KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

STANDARDS MALAYSIA

SEMINAR ON MALAYSIAN STANDARDS:
RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYSTEM FOR RURAL ELECTRIFICATION

18 JULY 2018 (WEDNESDAY)
CONCORDE HOTEL, SHAH ALAM, SELANGOR

INTRODUCTION

Department of Standards Malaysia (Standards Malaysia) has pooled experts and published various series of Malaysian Standards (MS) for photovoltaics (PV). The MS referred in this workshop are developed by the Working Group on Solar Photovoltaic Systems WG/E/8-1 which has been established within the Malaysian Standards Development Systems, under the purview of Standards Malaysia, a government agency under the Ministry of Science, Technology and Innovation (MOSTI).

Solar photovoltaics (PV) is one of the renewable energy (RE) technologies that offers a fast option for deployment, and it is the easiest to use in remote areas. Today, there are thousands of stand-alone photovoltaic (SAPV) systems installed in Malaysia, ranging from a few hundred watts to thousands of watts of power capacities. These installations are part of a rural electrification programme of the Government of Malaysia. With these huge numbers, there has to exist certain standards relating to the design, installation, operation, maintenance and safety of all parties.

OUR OBJECTIVES

- To update participants on the latest development on MS related to rural electrification.
- To provide knowledge about the needs towards using the MS in rural electrification.
- To apply MS in real application of rural electrification.

WHO SHOULD ATTEND

- Project Engineers / Contracting Engineers
- Facilities Engineers / Design Engineers
- Technicians / Installers /Wireman / Chargeman
- Qualified Person
- Project Managers
- Government Agencies / Bodies
- Academia
- Contractors / Service Providers

- **Ir. Akmal Rahimi Abu Samah**
- **Assoc. Prof. Dr. Sulaiman Shaari**
- **Dr. Shahril Irwan Sulaiman**
- **Dr. Nor Zaini Ikrom Zakaria**
- **Assoc. Prof. Dr. Ahmad Maliki Omar**

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PROGRAMME

Time	Subject
8.30 am	**Registration**
9.00 am	**Opening Remarks** By: **YBhg. Datuk Fadilah Baharin** Director General Department of Standards Malaysia
9.10 am	**Paper 1: OVERVIEW OF THE SOLAR PV INDUSTRY IN MALAYSIA** By: **Ir. Akmal Rahimi Abu Samah** • Chairman, Technical Committee on Renewable Energies • Chief Operating Officer, Sustainable Energy Development, Authority (SEDA) Malaysia
10.00 am	**Refreshment**
10.20 am	**Paper 2: MS 62257-1 OVERVIEW OF MALAYSIAN STANDARD RELATED TO GRID-CONNECTED PHOTO-VOLTAIC SYSTEMS** By: **Assoc. Prof. Dr. Sulaiman Shaari** • Chairman, Working Group on Solar Photovoltaic Systems • Universiti Teknologi MARA (UiTM) Shah Alam
10.50 am	**Paper 3: MS 62257-2 RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION - PART 2: FROM REQUIREMENTS TO A RANGE OF ELECTRIFICATION SYSTEMS** By: **Assoc. Prof. Dr. Ahmad Maliki Omar** • Deputy Chairman, Working Group on Solar Photovoltaic Systems • Universiti Teknologi MARA (UiTM) Shah Alam
11.45 am	**Paper 4: MS 62257-5 RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION - PART 5: PROTECTION AGAINST ELECTRICAL HAZARDS** By: **Assoc. Prof. Dr. Ahmad Maliki Omar** • Deputy Chairman, Working Group on Solar Photovoltaic Systems • Universiti Teknologi MARA (UiTM) Shah Alam
12.45 pm	**Lunch**
2.00 pm	**Paper 5: MS 62257-6 RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION - PART 6: ACCEPTANCE, OPERATION, MAINTENANCE AND REPLACE-MENT** By: **Dr. Nor Zaini Ikrom Zakaria** • Alternate Member, Technical Committee on Energy Efficiency of Building • Universiti Teknologi MARA (UiTM) Shah Alam
2.30 pm	**Paper 6: MS 62257-9-1 RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYS-TEMS FOR RURAL ELECTRIFICATION - PART 9-1: MICROPOWER SYSTEMS** By: **Dr. Nor Zaini Ikrom Zakaria** • Alternate Member, Technical Committee on Energy Efficiency of Building • Universiti Teknologi MARA (UiTM) Shah Alam
3.15 pm	**Paper 7: MS 62257-7-1 RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYS-TEMS FOR RURAL ELECTRIFICATION - PART 7-1: GENERATORS - PHOTOVOLTAIC ARRAYS** By: **Dr. Shahril Irwan Sulaiman** • Alternate Member, Working Group on Solar Photovoltaic Systems • Universiti Teknologi MARA (UiTM) Shah Alam
4.00 pm	**Paper 8: MS 61724 PHOTOVOLTAIC SYSTEM PERFORMANCE MONITORING - GUIDELINES FOR MEAS-UREMENT, DATA EXCHANGE AND ANALYSIS** By: **Dr. Shahril Irwan Sulaiman** • Alternate Member, Working Group on Solar Photovoltaic Systems • Universiti Teknologi MARA (UiTM) Shah Alam
4.30 pm	**Closing Remarks** By: **Assoc. Prof. Dr. Sulaiman Shaari**
4.45 pm	**Refreshment and adjourn**

