

# 七壽

The 77<sup>th</sup> Birthday

## Activity Report

Hiroshi MASUHARA

National Yang Ming Chiao Tung University, Taiwan

July 7, 2021



**Increasing International Visibility of  
National Yang Ming Chiao Tung University**

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## Preface

I was born on March 29, 1944 and turned 77 years old this year. In Japan, 77 years old is called the age of longevity and is a memorable age to celebrate. In the first half of my elementary school life, I was weak due to childhood tuberculosis. I did not attend elementary school for two years. I am amazed that I have been able to live and continue my research until 77.

I have been wanting to write my scientific journey to mark milestone anniversaries and to introduce recent activity at the National Yang Ming Chiao Tung University in Taiwan (which name was changed from National Chiao Tung University in February 2021). Fortunately I was invited to submit Essay and Personal Accounts in *The Chemical Record* and Review in *Annual Review of Physical Chemistry*. I have summarized them as included in this issue. In addition, I wrote my essay “Thirteen Years Life in Taiwan and COVID-19” and copied the report by Professor Yuan-Pern Lee, former Dean of the College of Science, National Chiao Tung University, in the 40th-anniversary issue of the College of Science.

I have been very happy throughout my research life, particularly, I have published more than 100 papers of *The Journal Physical Chemistry* among 600 publications and graduated more than 100 professors and doctors from my group. I would like to express my sincere thanks to National Yang Ming Chiao Tung University for offering me a chance to perform experimental research since 2008. Thanks are also due to my colleagues, researchers, graduate students, secretaries and family for their kind understanding and strong support so far.

July 7, 2021

A handwritten signature in black ink, appearing to read 'H. Masuhara', with a long horizontal flourish extending to the right.

Hiroshi Masuhara



# BIOGRAPHY

Chair Professor, National Yang Ming Chiao Tung University

Professor Emeritus, Osaka University

Foreign Fellow, National Academy of Sciences, India (2010-present)

Doctor Honoris Causa de Ecole Normale Supérieure de Cachan, France (2006-2013)

Foreign Member, Royal Flemish Academy of Belgium for Science and the Arts (1998-present)



**Dr. Hiroshi Masuhara** graduated from Tohoku University (1966) in Sendai and obtained Ph.D. degree from Osaka University (1971). He is a physical chemist working in multidisciplinary areas in departments of chemistry (Tohoku University), synthetic chemistry (Osaka University), polymer science and engineering (Kyoto Institute of Technology), applied physics (Osaka University), frontier bioscience (Osaka University), life science (Hamano Foundation), and materials science (Nara Institute of Science and Technology). In 2008 he joined Department of Applied Chemistry of National Yang Ming Chiao Tung University as Chair Professor. In Laser Bio/Nano Science Laboratory he extended seminal researches on (1) laser trapping dynamics of nanoparticles, (2) laser trapping crystallization of molecules and proteins, and (3) application of femtosecond laser for fabricating individual cell-based devices.

## Links

Masuhara Lab in NYCU

<https://masuhara.nctu.edu.tw/>

Hiroshi Masuhara website

<http://www.masuhara.jp/>

## Publications

About 600 papers in English, 120 Japanese mini-reviews, and 20 writing and editing books.

## Research Articles (2016-2021)

### Optically Evolved Assembling of Polystyrene Particle at Solution Interface

*J. Chin. Chem. Soc.*, Accepted (2021)

*J. Phys. Chem. C*, 124, 27107-27117 (2020)

*J. Phys. Chem. Lett.*, 11, 6057-6062 (2020)

*Langmuir*, 36, 14234-14242 (2020)

*J. Phys. Chem. C*, 120, 15578-15585 (2016)

*Langmuir*, 32, 12488-12496 (2016)

*Nano Lett.*, 16, 3058-3062 (2016)

### Optically Evolved Swarming of Au Nanoparticle at Solution Interface

*J. Phys. Chem. C*, Accepted (2021)

*J. Phys. Chem. C*, 124, 16604-16615 (2020)

*Opt. Express*, 28, 27727-27735 (2020)

*Nano Lett.*, 18, 5846-5853 (2018)

*J. Photochem. Photobiol. A: Chem.*, 346, 177-186 (2017)

### Optically Evolved Assembling of Molecules and proteins

*J. Phys. Chem. C*, Accepted (2021)

*J. Mater. Chem. C*, 9, 7545-7554 (2021)

*Angew. Chem. Int. Ed.*, 59, 7063-7068 (2020)

*Appl. Phys. Express*, 12, 112008 (2019)

*Appl. Phys. Express*, 11, 85502 (2018)

*Cryst. Growth Des.*, 18, 7079-7087 (2018)

