

## **KAMARUZZAMAN BIN SOPIAN**

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### **EDUCATIONAL & PROFESSIONAL BACKGROUND**

- BSc Mechanical Engineering University of Wisconsin-Madison, USA 1985
- MSc Energy Resources, Energy Resource Program, University of Pittsburgh, USA 1989
- PhD Mechanical Engineering- Dorgan Solar Laboratory University of Miami – Coral Gables, USA 1997
- FASc Academy of Sciences Malaysia 2013

### **AREA OF EXPERTISE**

Advanced solar photovoltaic systems (grid-connected photovoltaic, solar powered regenerative fuel cell, solar hydrogen production, thin film silicon solar cell) and advanced solar thermal systems (solar cooling, solar heat pump, solar assisted drying, combined photovoltaic thermal or hybrid collector).

### **COURSES TAUGHT**

- Undergraduate – Heat Transfer, Thermodynamics and Fluid Mechanics, Thermal System Design
- Postgraduate – Design of Renewable Energy Systems, Solar Thermal Engineering, Energy Management

### **RESEARCH & CONSULTATION ACTIVITIES**

1. Photovoltaic Thermal (PVT) Solar Collectors
2. Non-toxic silicon bifacial and back contact silicon solar cell
3. Renewable Energy Micropower optimization
4. Solar Assisted Heat Pump, Drying, Dehumidification and Cooling Systems
5. Standalone, Grid Connected and Hybrid Systems Optimization
6. UNIDO – Solar Dryers for Agricultural and Marine Products – Cambodia
7. ASEAN-EU – Building Integrated Photovoltaic Potential Studies in Malaysia.
8. UNIDO-GEF – Large Scale Solar Thermal Applications in Malaysia
9. TECHNOfUND- Moving up the value chain in the silicon solar industry
10. UNESCO/ISESCO – Program Manager and Expert Trainer, Asian School on Renewable Energy (2007 – 2017)

**SELECTED PUBLICATIONS (600 publications in journal and conferences, SCOPUS h index =54, citations = 10,300, AUTHORID=7003375391)**

1. Ali. F. Muftah, K. Sopian, M. A. Alghoul, 2018, Performance of basin type stepped solar still enhanced with superior design concepts, *Desalination*, 43,198-209
2. Ali H. A. Al-Waeli, K. Sopian, Hussein A Kazem, Miqdam T Chaichan, 2018. Nanofluid based grid connected PV/T systems in Malaysia: A techno-economical assessment *Sustainable Energy Technologies and Assessments*, 28: 81-95
3. Ali H.A. Al-Waeli, K. Sopian, Hussein A. Kazem, Miqdam T. Chaichan, 2017, Photovoltaic /Thermal (PV/T) systems: Status and future prospects, *Renewable and Sustainable Energy Reviews*, 77, 109-130.
4. K Sopian, SL Cheow, SH Zaid, 2017 An overview of crystalline silicon solar cell technology: Past, present, and future, *AIP Conference Proceedings*, 1877, 02000.
5. Ali H.A. Al-Waeli, K. Sopian, Miqdam T. Chaichan, Hussein A. Kazem, Mohd Hafidz Ruslan, 2017, Evaluation of the nanofluid and nano-PCM based photovoltaic thermal (PVT) system: An experimental study, *Energy Conversion and Management*, 151, 1 693-708.
6. Poorya Ooshaksaraei, Kamaruzzaman Sopian, Saleem H. Zaidi, Rozli Zulkifli, 2017. Performance of four air-based photovoltaic thermal collectors configurations with bifacial solar cells, *Renewable Energy*, 102, 279-293
7. M. Yahya, Ahmad Fudholi, Hadyan Hafizh, Kamaruzzaman Sopian, 2016, Comparison of solar dryer and solar-assisted heat pump dryer for cassava, *Solar Energy*, 136, 606-613
8. S. Misha, S. Mat, M.H. Ruslan, E. Salleh, K. Sopian, 2016. Performance of a solar-assisted solid desiccant dryer for oil palm fronds drying, *Solar Energy*, 132, 415-429
9. P Poovanaesvaran, MA Alghoul, Assim Fadhil, MM Abdul-Majeed, Nilofar Assim, Kamaruzzaman Sopian, 2014, Techno-economic evaluation of a small-scale PV-BWRO system at different latitudes, *Desalination and Water Treatment*, 52: 37-39, 7082-7091
10. Ahmad Fudholi, Kamaruzzaman Sopian, M.A. Alghoul, Mohd Hafidz Ruslan, Mohd Yusof Othman, 2015 Performances and improvement potential of solar drying system for palm oil fronds, *Renewable Energy*, 78, 561-565
11. Ahmad Fudholi, Kamaruzzaman Sopian, Mohd Yusof Othman, Mohd Hafidz Ruslan, 2014, Energy and exergy analyses of solar drying system of red seaweeds, *Energy and Buildings*, 68, 121-129

**INTERNATIONAL AWARDS AND RECOGNITIONS**

1. Prix de L 'Environnement, (High Performance Solar Assisted Drying Systems for Agricultural Produce). The Swiss Society for Environmental Protection, 2001, Geneva.
2. Special Award, (Advanced Hybrid Solar Collector)Taiwan Invention Association, Seoul International Invention Fair, 2004
3. Special Prize, Korea Invention Promotion Association, (Advanced Assisted Solar Heat Pump Dryer with Multifunctional Solar Collector) INPEX 2008, Pittsburgh.
4. World Renewable Energy Network Pioneer Award, Denver, 2012.
5. Islamic Development Bank, S&T Prize, 2013.
6. ASEAN Energy Award 2013, Large Scale Solar Hot Water Heating System PPUKM
7. ASEAN Energy Award 2014, Solar Tracking of PV for Telecommunication Tower
8. World Green Technology Grand Award 2015 in South Korea during the World Scientist Award organised by the Korean Invention News.
9. Special Award for Community Engagement and Renewable Energy during the World Renewable Congress (WREC) XVII at Bahrain on 3 ~ 7 December 2016
10. Gold Medal, Hybrid Solar Power Thermal System, 10<sup>th</sup> EUROINVENT - European Exhibition of Creativity and Innovation Lasi, Romania, May 15-17, 2017