

20150708

## Opening Remarks

On behalf of organizing committees

Hiroshi MASUHARA (NCTU)

Welcome to the 4<sup>th</sup> Summer Course

History

Purpose

FREE  
免費

July 8 - 9, 2015

Room 210, SB II  
Department of Applied Chemistry  
and Institute of Molecular Science  
National Chiao Tung University

## The 4<sup>th</sup> Hsinchu Summer Course

Single Molecule/Nanoparticle Spectroscopy and Imaging

### Lecturers

Prof. Haruo Inoue (Tokyo Metropolitan University, Japan)  
"Artificial photosynthesis"

Prof. Keisuke Goda (University of Tokyo, Japan)  
"Extreme imaging"

Prof. Takeharu Nagai (Osaka University, Japan)  
"Fluorescent bio-probes"

### Local Organizing Committee

Jiun-Tai CHEN, Yen-Ju CHENG, Hsin-Yun HSU, Ian LIAU (Co-Chair), Hiroshi MASUHARA (Co-Chair) (NCTU)

### Organizing Committee

Yu-Chie CHEN, Eric DIAU, Hiro-o HAMAGUCHI, Jeng-Tzong SHEU, Pawel URBAN, Tung-Kung WU (NCTU)

Yun-Wei CHIANG, Jer-Shing HUANG, Kuo-Chu HWANG, Jih-Ru HWU (NTHU)

### Honorary Organizing Committee

Chain-Shu HSU, Yuan-Pern LEE, Yaw-Kuen LI (NCTU)

Contact: Carolin Lee carolin@mail.nctu.edu.tw +886-(0)3-571-2121#56597

Organized by Center for Interdisciplinary Science, NCTU  
NTHU/NCTU Frontier Research Center on Fundamental and Applied Sciences of Matters

Website <http://goo.gl/RgO1Bg>

Lecture. I

*The International Summer Course  
on Single Molecule/Nanoparticle  
Spectroscopy and Imaging*

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*Johan Hofkens*



*Room 210, Science Building II,  
National Chiao Tung University*

*June 25-27, 2012*

Lecture. II

*The International Summer Course  
on Single Molecule/Nanoparticle  
Spectroscopy and Imaging*

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*Naoto Tamai*



*Room 210, Science Building II,  
National Chiao Tung University*

*June 25-27, 2012*

**2012**

2013



2013  
6/25  
|  
6/27

The 2<sup>nd</sup> International Summer Course and Workshop on  
Single Molecule/Nanoparticle  
Spectroscopy and Imaging

● **Summer Course (Days, June 26 - noon, June 27)**  
Fundamentals, spectroscopy, dynamics and modeling of plasmonic nanoparticles  
Prof. Pengfei Yan (yan.pengfei@ustc.edu.cn)

Fundamentals of Raman-scatter spectroscopy at the single molecule/single particle level  
Prof. Chang-Lin Li (li.changlin@ustc.edu.cn)

Fabrication and characterization of metal nanostructures  
Prof. Shoukui Zhou (zhou.shoukui@ustc.edu.cn)

● **Workshop (Afternoon, June 27 - afternoon, June 28)**

● **Poster Session (June 27)**

**Co-chairs:**  
Prof. Shoukui Zhou (zhou.shoukui@ustc.edu.cn)  
Prof. Jan Lee (leejan@ustc.edu.cn)

Website: <http://opt.usc.edu>  
Deadline of registration: Friday, June 14, 2013  
Venue: Room 270, 5th floor, Department of Applied Chemistry,  
National Chiao Tung University  
Contact: Genlin Lee (lee.genlin@ustc.edu.cn) (090713171601617)

Organized by: Center for Interdisciplinary Science, NCTU  
NCTU-USTC Joint Research Center on Nanochemical and Applied Bioscience of Materials

● Summer Course (noon, June 25 - noon, June 27)

**Fundamentals, spectroscopy, dynamics and modeling of plasmonic nanoparticles**



Prof. Stephan Link (Rice University, USA)

**Fundamentals of fluorescence spectroscopy at the single molecule/single particle limit**



Prof. Christy Landes (Rice University, USA)

