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## CURRENT POSITION

**University of Hawaii, Hawaii Natural Energy Institute**  
Postdoctoral Fellow

Honolulu, HI, USA  
2018-present

## EDUCATION

### Osaka University

#### PhD. Materials Engineering Science

Dissertation: Studies on Electrochemical Syntheses of Semiconductor Thin Films for Photovoltaic Applications; Advisor: Prof. Michio Matsumura and Prof. Shigeru Ikeda

Osaka, Japan  
2013

#### MEng., Materials Engineering Science

Thesis: Electrochemical Deposition of Cuprous Oxide Layers and Their Solar Cell Properties; Advisor: Prof. Michio Matsumura and Prof. Shigeru Ikeda

Osaka, Japan  
2010

### Bandung Institute of Technology

#### B.Eng., Engineering Physics

Project: Dye-sensitized Solar Cell; Advisor: Dr. Nugraha and Dr. Brian Yulianto

Bandung, Indonesia  
2007

## RESEARCH INTERESTS

Photovoltaic and Solar Energy Conversion  
Semiconductors

Thin Film Solar Cells  
Thin Film Deposition

Solar Fuel  
Photoelectrochemical Water Splitting

## WORKING EXPERIENCE

**University of Hawaii, Hawaii Natural Energy Institute**  
Postdoctoral Fellow; Supervisor: Dr. Nicolas Gaillard

Honolulu, HI, USA  
2018-present

**Nanyang Technological University, School of Materials Sciences and Engineering / Energy Research Institute**

Research Fellow; Supervisor: Prof. Lydia H. Wong

Singapore  
2017-2018

### University of Zurich, URPP LightChEC

Postdoctoral Fellow; Supervisor: Prof. David Tilley

Zurich, Switzerland  
2015-2017

### Osaka University, Research Center for Solar Energy Chemistry

Postdoctoral Researcher; Supervisor: Prof. Shigeru Ikeda

Osaka, Japan  
2013-2015

## BOOK CHAPTER

**W. Septina**, J. Barber, L. H. Wong, Material Design for Artificial Photosynthesis using Photoelectrodes for Hydrogen Production, in: J. Barber, A.V. Ruban, P. Nixon (Eds.), Oxygen Production and Reduction in Artificial and Natural Systems, Ch. 14, World Scientific, Singapore, 2019, <https://doi.org/10.1142/11173>.

## PEER-REVIEWED PUBLICATIONS

**W. Septina**, S. D. Tilley, Emerging Earth-Abundant Materials for Scalable Solar Water Splitting, *Current Opinion in Electrochemistry* 2 (2017) 120.

F. Wang, **W. Septina**, A. Chemseddine, F. F. Abdi, D. Friedrich, P. Bogdanoff, R. van de Krol, S. D. Tilley, S. P. Berglund, Gradient self-doped CuBi<sub>2</sub>O<sub>4</sub> with highly improved charge separation efficiency, *Journal of The American Chemical Society* 139 (2017) 15094.

R. Prabhakar, **W. Septina**, S. Siol, T. Moehl, R. Wick, S. D. Tilley, Photocorrosion-Resistant Sb<sub>2</sub>Se<sub>3</sub> Photocathodes with Earth Abundant MoS<sub>x</sub> Hydrogen Evolution Catalyst, *Journal of Materials Chemistry A* 5 (2017) 23139.