*Phys. Chem. Chem. Phys.*, 20, 6034-6039 (2018)

*Angew. Chem. Int. Ed.*, 56, 6739-6743 (2017)

*Langmuir*, 33, 755-763 (2017)

*Langmuir*, 33, 8311-8318 (2017)

*Cryst. Growth Des.*, 16, 1953-960 (2016)

*J. Mater. Chem. C*, 4, 5231-5240 (2016)

### Femtosecond Trapping and Optical Resonance Effect

*ACS Photonics*, 8, 1832-1839 (2021)

*Opt. Express*, 28, 28656-28671 (2020)

*J. Phys. Chem. C*, 123, 27823-27833 (2019)

*J. Phys. Chem. C*, 122, 13233-13242 (2018)

*Opt. Express*, 25, 655-4664 (2017)

*RSC Adv.*, 7, 42606-42613 (2017)

*J. Phys. Chem. C*, 120, 392-2399 (2016)

*J. Phys. Chem. C*, 120, 251-5256 (2016)

### Review, Accounts, and Feature Articles

*Annu. Rev. Phys. Chem.*, 72, 565-589 (2021)  
*Chem. Rec.*, 21, 1473-1488 (2021)  
*Chem. Rec.*, 21, 1261-1269 (2021)  
*J. Photochem. Photobiol. C*, 28, 1-28 (2016)  
*Opt. Rev.*, 22, 143-148 (2015)  
*Chem. Soc. Rev.*, 43, 2147-2158 (2014)  
*Bull. Chem. Soc. Jpn.*, 86, 755-783 (2013)  
*Acc. Chem. Res.*, 45, 1946-1954 (2012)  
*Pure Appl. Chem.*, 83, 869-883 (2011)  
*Chem. Asian J.*, 6, 2878-2889 (2011)  
*Acc. Chem. Res.*, 41, 1790-1798 (2008)  
*Pure Appl. Chem.*, 78, 2205-2226 (2006)  
*J. Phys. Chem. B*, 106, 3049-3060 (2002)  
*J. Photochem. Photobiol. C*, 1, 57-78 (2000)  
*Pure and Appl. Chem.*, 64, 1279-1284 (1992)  
*Accounts Chem. Res.*, 14, 312-318 (1981)

### Awards

2017 The Order of the Sacred Treasure, Gold Rays with Neck Ribbon (瑞宝中綬章)  
2010 Asian Photochemistry Association Award  
2010 Mukai Prize (Tokyo Ohka Foundation)  
2008 Medal with Purple Ribbon (紫綬褒章)  
2006 The Spectroscopic Society of Japan Award  
2006 Porter Medal (European, American & Asian Photochemistry Associations)  
2006 The Chemical Society of Japan Award  
2005 Kenjiro Sakurai Memorial Prize (Optoelectronic Industry and Technology Development Association, Japan)  
1994 Osaka Science Prize  
1994 Divisional Award of Chemical Society of Japan  
1993 Moët Hennessy Louis Vuitton International Prize "Science for Art" Da Vinci of Excellence (France)  
1989 Japanese Photochemical Association

### The List of Professors and Doctors from Masuhara Laboratory and Group

23 Underlined members studied and/or worked in National Yang Ming Chiao Tung University, Taiwan

#### 《Outside Japan》

Wei-Yi Chiang, Rice University, USA

Victor Volkov, Nottingham Trent University, UK

Johan Hofkens, Katholieke Universiteit Leuven (KU Leuven), Belgium

Hiroshi Ujii, KU Leuven, Belgium/Hokkaido University, Japan

Roger Bresoli-Obach, KU Leuven, Belgium

Ursula Pfeifer-Fukumura, RheinMain University, Germany

Rachel Méallet-Renault, Université Paris-Sud Paris-Saclay, France

Michel Sliwa, Université de Lille, France

Takuji Adachi, University of Geneva, Switzerland

Jino George, Indian Institute of Science Education and Research, Mohali, India

Anwar Usman, Universiti Brunei Darussalam, Brunei

Trevor Smith, University of Melbourne, Australia

Yuqiang Jiang, Chinese Academy of Science, China

Koji Hatanaka, Academia Sinica, Taiwan

Teruki Sugiyama, National Yang Ming Chiao Tung University, Taiwan

Shuichi Toyouchi, National Yang Ming Chiao Tung University, Taiwan

Shun-Fa Wang, National Yang Ming Chiao Tung University, Taiwan

Jaihyung Won, Tokyo Electron Korea Ltd., Korea  
Jing-Ru Tu, Taiwan Semiconductor Manufacturing Company Limited, Taiwan  
Chi-Shiun Wu, Standard Foods Corporation, Taiwan  
Pawel Borowicz (UK)  
Christopher F. Porter (UK)  
Klaus Kemnitz (Germany)  
Guillame Louit (France)  
Kalman Pasztor (Hungary)  
Marc Hauer (Switzerland)