**Fabrication and characterization of metal nanostructures**

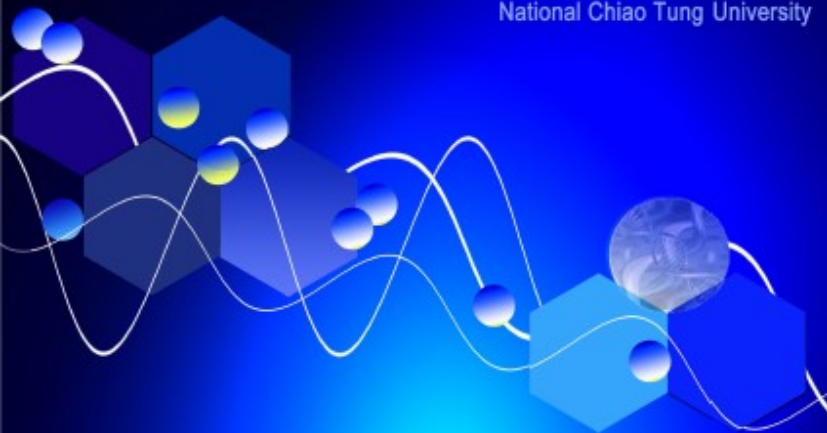


Prof. Hiroaki Misawa (Hokkaido University, Japan)

**2013**

# 2014

Science Building II, Room 210  
Department of Applied Chemistry,  
National Chiao Tung University



## The 3<sup>rd</sup> International Summer Course

Single Molecule/Nanoparticle  
Spectroscopy and Imaging

Lecture I

Prof. Steven De Feyter

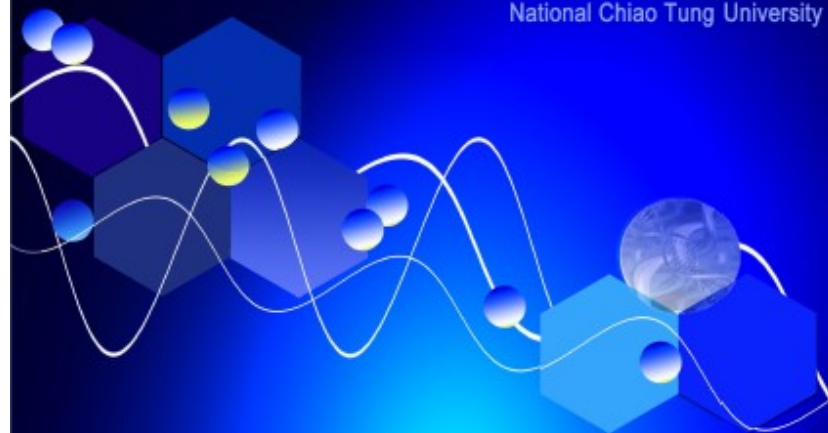
"Nanochemistry on surfaces:  
a scanning probe microscopy approach"

July 7 - 9, 2014

Organized by

Center for Interdisciplinary Science, NCTU  
NHTU/NCTU Frontier Research Center  
on Fundamental and Applied Sciences of Matters

Science Building II, Room 210  
Department of Applied Chemistry,  
National Chiao Tung University



## The 3<sup>rd</sup> International Summer Course

Single Molecule/Nanoparticle  
Spectroscopy and Imaging

Lecture II

Prof. Mizuo Maeda

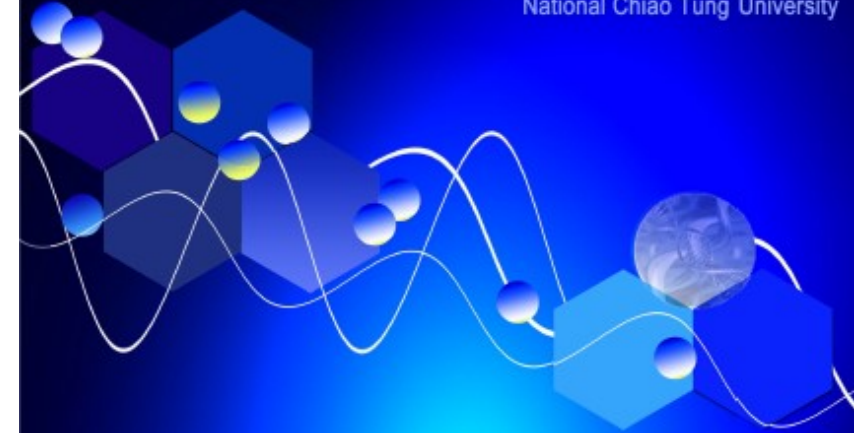
"DNA-Functionalized nanoparticles  
for chemical- and bio-sensing"

July 7 - 9, 2014

Organized by

Center for Interdisciplinary Science, NCTU  
NHTU/NCTU Frontier Research Center  
on Fundamental and Applied Sciences of Matters

Science Building II, Room 210  
Department of Applied Chemistry,  
National Chiao Tung University



## The 3<sup>rd</sup> International Summer Course

Single Molecule/Nanoparticle  
Spectroscopy and Imaging

Lecture III

Prof. Tomoji Kawai

"DNA nanotechnology and  
metal oxide nanotechnology"

July 7 - 9, 2014

Organized by

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免費

Department of Applied Chemistry  
and Institute of Molecular Science  
National Chiao Tung University