- W. Septina**, R. Prabhakar, Rene Wick, Thomas Moehl, S. D. Tilley, Stabilized Solar Hydrogen Production with CuO/CdS Heterojunction Thin Film Photocathodes, *Chemistry of Materials* 29 (2017) 1735.
- W. Septina**, M. Sugimoto, D. Chao, Q. Shen, S. Nakatsuka, Y. Nose, T. Harada, S. Ikeda Photoelectrochemical water reduction over wide gap (Ag,Cu)(In,Ga)S<sub>2</sub> thin film photocathodes, *Physical Chemistry Chemical Physics* 19 (2017) 12502.
- Gunawan, A. Haris, H. Widiyandari, **W. Septina**, S. Ikeda, Investigation on Stability of Electroplated-Sulfurized CuInS<sub>2</sub>-based Photocathode Modified with an In<sub>2</sub>S<sub>3</sub> Layer for H<sub>2</sub> Evolution under Various pH Conditions, *Oriental Journal of Chemistry* (2017) 33(2).
- H. K. Adli, T. Harada, **W. Septina**, S. Hozan, S. Ito, S. Ikeda, Effects of Porosity and Amounts of Surface Hydroxyl Groups of a Porous TiO<sub>2</sub> Layer on the Performance of a CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Photovoltaic Cell, *Journal of Physical Chemistry C* 119 (2015) 22304.
- Gunawan, **W. Septina**, T. Harada, Y. Nose, S. Ikeda, Investigation of the Electric Structures of Heterointerfaces in Pt- and In<sub>2</sub>S<sub>3</sub>-Modified CuInS<sub>2</sub> Photocathodes Used for Sunlight-Induced Hydrogen Evolution, *ACS Applied Materials & Interfaces* 7 (2015) 16086
- W. Septina**, M. Kurihara, S. Ikeda, Y. Nakajima, T. Hirano, Y. Kawasaki, T. Harada, M. Matsumura, Cu(In,Ga)(S,Se)<sub>2</sub> thin film solar cell with 10.7 % conversion efficiency obtained by selenization of the Na-doped spray-pyrolyzed sulfide precursor film, *ACS Applied Materials & Interfaces* 7 (2015) 6472.
- W. Septina**, Gunawan, S. Ikeda, T. Harada, M. Matsumura, Photosplitting of water from wide-gap Cu(In,Ga)S<sub>2</sub> thin films modified with CdS layer and Pt nanoparticles for a high-onset potential photocathode, *Journal of Physical Chemistry C* 119 (2015) 8576.
- M. Kurihara, **W. Septina**, S. Ikeda, T. Hirano, Y. Nakajima, Y. Kawasaki, T. Harada, M. Matsumura, Fabrication of Cu(In,Ga)(S,Se)<sub>2</sub> Thin Film Solar Cells via Spray Pyrolysis of Thiourea and N-Methylthiourea-based Aqueous Precursor Solution, *Japanese Journal of Applied Physics* 54 (2015) 091203.
- T. H. Nguyen, **W. Septina**, S. Fujikawa, F. Jiang, T. Harada, S. Ikeda, Cu<sub>2</sub>ZnSnS<sub>4</sub> Thin Film Solar Cells with 5.8 % of Conversion Efficiency Obtained by a Facile Spray Pyrolysis Technique, *RSC Advances* 5 (2015) 77565.
- F. Jiang, S. Ikeda, Z. G. Tang, T. Minemoto, **W. Septina**, T. Harada, M. Matsumura, Impact of alloying duration of an electrodeposited Cu/Sn/Zn metallic stack on properties of Cu<sub>2</sub>ZnSnS<sub>4</sub> absorbers for thin-film solar cells, *Progress in Photovoltaics: Research and Applications*, 23 (2015) 1884.
- W. Septina**, S. Ikeda, Y. Iga, T. Harada, M. Matsumura, Thin film solar cell based on CuSbS<sub>2</sub> absorber fabricated from an electrochemically deposited metal stack, *Thin Solid Films* 550 (2014) 700.
- S. Ikeda, S. Sogawa, Y. Tokai, **W. Septina**, T. Harada, M. Matsumura, Selective production of CuSbS<sub>2</sub>, Cu<sub>3</sub>SbS<sub>3</sub>, and Cu<sub>3</sub>SbS<sub>4</sub> nanoparticles using a hot injection protocol, *RSC Advances* 4 (2014) 40969.
- Gunawan, **W. Septina**, S. Ikeda, T. Harada, T. Minegishi, K. Domen, M. Matsumura, Platinum and indium sulfide-modified CuInS<sub>2</sub> as efficient photocathodes for photoelectrochemical water splitting, *Chemical Communications* 50 (2014) 8941.
- S. Ikeda, M. Nonogaki, **W. Septina**, G. Gunawan, T. Harada, W. Septina, Photoelectrochemical characterizations of CuInS<sub>2</sub> and Cu(In,Ga)S<sub>2</sub> thin films fabricated by a spray pyrolysis method, *Advanced Materials Research* 894 (2014) 427.
- Y. Lin, S. Ikeda, **W. Septina**, T. Harada, M. Matsumura, Mechanistic aspect of preheating effects of electrodeposited metallic precursors on structural and photovoltaic properties of Cu<sub>2</sub>ZnSnS<sub>4</sub> thin films, *Solar Energy Materials & Solar Cells* 120 (2014) 218.
- W. Septina**, S. Ikeda, T. Harada, M. Matsumura, Fabrication of Cu<sub>2</sub>ZnSnSe<sub>4</sub> thin films from an electrodeposited Cu–Zn–Sn–Se/Cu–Sn–Se bilayer, *physica status solidi (c)* 10 (2013) 1062.
- S. Ikeda, M. Nonogaki, **W. Septina**, G. Gunawan, T. Harada, M. Matsumura, Fabrication of CuInS<sub>2</sub> and Cu(In,Ga)S<sub>2</sub> thin films by a facile spray pyrolysis and their photovoltaic and photoelectrochemical properties, *Catalysis Science & Technology* 3 (2013) 1849.
- W. Septina**, S. Ikeda, A. Kyoraiseiki, T. Harada, M. Matsumura, Single-step electrodeposition of a microcrystalline Cu<sub>2</sub>ZnSnSe<sub>4</sub> thin film with a kesterite structure, *Electrochimica Acta* 88 (2013) 436.
- M. A. Khan, **W. Septina**, S. Ikeda, M. Matsumura, An inorganic/organic hybrid solar cell consisting of Cu<sub>2</sub>O and a fullerene derivative, *Thin Solid Films* 526 (2012) 191.
- S. M. Lee, S. Ikeda, Y. Otsuka, **W. Septina**, T. Harada, M. Matsumura, Homogeneous electrochemical deposition of In on a Cu-covered Mo substrate for fabrication of efficient solar cells with a CuInS<sub>2</sub> photoabsorber, *Electrochimica Acta* 79 (2012) 189.
- W. Septina**, S. Ikeda, M. Alam Khan, T. Harada, M. Matsumura, L. M. Peter, Potentiostatic electrodeposition of cuprous oxide thin films for photovoltaic applications, *Electrochimica Acta* 56 (2011) 4882.
- B. Yulianto, **W. Septina**, K. Fuadi, F. Fanani, L. Muliani, Nugraha, Synthesis of nanoporous TiO<sub>2</sub> and its potential applicability for dye-sensitized solar cell using antocyanine black rice, *Advances in Materials Science and Engineering* 2010 (2010).