2023「中技社科技獎學金」

2023 CTCI Foundation Science and Technology Scholarship

研究獎學金

Research Scholarship

Two-Dimensional Materials Platforms for Fundamental Energy Conversions

二維材料平台之基礎能源轉換研究

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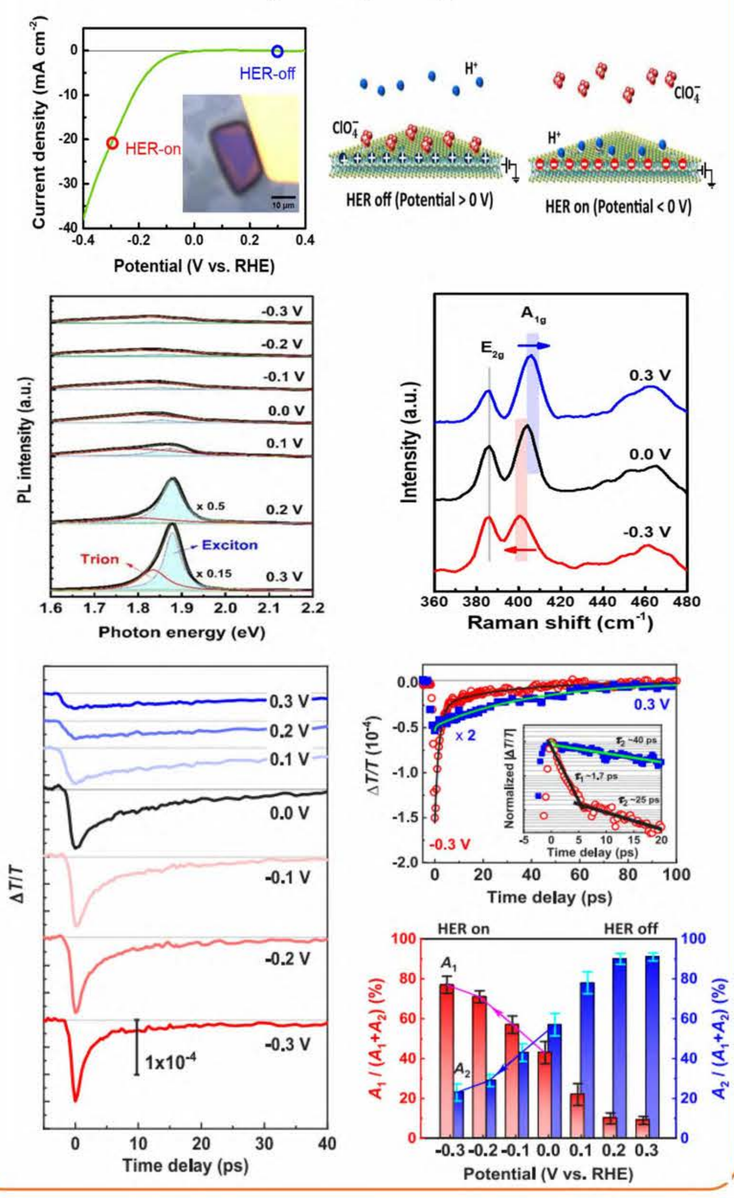
研究重點

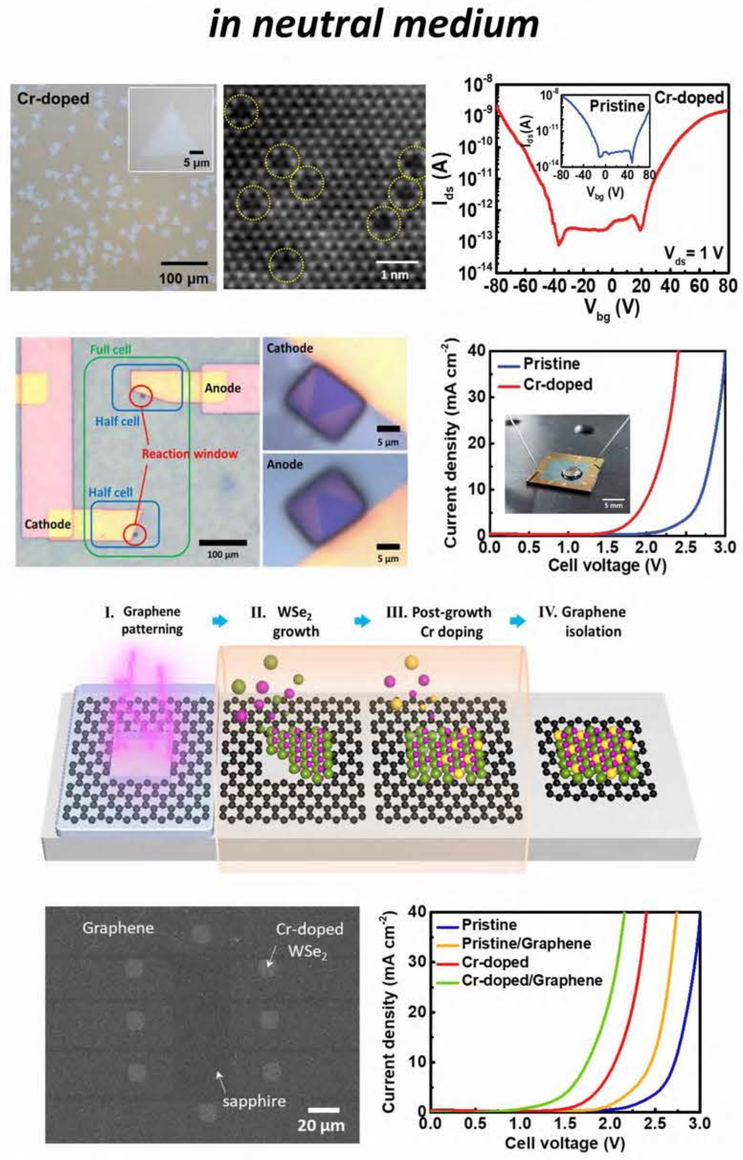
In the face of pressing global energy and environmental challenges, there is an urgent need to develop sustainable and efficient methods for energy conversions In the study, the primary emphasis within the green energy field is on electrochemical water splitting and nitrogen fixation to produce clean fuels. The primary challenges are not only improving its conversion efficiency but also realizing an understanding of catalysts and reaction mechanisms fundamentally. Two-dimensional (2D) materials, especially transition metal dichalcogenides and graphene, have emerged as promising research materials to substitute noble metals and pursue efficient reactions. Lots of extensive endeavors to manipulate and customize 2D materials tailoring in morphology, defect control, doping, contact modifications, and heterojunctions contribute significantly to the understanding of electrocatalysis.

