



*The Chinese University of Hong Kong
Department of Chemistry
Research Seminar Series*

Speaker: Prof. Tristan H. Lambert
Department of Chemistry
Columbia University

Title: Aromatic Ions for Catalyst Design

<< Abstract >>

Our group is interested in exploring the use of unique structures in catalysis. A particular focus has been the design of catalyst platforms using aromatic ions such as cyclopropenium cation and cyclopentadienyl anion. With this program, we are seeking to develop broadly applicable paradigms for substrate activation that capitalize on the unique reactivity of these ionic aromatic motifs. This lecture will focus on our development of cyclopropenimines as a highly effective platform for enantioselective Bronsted base catalysis and pentacarboxycyclopentadienes (PCCPs) as a new class of enantioselective Bronsted acid catalysts.

Date: May 9, 2017 (Tuesday)

Time: 2:30 p.m.

Venue: L3, Science Centre



ALL ARE WELCOME

Contact Person:
Prof. Michael F.Y. Kwong



The Chinese University of Hong Kong
Department of Chemistry
Research Seminar Series

Speaker: Prof. Yi Tang
Department of Chemical and Biomolecular Engineering
University of California, Los Angeles

Title: Genomic Based Discovery of Natural Bioactive
Compounds and Powerful Enzymes

<< Abstract >>

Natural products have been an indispensable part of human arsenal towards fighting many diseases, serving as frontline antibiotics, anticancer drugs and cholesterol lowering compounds. Their potent biological activities arise from the complex and diverse chemical structures. Understanding how Nature assembles natural products can not only lead to enhanced understanding of enzyme catalysis, regulation and resistance, but also provide synthetic biology opportunities for engineering new “unnatural” natural products that have enhanced biological activities. My research lab is focused on elucidating the biosynthetic logical of natural products of diverse families, including polyketides, nonribosomal peptides, terpene and alkaloids. In this talk, I will first give an overview and opportunities for this disciplinary field. I will then discuss a few example of biosynthetic pathways that have been studied in our group. I will end the talk by presenting an application in which an engineered biosynthetic enzyme was used in the synthesis of blockbuster drug.

Date: May 17, 2017 (Wednesday)

Time: 2:30 p.m.

Venue: L1, Institute of Chinese Studies



ALL ARE WELCOME

Contact Person:
Prof. Jiang Xia



The Chinese University of Hong Kong
Department of Chemistry
Research Seminar Series

Speaker: Prof. Claude Gros
 Institut de Chimie Moléculaire de
 l'Université de Bourgogne, France

Title: Recent developments in the chemistry of corrole macrocycles

<< Abstract >>

In the last 15 years, corroles have assumed an important role in the porphyrinoid chemistry. Although the first synthesis of corrole dates back to 1965, efficient and suitable synthetic protocols leading to *meso*-substituted corroles became now available, starting a new and exciting era in this field. At the first sight, corroles show a lot of similarities with porphyrins but, their distinctive structural, spectroscopic, photophysical properties, coordination chemistry as well as some peculiar chemical reactivities places these macrocycles in a distinctive position between the members of the porphyrinoid family. We will show that the chemistry of corroles is now mature enough to consider them as an excellent material for chemical sensors. In particular, in the gas phase, the broad selectivity of corroles is strongly dependent on molecular features such as the nature of metal ion complexed into the aromatic macrocycle, or the peripheral substituents. The chemical versatility of corroles plays a fundamental role to fine tune their ability in binding small molecules with different affinity, and their incorporation in technological devices as selective carbon monoxide sensors can be now realized (Figure 1).

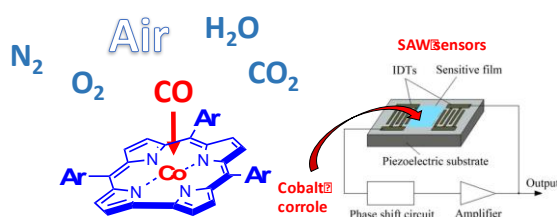


Figure 1: cobalt corrole and CO detection

We will present the main access routes and the spectroscopic and electrochemical characterizations of metal complexes of variously substituted corroles. Examples of recent applications ranging from the development of selective carbon monoxide sensors to the catalysis of reduction of dioxygen in water will illustrate the rich redox properties and coordination chemistry of this family of heterocyclic compounds.

Date: May 23, 2017 (Tuesday)

Time: 10:30 a.m.

Venue: L3, Science Centre



ALL ARE WELCOME

Contact Person:
 Prof. K.S. Chan