboratory and purchasing of electrochemical and optical equipment. The fund is also allocated to purchase chemicals and consumables.</p> <p>2. Hire a joint administrative assistant to assist in administration, purchasing equipment, chemicals and consumables, and assisting in the research of EMI teaching and the collection of statistical questionnaires.</p> <p>3. In terms of teaching work, the scholar is fully committed to cultivating young research talents in electrochemistry and organometallic catalysis. At least an EMI course was provided every semester. In addition, The impact of EMI on student learning is being conducted. The results of the preliminary analysis showed that there is no significant difference in student performance between EMI and CMI. More intriguingly, it was found that students who take EMI courses have better learning motivation.</p> <p>4. In terms of student training, three students have just completed their master's degrees and were all engaged in green energy catalysis. There are four master students and one doctoral student who continue to work on the</p>

	<p>development of new molecular catalysts to catalyze reactions related to energy conversion and the development of kinetic models for multi-electron redox reactions.</p> <p>5. Four papers have been published so far, one of which is published in domestic Chinese journals, and the other three are published in international journals.</p>	
Video	Title	N.A.
	Youtube link	N.A.
	Description	N.A.
Photo	Title	VW
	Description	The Corner of the VW lab
Files	Description	N.A.

