

PHOTOTHERMAL MATERIALS AND SYSTEMS FOR SOLAR INTERFACIAL WATER PURIFICATION

by *Zhang Yaoxin*

Date: 11 November 2019 (Monday)

Time: 2pm to 5pm

Venue: E1-06-02

Abstract

Solar-driven interfacial evaporation is an emerging photothermal conversion technology and has gained tremendous attention recently due to its potential applications for water purification and desalination. In this presentation, a series of carbon-based materials that were derived from food waste (FW) have been demonstrated as versatile solar absorbers for low-cost and high-efficiency solar steam generation. A systematic study of the effects of system geometry and ambient conditions on solar evaporation is reported for performance optimization. Such study not only improves our understanding of photothermal systems, but also is of significant value for practical implementation of large-scale solar distillation. Additionally, a new photothermal design with a trilayer configuration that is capable of harvesting hybrid energy to achieve ultrahigh-rate evaporation beyond solar limit is further presented, which could be a promising low-cost solution for water purification and safe water accessibility in undeveloped areas.

Speaker *Zhang Yaoxin*

Biography

Mr. Zhang Yaoxin received his B.S. degree in Shandong University. He is currently a Ph.D. candidate under supervision of Dr. Tan Swee Ching at Department of Materials Science and Engineering, National University of Singapore. His research interests mainly focus on photothermal conversion materials and systems for efficient solar-driven water purification/desalination.

ALL ARE WELCOME!

Prof Ding Jun Host