NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Physical and Mathematical Sciences
College of Science

CBC SEMINAR ANNOUNCEMENT

Professor Sungho Yoon
Kookmin University

Design Strategy toward Recyclable and Highly Efficient Heterogeneous Catalysts for the Hydrogenation of CO_2 to Formate

One bottleneck in the realization of CO_2 conversion into value-added compounds is the lack of catalysts with both excellent activity and recyclability. Herein, a catalyst is designed for the hydrogenation of CO_2 to formate to boost up these features by considering the leaching pathway of previously reported heterogenized catalyst; the design strategy incorporates oxyanionic ligand(s) in the coordination sphere to provide a pathway for both preventing the deleterious interactions and assisting the heterolysis of H_2. The tailored heterogenized catalyst, [bpy-CTF-Ru(acac)$_2$]Cl, demonstrated excellent recyclability over consecutive runs with a highest turnover frequency of 22 700 h^{-1}, and produced a highest formate concentration of 1.8 M in 3 h. This work is significant in elucidating new principles for the development of industrially viable hydrogenation catalysts.

Date:	**12th February 2019 (Tuesday)**
Time:	**11.00am to 12.30pm**
Venue:	**SPMS Research & Graduate Studies Office Conference Room**
Host:	**Assistant Professor Soo Han Sen**