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台灣大學應用力學研究所  
演 講 公 告

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講 題：電漿輔助燃燒之介紹

主 持 人：周佳靚助理教授

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## 電漿輔助燃燒之介紹

# An Application of Plasma Discharge to Combustion Enhancement

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### **Abstract:**

The increasing concerns on the shortage of fossil fuels and the protection of the environment have largely driven the development and research of innovative combustion strategies. New combustion technology is aimed to produce cleaner and more efficient combustion, and meet the ever-increasing requirements for low emissions, especially CO and NO<sub>x</sub>, while at the same time satisfactory combustion stability and high thermal efficiency must be maintained. For the past two decades, the potential of non-thermal plasma on combustion enhancement has gained significant attention, majorly due to its unique capability in producing active species to alter reaction rates and pathways, resulting in an enhancement in combustion control. In plasma-assisted combustion, electron energy plays a key role since electron-associated excitation, dissociation and ionization are strongly dependent on electron energy. Recently, successful application to plasma to flame stabilization, ignition enhancement, ultra-lean combustion, cool flames, fuel conversion and emission control have been reported. These findings and demonstrations have opened a new window of plasma-assisted combustion for practical applications.