# The 4<sup>th</sup> Hsinchu Summer Course

Single Molecule/Nanoparticle Spectroscopy and Imaging

## Lecturers

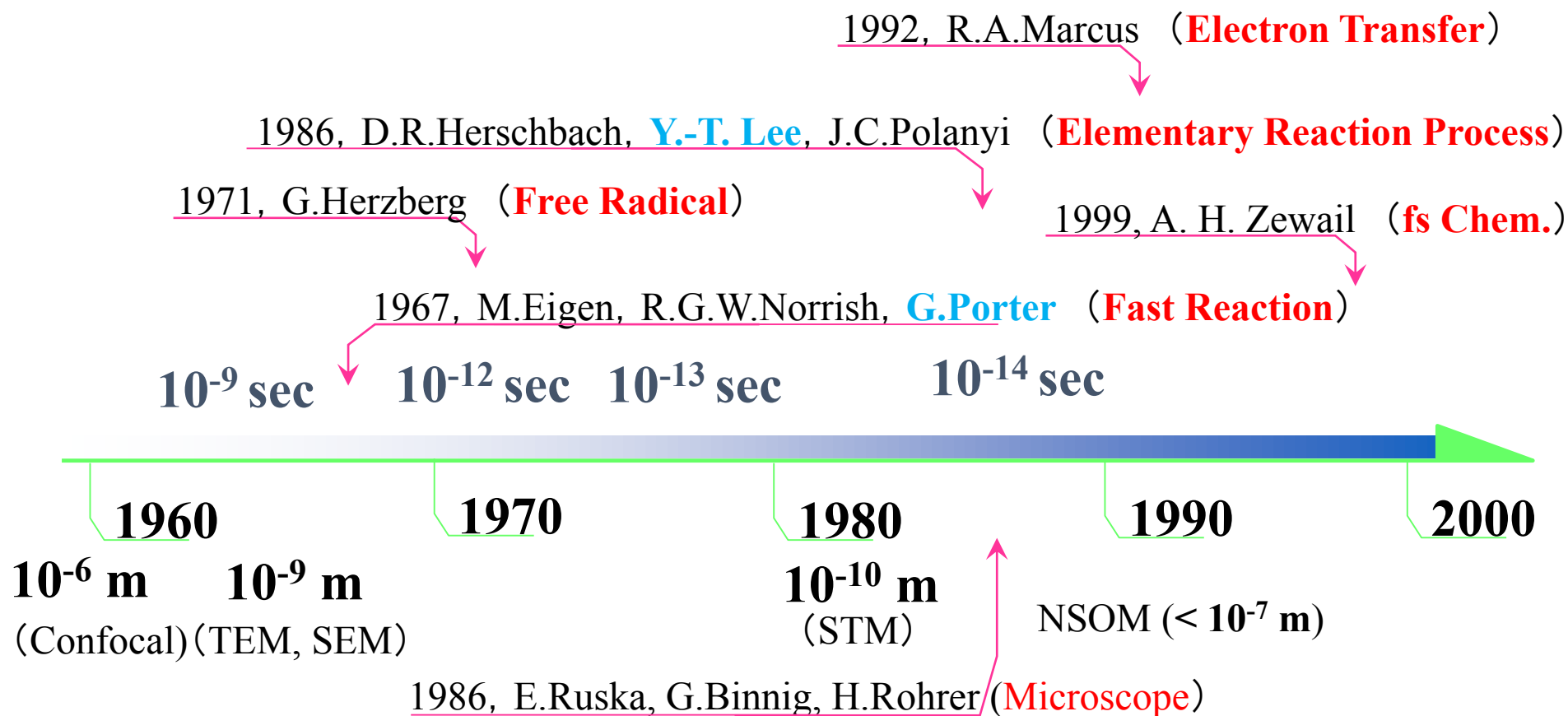
Prof. Haruo Inoue (Tokyo Metropolitan University, Japan)  
"Artificial photosynthesis"

Prof. Keisuke Goda (University of Tokyo, Japan)  
"Extreme imaging"

Prof. Takeharu Nagai (Osaka University, Japan)  
"Fluorescent bio-probes"