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SPEAKER PROFILE

Ir. Akmal Rahimi Abu Samah Bachelor Degree in Electrical and Electronic Engineering from University of Bristol, UK. First career in Tenaga Nasional Berhad (TNB), during his stint in TNB, he has held several positions such as Engineering Manager and Project Manager where he was deeply involved in business development, design & engineering, construction as well as project management. Ir. Akmal is a Professional Engineer with Practicing Certificate registered with the Board of Engineers, Malaysia (BEM). He is also a Corporate Member of the Institution of Engineers, Malaysia (IEM) and the American Society for Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE). Ir. Akmal holds a Competent Electrical Engineer certificate from the Energy Commission (EC), Malaysia. He is also an Industry Advisor Panel member for a couple of public universities in the country.

Sulaiman Shaari, Ph.D. (De Montfort, U.K.), M.S. (Missouri, U.S.A), and B.S. (Kansas State, U.S.A.) is a leading expert on photovoltaic (PV) systems in Malaysia. He has many years' experience in PV and has given services to the government and industry in research, consultancy and expert advice in various forms. He has vast experience in capacity building and has trained designers, practitioners and trainers, as well as delivered addresses at national and international events. He is the Malaysian representative at: the International Electro-technical Commission; and the International Energy Agency, Photovoltaic Power Systems Task 11; Task 13. He is also the Chief Master Trainer and Examiner for the SEDA competency programme; Chairman of the PV working Group for MS development; and Vice-President II of the Malaysian Photovoltaic Industry Association. He now teaches at Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia as an Associate Professor. Email: solarman1001@gmail.com

Shahril Irwan Sulaiman holds a PhD in Electrical Engineering from Universiti Teknologi MARA, Malaysia. He obtained his M.EngSc in Photovoltaic Engineering from University of New South Wales, Australia and B.Eng in Electrical & Electronics from Universiti Tenaga Nasional, Malaysia. He is currently a senior lecturer in Faculty of Electrical Engineering, Universiti Teknologi MARA, Malaysia. Besides conducting numerous contract-based research, he has been assisting the national photovoltaic industry and the government for more than a decade. His active contributions have been recognized when he is appointed as one of the Master Trainers by Sustainable Energy Development Authority (SEDA) Malaysia to conduct competency-based trainings related to design, installation, testing & commissioning, operation and maintenance of both grid-connected photovoltaic systems and stand-alone photovoltaic systems. He is also a member of Standards Working Group (SWG) on photovoltaic systems and has been prominently involved in assisting the government sectors to prepare various policies and guidelines related to photovoltaic systems in Malaysia. Email: shahril_irwan2004@yahoo.com

Nor Zaini Zakaria holds a Ph.D. Energy in Buildings (Univ. Malaya), M.Sc. Physics (Missouri, U.S.A) and B.Sc. Physics (S. Carolina, U.S.A). She is currently a Master Trainer and Examiner for SEDA Malaysia PV competency courses. With the experiences in building science and photovoltaic (PV) systems, she has contributed to the government, academic institution, and industry in research and consultancy. She is a WG member on Architecture and Passive Design Strategy, and Alternate TC member on Energy Efficiency in Building. As an academia she is actively doing research, publishing technical papers and presenting at national and international conferences. She now teaches at Universiti Teknologi MARA, Shah Alam, Malaysia as senior lecturer. Email:

Ahmad Maliki Omar, PhD (University of Malaya), MSc (Loughborough University of Technology, UK), BEng (Hons) (University of Malaya) is currently an Associate Professor at Faculty of Electrical Engineering, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia. He is active in teaching, training, consultancy and research in solar photovoltaic power system, power electronics and dedicated controller. He is the Malaysian representative at IEA-PVPS Task 11. He is also the Master Trainer and Examiner for the SEDA competency programme; Deputy Chairman of the PV working Group for MS development. Email: maliki_omar@salam.uitm.edu.my

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PURCHASE OF MALAYSIAN STANDARDS

Malaysian Standards (MS) for Small Renewable Energy and Hybrid Systems are also available for individual purchase from SIRIM STS Sdn Bhd. Tick (√) in the column below if you wish to purchase the MS and would like to receive the document (s) on the workshop day. Please return this page together with the Registration Form (last page / page 4) to us at 60 3 5510 8830 (fax) and email: zarinahb@sirim.my / sidar@sirim.my

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2	**MS 62257-2:2009** RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION - PART 2: FROM REQUIREMENTS TO A RANGE OF ELECTRIFICATION SYSTEMS	RM 70	
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4	**MS 62257-4:2009** RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION - PART 4: SYSTEM SELECTION AND DESIGN	RM 80	
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