

Dr SocMan Ho

Institute of Applied Physics and Materials Engineering

Research assistant professor



CONTACT

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LOCATION

University of Macau
E12-1031, Avenida da Universidade, Taipa, Macau.

RESEARCH INTERESTS

- Synthesis solar fuel
- Solar energy conversion
- Solar cell
- Photoelectrochemical reaction
- Kinetic analysis of charge carrier
- Innovative photovoltaic device

BACKGROUND

I was born in Macau. After graduating from high school, I moved to Tokyo. At Tokyo University of Agriculture and Technology, my major was applied chemistry. In the master course I mainly studied catalytic reactions on platinum group catalysts. I got a scholarship from the Education Ministry of Japan. Having been a Japanese government-financed foreign student for three years, until the Master's course was finished.

Following this, I worked at Konica Minolta. I engaged research and development of medical photographic films. My duty was doing research into photosensitivity dyes/agents and applying patents. While collaborating with Chiba University, I gained a PhD degree in 2007. With regards to my PhD theme I received the Academic Award of The Society of Photographic Science and Technology of Japan in 2008.

A visiting researcher position with Prof. James Durrant group at Imperial College London enabled me to start learning solar energy conversion (October 2010 – December 2011). I investigated photogenerated charge transfer reactions using transient laser spectroscopies. Also I conducted

research in solar driven water splitting by metal oxide semiconductors. Meanwhile, I studied CO₂ reduction by using ruthenium complex catalyst. Since 2012 I have worked with Prof. Junwang Tang and Prof. Ivan Parkin at University College London. My activities involved the fabrication, measurement and analysis of metal oxide photoelectrodes, focused on low-cost TiO₂, BiVO₄, Cu₂O and Fe₂O₃ and the application of solar fuels synthesis. I am interested in the development of new materials/devices for solar energy conversion, and the elucidation of their mechanism. In 2017 I was appointed as a research assistant professor at University of Macau, allowing me to investigate into this field deeply.

REPRESENTATIVE PUBLICATIONS

- Guanjie He, Xiaoyu Han, Rujia Zou, Tingting Zhao, Zhe Weng, SocMan Ho-Kimura, Yao Lu, Hailiang Wang, Zheng Xiao Guo and Ivan Parkin, “A Targeted Functional Design for Highly Efficient and Stable Cathodes for Rechargeable Li-Ion Batteries”, *Adv. Funct. Mater.* 2017, 27, 1604903–1604911. (Impact Factor 12.12, citations: 4)
- SocMan Ho-Kimura, Savio J. A. Moniz, Junwang Tang and Ivan P. Parkin. A Method for Synthesis of Renewable Cu₂O Junction Composite Electrodes and Their Photoelectrochemical Properties. *ACS Sus. Chem. Eng.* 2015, 3, 710–717. (Impact Factor 5.951, citations: 16)
- SocMan Ho-Kimura, Savio J. A. Moniz, Albertus D. Handoko and Junwang Tang. Enhanced photoelectrochemical water splitting by nanostructured BiVO₄-TiO₂ composite electrodes. *J. Mater. Chem. A* 2014, 2, 3948–3953. (Impact Factor 8.867, citations: 76)
- SocMan Ho Kimura, Tetsuya Suzuki, Tsuyoshi Mitsuhashi, Ken-ichi Kuge and Akira Hasegawa. The Latent Image Formation Process of Silver Salt Photothermographic Materials: Photoconductivity Decay Kinetics in Silver Halide Crystals with Silver Carboxylate. *J. Imaging Sci. Technol.* 2007, 51(6), 540–546.
- Tatsuya Hirose, Soc Man Ho Kimura, Weather-resistant article, weather-resistant film and optical member, US 20110165394 A1
- Soc Man Ho Kimura, Hideki Takiguchi, Silver salt photothermographic dry imaging material and image recording method as well as image forming method using the same, EP1345075A2

Google scholar: <https://scholar.google.com/citations?user=L74G3mYAAAAJ&hl=en>

EDUCATION AND QUALIFICATION

2014 Jan - 2016 Oct *Visiting researcher*

University College London, Department of Chemistry

(Prof Ivan Parkin)

2012 Jan-Dec *Visiting researcher*

University College London, Department of Chemical Engineering

(Prof Junwang Tang)

2010 Oct-2011 Dec *Visiting researcher*

Imperial College London, Department of Chemistry

(Prof James Durrant)

2004-2007 *PhD in science and technology*

Chiba University (Chiba, Japan), Faculty of Materials for Imaging Science

WORK EXPERIENCE

2017 Aug-present *Research Assistant Professor*

Institute of Applied Physics and Materials Engineering (IAPME)

University of Macau

2017 May-July *Visiting Assistant Professor*

Institute of Applied Physics and Materials Engineering (IAPME)

University of Macau

-2009 *Research associate; Assistant manager*

R&D centre of Konica Minolta Holdings, Inc. (Tokyo, Japan)

PRIZES, AWARDS AND OTHER HONOURS

- Winner of The Academic Award of The Society of Photographic Science and Technology of Japan in 2008
- Winner of the scholarship from the Education Ministry of Japan. Having been a Japanese government-financed foreign student for three years, until the Master's course was finished