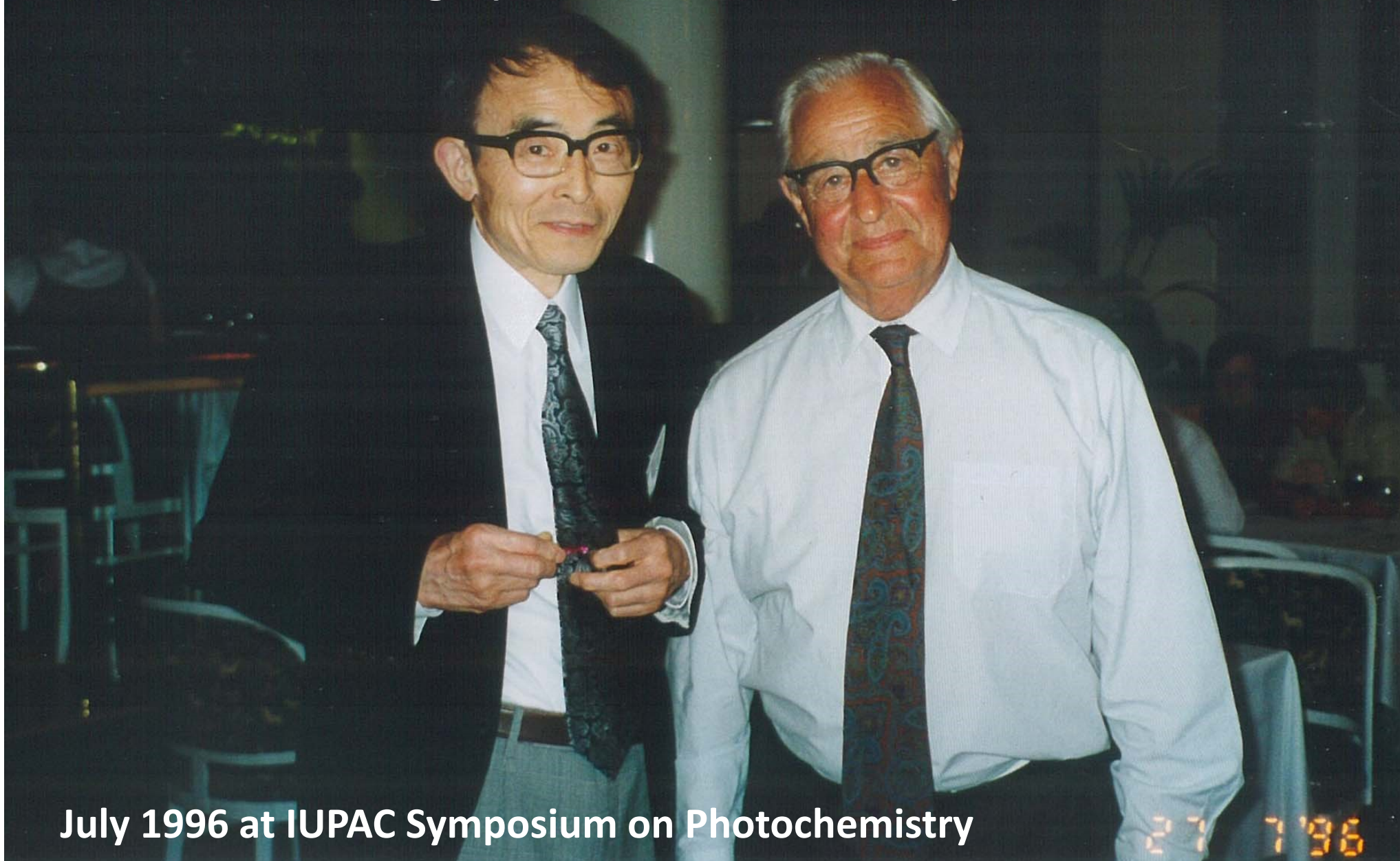
2015

# Nobel Prizes in Chemistry



20<sup>th</sup> Century: Time-resolved Chemistry

**Right; Prof. Sir G. Porter (1967 Nobel Laureate)  
Left; Prof. N. Mataga (1996 Porter Medalist)**



**July 1996 at IUPAC Symposium on Photochemistry**



# The Nobel Prize in Chemistry 2014



Photo: Matt Staley/HHMI

**Eric Betzig**

**Prize share: 1/3**



© Bernd Schuller,  
Max-Planck-Institut

**Stefan W. Hell**

**Prize share: 1/3**



Photo: K. Lowder via  
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**William E. Moerner**

**Prize share: 1/3**

The Nobel Prize in Chemistry 2014 was awarded jointly to Eric Betzig, Stefan W. Hell and William E. Moerner *"for the development of super-resolved fluorescence microscopy"*.

"The Nobel Prize in Chemistry 2014". Nobelprize.org. Nobel Media AB 2014. Web. 3 Dec 2014. <[http://www.nobelprize.org/nobel\\_prizes/chemistry/laureates/2014/](http://www.nobelprize.org/nobel_prizes/chemistry/laureates/2014/)>

**20<sup>th</sup> Century: Time-resolved Chemistry**

**21<sup>st</sup> Century: Space-resolved Chemistry**

**Chemistry under a microscope**

**Single molecule/nanoparticle spectroscopy and imaging**

**Our lecturers are indeed top scientists**

**Prof. Haruo INOUE**

**Prof. Keisuke GODA**

**Prof. Takeharu NAGAI**