



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

Speaker: Prof. Vincent Stuart James Craig
Department of Applied Mathematics
Australian National University

Title: Surface Forces measurements between Titania surfaces – problems for DLVO theory

Date: April 4, 2014 (Friday)

Time: 2:00 p.m.

Venue: Room G03
Y.C. Liang Hall



ALL ARE WELCOME

Contact Person:
Prof. To Ngai



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

- Speaker:** Prof. Chu-Young Kim
National University of Singapore
- Title:** How Nature Synthesizes Echinomycin and Lasalocid
- Date:** April 29, 2014 (Tuesday)
- Time:** 2:30 p.m.
- Venue:** L3, Science Centre

< Abstract >

Natural products have fascinated biologists and chemists alike due to their useful biological activity, complex structure, and fascinating biosynthetic mechanisms. Living organisms typically employ a dozen or more specialized enzymes in the biosynthesis of natural product compounds. While most such enzymes catalyze a reaction that is well-known in the field of organic chemistry, there are some enzymes that carry out surprising chemistry. During echinomycin biosynthesis, for example, the disulfide bond of a precursor molecule is transformed into a thioacetal group by the action of a single enzyme. This thioacetal group is an important structural feature of echinomycin as it confers structural rigidity, chemical stability, and target selectivity. During lasalocid A biosynthesis, a base-catalyzed epoxide opening reaction produces a six-membered cyclic ether moiety, in apparent violation of the Baldwin's Rules of Ring Closure. Using X-ray crystallography we have determined the atomic structure of the enzymes responsible for these unusual chemical transformations. We propose a putative catalytic mechanism for each enzyme based on structural, biochemical, and computational data.

Biography:

Dr. Kim obtained his B.A. degree in chemistry from Cornell University, M.S.E. degree in bioengineering from the University of Pennsylvania, and Ph.D. degree in chemistry from the University of Pennsylvania. He is currently an assistant professor of Chemical Biology in the Department of Biological Sciences at the National University of Singapore. His research interests include deciphering the catalytic mechanism of enzymes involved in natural product biosynthesis and understanding the molecular mechanism of autoimmune disease pathogenesis.