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## Functionalization of oligomeric ethylene glycol through traceless Wittig olefination

Xu Jin and Chan Kok Ping

Institute of Chemical and Engineering Sciences-Agency for Science, Singapore

Recently, the Wittig reaction involving stabilized phosphorus ylides has been utilized as a bioconjugation strategy featured by its ability to tolerate aqueous media as well as metal free. However, such potentially more useful reaction is pretty much under explored, partially due to its poor atom efficiency and the generation of triphenylphosphine oxide by-product. In our efforts to explore for broader applications of Wittig olefination, we took use of these disadvantages and designed a cyclic phorous ylide template which could be potentially used for development of nonionic surfactant. As it is known, current nonionic surfactants generally have little variations in their hydrophobic and hydrophilic cores mainly due to the synthetic challenges. In this presentation, we demonstrate the synthesis of a stabilized cyclic triphenylphosphonium containing ethylene glycol oligomer as versatile tools for traceless conjugation with aliphatic aldehydes. Such Wittig olefination would naturally incorporate phosphine oxide as part of the olefinic product and avoid its release to the surroundings. The resulting conjunction products are amphiphilic which could be potentially used as nonionic surfactants.

### Biography

Xu Jin has completed her PhD in Chemistry in 2015 from National University of Singapore and is currently working in the interfacial areas of synthetic organic chemistry, polymer chemistry and biologically interesting chemical substances at the Institute of Chemical and Engineering Sciences of A\*Star, Singapore.

[xu\\_jin@ices.a-star.edu.sg](mailto:xu_jin@ices.a-star.edu.sg)

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