《In Japan》

Noboru Kitamura, Hokkaido University  
Yasutaka Matsuo, Hokkaido University  
Hiroaki Misawa, Hokkaido University  
Keiji Sasaki, Hokkaido University  
An-Chie Cheng, Hokkaido University  
Atsushi Miura, Hokkaido University  
Hideki Fujiwara, Hokkai-Gakuen University  
Sanyo Hamai, Akita University  
Jun'ichi Hotta, Yamagata University  
Hiroshi Fukumura, Tohoku University  
Muneaki Hase, University of Tsukuba  
Kiyoharu Nakatani, University of Tsukuba  
Shuichi Hashimoto, National Institute of Technology, Gunma College  
Sho Fujii, National Institute of Technology, Kisarazu College  
Norihiko Hayazawa, RIKEN  
Atsushi Sekiguchi, Kogakuin University  
Mototsugu Suzuki, Metropolitan Police Department  
Yoshito Tanaka, The University of Tokyo  
Yuriko Matsumura, Tokyo Helthcare University  
Tatsuya Uchida, Tokyo University of Pharmacy and Life Sciences  
Takayuki Uwada, Josai University  
Musubu Ichikawa, Shinshu University  
Tetsuhiro Kudo, Toyota Technological Institute  
Nobuyuki Ichinose, Kyoto Institute of Technology  
Noriaki Ikeda, Kyoto Institute of Technology  
Akira Itaya, Kyoto Institute of Technology  
Hiroyuki Sugimura, Kyoto University  
Kazuya Watanabe, Kyoto University  
Hiroshi Furutani, Osaka University

Syoji Ito, Osaka University  
Masayasu Muramatsu, Osaka University  
Hiroshi Y. Yoshikawa, Osaka University  
Chie Hosokawa, Osaka City University  
Yasuyuki Tsuboi, Osaka City University  
Ken-ichi Yuyama, Osaka City University  
Tamitake Itoh, National Institute of Advanced Industrial Science and Technology  
Kenji Kamada, National Institute of Advanced Industrial Science and Technology  
Mitsuru Tsukima, Osaka Electro-Communication University  
Yoichiroh Hosokawa, Nara Institute of Science and Technology  
Ryohei Yasukuni, Nara Institute of Science and Technology  
Kazunori Okano, Nara Institute of Science and Technology  
Takahiro Kaji, National Institute of Information and Communications Technology  
Sadahiro Masuo, Kwansei Gakuin University  
Naoto Tamai, Kwansei Gakuin University  
Tsung-Han Liu, Kwansei Gakuin University  
Morihiko Hamada, Kobe City College of Technology  
Hisashi Fujiwara, Hiroshima City University  
Hiroyuki Yoshikawa, Hiroshima Institute of Technology  
Akihiro Furube, Tokushima University  
Tsuyoshi Asahi, Ehime University  
Hyeon Gu Jeon, Ehime University  
Hideki Matsune, University of Miyazaki  
Yu Nabetani, University of Miyazaki  
Yoshiaki Tamaki, University of the Ryukyus

Norimasa Fukazawa, DIC Corporation  
Seiji Funakura, DIC Corporation  
Tetsuyuki Kurata, Mitsubishi Electric Corporation  
Naonori Kurokawa, The University of Tokyo Edge Capital Partners Co., Ltd.  
Kazuhiko Nakamura, Toyo Seikan Co.,Ltd.  
Takayuki Negishi, Tokuyama Corporation  
Nobuo Shimo, Idemitsu Kosan Co.,Ltd.  
Minoru Toriumi, Hitachi, Ltd.  
Masatoshi Yanagimachi, Mitsui Chemicals, Inc.  
Yugo Hayashi, Sartorius Japan  
Shino Sasaki, 3M Japan  
Issei Aibara, NuFlare Technology Inc.  
Takuji Tada, Fujifilm Corporation  
Hisamasa Sakai, Kyocera Corporation

Yasuyo Maezawa, Sumitomo Dainippon Parma Co., Ltd.

Chie Matsubara, Saraya Co., Ltd.

Isamu Oh, ABsize

Takanori Iino, Sysmex Corporation

Tomoaki Hinoue

Hayato Inoue

Ryo Kihara

Takashi Mito

Tsuyoshi Ohmoto

Atsushi Yamaguchi

Kenji Suzuki (Passed away)







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