NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Physical and Mathematical Sciences
College of Science

ORAL DEFENCE ANNOUNCEMENT

TAY WEE SHAN

Developing the Catalytic Asymmetric Hydroarsination Reaction

The asymmetric hydroarsination reaction is arguably the most atom-economical and efficient manner to produce chiral arsines with high enantiopurities. Although various catalysts have been developed for the analogous hydrophosphination reaction, none have been effective for the hydroarsination reaction thus far. Herein, the development of organometallic (Pd- and Ni-based) and organic (phosphine-based) catalytic systems for the hydroarsination reaction is discussed. Mechanistic investigations reveal that arsines were not direct substitutes of phosphines in this instance. Consequently, arsines were applied in several novel applications such as in deuteration, decomplexation and as a directing group. The relevance of these developments to general synthetic chemistry is also outlined.

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Time: 3pm
Supervisor: Prof Leung Pak Hing
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