

## CBC SEMINAR ANNOUNCEMENT



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**Academia Sinica**

### One-Pot Strategies for Carbohydrate Synthesis

Carbohydrates are involved in numerous vital life processes. They are structurally diverse and complex as compared to other biopolymers (proteins and nucleic acids) and are present in micro-heterogeneous forms in nature. Chemical synthesis of carbohydrates, the practical route to procure pure oligosaccharides, is however hampered by two major hurdles, regioselective protection of polyhydroxyls and rapid assembly of glycosidic linkages involving the stereoselective control of  $\alpha$ - or  $\beta$ -glycosidic bonds. Here, a novel, combinatorial, and highly regioselective method to protect individual hydroxyls of monosaccharide units and install an orthogonal protecting group pattern in a one-pot manner is presented, obviating the necessity to carry out intermittent tedious workups and time-consuming purifications. Hundreds of building blocks starting from D-glucose have been efficiently prepared. Iterative coupling of these building blocks to the assembly of  $\beta$ -1,6-glucans and one-pot synthesis of influenza virus-binding trisaccharide library using a sialyl donor as the starting sugar unit are demonstrated, respectively. Thereby, the combination of one-pot protection strategy and one-pot glycosylation may offer an efficient protocol to solve the long-standing problem in carbohydrate synthesis.

<b>Date:</b>	<b>1<sup>st</sup> October 2012 (Monday)</b>
<b>Time:</b>	<b>11:00am – 12:30pm</b>
<b>Venue:</b>	<b>NTU SPMS CBC Building Level 2, Conference Room</b>
<b>Host:</b>	<b>Assoc Professor Liu Xuwei</b>