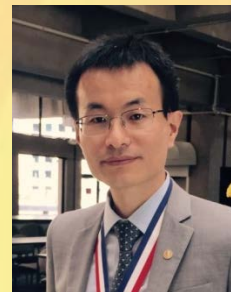


## Systems Materials Engineering Approach for Solar-to-chemical Conversion

*All are Welcome!*

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**Host:** Faculty of Engineering, The Chinese University of Hong Kong

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**Time: 3:45 – 5:00pm**

**Venue: T.Y. Wong Hall, 5/F,  
Ho Sin-Hang Engineering Building,  
The Chinese University of Hong Kong**

### Abstract

Solar-to-chemical (STC) production using a fully integrated system is an attractive goal, but to-date there has yet to be a system that can demonstrate the required efficiency, durability, or be manufactured at a reasonable cost. One can learn a great deal from the natural photosynthesis where the conversion of carbon dioxide and water to carbohydrates is routinely carried out at a highly coordinated system level. There are several key features worth mentioning in these systems: spatial and directional arrangement of the light-harvesting components, charge separation and transport, as well as the desired chemical conversion at catalytic sites in compartmentalized spaces. In order to design an efficient artificial photosynthetic materials system, at the level of the individual components: better catalysts need to be developed, new light-absorbing semiconductor materials will need to be discovered, architectures will need to be designed for effective capture and conversion of sunlight, and more importantly, processes need to be developed for the efficient coupling and integration of the components into a complete artificial photosynthetic system.

### About the Speaker

Peidong Yang received a B.S. in chemistry from University of Science and Technology of China in 1993 and a Ph.D. in chemistry from Harvard University in 1997. He did postdoctoral research at University of California, Santa Barbara before joining the faculty in the department of Chemistry at the University of California, Berkeley in 1999. He is currently professor in the Department of Chemistry, Materials Science and Engineering; and a senior faculty scientist at the Lawrence Berkeley National Laboratory. He is S. K. and Angela Chan Distinguished Chair Professor in Energy. He was elected as MRS Fellow, and a member of American Academy of Arts and Sciences. He is a Honorary Fellow of Chinese Chemical Society, a Fellow of Royal Society of Chemistry (FRSC), and a senior fellow for Canadian Institute for Advanced Research.

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