研究成果

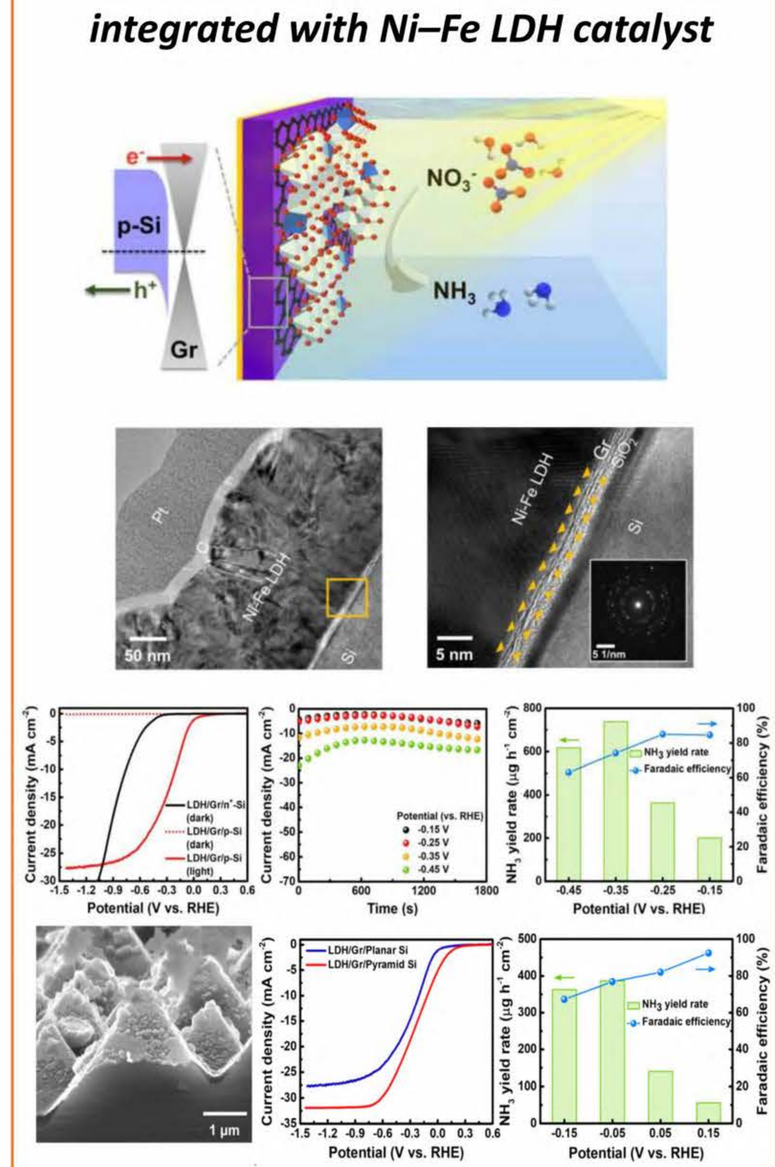
Exciton/trion descriptors in MoS_2 microreactors for hydrogen evolution



Bifunctional WSe_2 microreactors for overall water splitting in neutral medium



Ammonia photosynthesis from nitrate by graphene/Si Schottky junction integrated with Ni–Fe LDH catalyst



研究生活與心得

我對獲得財團法人中技社這項研究獎學金感到非常榮幸和感激。此項榮譽不僅是對我過去努力的認可，抑是給予我面對未來學術研究的深刻動力。感謝指導教授陳俊維老師、實驗室的夥伴們以及合作的實驗團隊，給予豐富的資源與慷慨的協助，這些在研究工作中至關重要。此獎學金可以讓我更深入的投入於研究，力求卓越。