

SynCTI Research Meeting

DATE : Thursday, 27 April 2017

TIME : 4.30 pm

LOCATION : CeLS Seminar Room 2

Carol Han

Senior Research Fellow

Title:

Urban greenery - more than just aesthetics

Abstract:

One of the ecological water treatment elements incorporated into the landscape design of the redeveloped Bishan-Ang Mo Kio Park is the implementation of a cleansing biotope that functions not only to beautify the surroundings but more importantly, to provide a natural means of mitigating pollution in existing ponds. Since the deployment of the cleansing biotope in early 2012, aesthetics of the water bodies have been enhanced largely as a consequence of noticeable reduction in algae growth in the waters. In-depth knowledge on the contribution of the cleansing biotope in mitigation of water pollution, and consequently algae attenuation, would thus be valuable in better understanding the efficacy of the system in a tropical environment and useful when considering future applications.

Wu Shuke

Research Fellow

Title:

Bioproduction of Benzoic Acid

Abstract:

Benzoic acid is a very important bulk chemical (scale ~ 500,000 tons/year) with wide applications, such as food preservative and precursor for many other organic compounds. The current industrial production of benzoic acid is based on oxidation of toluene with toxic metal catalyst. To provide a greener and more sustainable bioproduction, we designed and constructed a non-natural pathway for conversion of styrene or L-phenylalanine to benzoic acid. Through modular pathway engineering and optimization, several highly active *E. coli* strains were obtained for efficient production of benzoic acid (> 15 g/L) from styrene or L-phenylalanine. Furthermore, we also demonstrated the fermentative production of benzoic acid from glucose. This study highlighted the potential of engineering new pathways for bioproduction of bulk chemicals.