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# The Chinese University of Hong Kong
# Department of Chemistry

## Research Seminar Series

**Speaker:** Professor Lei Shen
School of Chemistry & Chemical Engineering
Huazhong University of Science and Technology
P.R. China

**Title:** The Study of Molecular Weak Interaction between Protein and Surface

**Date:** October 6, 2014 (Monday)

**Time:** 2:30 p.m.

**Venue:** Room G34
Lady Shaw Building

ALL ARE WELCOME

*Contact Person:*
*Prof. To Ngai*

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# The Chinese University of Hong Kong

## *Seminar*

Jointly Organized by

Department of Chemistry
and
School of Life Science

**Speaker:** Prof. Knud J. Jesen
Department of Chemistry
University of Copenhagen
Denmark

**Title:** Ligands to control the nano-scale properties of biopharmaceutical peptides and proteins

**Date:** October 8, 2014 (Wednesday)

**Time:** 2:30 p.m.

**Venue:** Room G06
Y.C. Liang Hall

A L L A RE WE L CO M E

*Contact Person:*
*Prof. Jiang Xia*

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# The Chinese University of Hong Kong
# Department of Chemistry

## Research Seminar Series

**Speaker:** (1) Dr. Akdas-Kilig Huriye
(2) Dr. Jean-Luc Fillaut

Institut des Science Chimiques de Rennes
Universite de Rennes I
France

**Title:** (1) New multifunctional ruthenium complexes for 3D optical data storage

(2) Engineering of Cyclometallated Platinum acetylides for Chemosensing

**Date:** October 14, 2014 (Tuesday)

**Time:** 3:30 p.m.

**Venue:** Room C1
Lady Shaw Building

A L L A RE WE L CO M E

*Contact Person:*
*Prof. Zuowei Xie*

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

**Speaker:** Prof. T. V. (Babu) RajanBabu
Department of Chemistry and Biochemistry
The Ohio State University
U.S.A.

**Title:** New Asymmetric Catalytic Methods in Natural Product Synthesis

**Date:** October 17, 2014 (Friday)

**Time:** 4:30 p.m.

**Venue:** L1
Science Centre

ALL ARE WELCOME

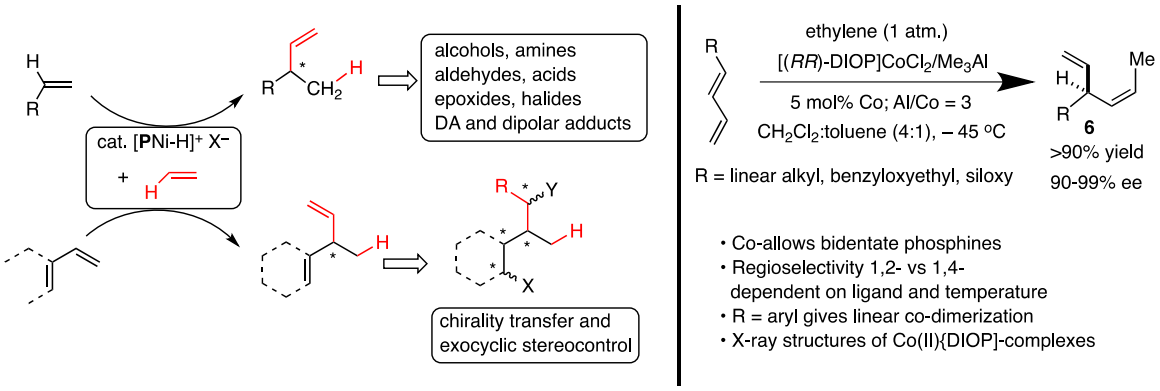
*Contact Person:*
*Prof. Henry Wong*
*Prof. Jason Ho*

**New Asymmetric Catalytic Methods in Natural Product Synthesis**

T. V. (Babu) RajanBabu, Department of Chemistry and Biochemistry, The Ohio State University, Columbus, OHIO 43210, USA

In this era of heightened environmental awareness and ever-increasing demand for higher efficiency from chemical processes, one of the major challenges facing organic synthesis is the utilization of abundantly available carbon sources for fine chemical synthesis. The dual problems of activation of thermodynamically stable precursors and their stereoselective incorporation pose new challenges, solutions of which may have broader implications in homogeneous catalysis, and, at a practical level, how we manufacture chemical intermediates. In this context, we have discovered new Ni[1] and Co-based[2,3] catalytic protocols for a nearly quantitative and highly selective codimerization of ethylene (and propylene), and various functionalized vinylarenes, 1,3-dienes and strained alkenes. This talk will deal with the development of various strategies for stereochemical control in this reaction. These include design and synthesis of new ligands and applications of the 'hemi-labile ligand concept'. The products of this reaction are potentially useful for the synthesis of several classes of compounds, especially with intricately placed methyl-bearing chiral centers. Examples include 2-arylpropionic acids,[4] steroid D-ring derivatives with unnatural side-chains.[5] amphiletanes like pseudopterosins,[6] colombiasin A, elisabethin A, pyrrolidinoindolines[7] with all-carbon quaternary centers, and cyclopenta[G]indoles.[8]

**Asymmetric Hydrovinylation Reactions**




## References

1. A recent review on Asymmetric Hydrovinylation: T. V. RajanBabu *Synlett* **2009**, 853.
2. Sharma, R. K;. RajanBabu, T. V. *J. Am. Chem. Soc.* **2010**, *132*, 3295-3297.
3. Page, J. P.; RajanBabu, T. V. *J. Am. Chem. Soc.* **2012**, *134*, 6556-6559.
4. Smith, C. R.; RajanBabu, T. V. *J. Org. Chem.* **2009**, *74*, 3066-3072.
5. Saha, B.; Smith, C. R.; RajanBabu, T. V. *J. Am. Chem. Soc.* **2008**, *130*, 9000-9005.
6. Mans, D. J.; Cox, G. A.; RajanBabu, T. V. *J. Am. Chem. Soc*. **2011**, *133*, 5776–5779
7. Lim, H. J.; RajanBabu, T. V. *Org. Lett*. **2011**, *13*, 6596-6599.
8. Liu, W.; Lim, H. J.; RajanBabu, T. V.*J. Am. Chem. Soc*. **2012**, *134*, 5496-5499.