

## Title **Artificial Photosynthesis Producing Solar Fuels**

Speaker **Prof. Dr. Hideki Hashimoto**  
Professor, Project Leader  
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Date & Time **Friday, October 3, 2014 4:00 p.m.**

Place **I<sup>2</sup>CNER Hall, Ito campus, Kyushu University**

### Abstract

Mankind is facing a major challenge to find new ways of creating clean, renewable fuels. One potentially abundant source of energy is solar radiation. The problem is how to harness such an abundant yet diffuse source of energy. Photosynthesis has evolved mechanisms to achieve this. Any proposed strategies that set out to mimic this process in order to make solar fuels must begin with a light-harvesting or light-concentration step. Photosynthetic antenna complexes are organized on the nano-scale and a major question is how to translate this information into the design of meso- to macro-scale light-harvesting devices. This lecture will outline how photosynthesis achieves ‘Solar to Fuels’ conversion. Recent progress on understating the molecular details of the key reactions in the photosynthetic process has been remarkable. We are now at the stage where it is realistic to start to use this ‘biological blueprint’ to begin to construct devices that have the capability to mimic the key steps in the natural process. This is one of the grand scientific challenges of our time.

### About the Speaker

Prof. Hideki Hashimoto received his Ph.D degree from Kwansai Gakuin University in Japan (1990). He worked as JSPS fellow during 1990-1991 in Kwansai Gakuin University, research associate during 1991-1997 in Osaka City University (Department of Applied Physics), and associate professor during 1997-2002 in Shizuoka University (Department of Materials Engineering). During this last period he has experienced visiting associate professorships both in University of Tokyo (Physics Department) and University of Glasgow, Scotland, UK (Institute for Life Science). He moved to Osaka City University (Department of Physics) as a full professor in 2002. Throughout his academic career he has been focusing on the research of the primary process of photosynthesis. His research interest is now expanding to the regime of artificial photosynthesis. He has received several awards including BBSRC Japan-UK partnering award and SPACC-CSJ award. Since 2010 he has been the project leader of The OCU Advanced Research Institute for Natural Science and Technology (OCARINA).

Host: Associate Professor Ki-Seok Yoon

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