13η ΕΚΘΕΣΗ ΕΞΟΙΚΟΝΟΜΗΣΗΣ ΕΝΕΡΓΕΙΑΣ SAVENERGY 2017

OEB

Μέγα χορηγός

ΣΥΝΕΡΓΑΤΙΚΗ ΚΕΝΤΡΙΚΗ ΤΡΑΠΕΖΑ

Poster Presentation Registration Form

Poster Session

Savenergy Conference, 13 May 2017, 9.00-14.30

Venue: Cyprus State Fair

To register, please e-mail this form to acharalambous@oeb.org.cy or send it by fax to 22666661 (c/o Mrs Anthi Charalambous).

Deadline for submission: 28th April 2017

Cost (students): free for poster presentation or 30 € for participating in the conference

Presentation period: 9.00-14.30, 13th May 2017

No unattended presentations: At least one presenter is required to stand by the poster for the entire session.

Poster presentation: Visual display of research which includes text, tables, graphs etc. Bring the poster printed in dimensions 1,30X1,30. Posters boards will be provided.

Poster Title: A comprehensive Matlab/Simulink based simulator for high efficiency 2nd generation PV modules

Topic (select one): renewable energy ☐ energy efficiency ☒

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Level (circle one): undergraduate ☐ postgraduate ☒

Academic Program (i.e., school, department): PhD in Electrical Engineering
Department of Electrical Engineering, Frederick University

Description of research work and key findings (max 250 words):

Herein this study, we present the development and implementation of a generalized photovoltaic computational model using Matlab/Simulink software package. The model is based on the equivalent diode circuit approach and it is designed to simulate two ubiquitous and high performing 2nd generation photovoltaic (PV) modules constructed with Cadmium Telluride (CdTe) and Copper Indium Gallium di-Selenide (CIGS) photoactive thin films, respectively. The output current-voltage (I-V) and power-voltage (P-V) characteristic curves of the aforementioned PV modules have been simulated by taking two input variables (ambient irradiance and temperature) into consideration. The values of key input parameters to the simulator, i.e., parallel resistor (R_p) and series resistor (R_s) have been computed by an efficient Newton-Raphson iteration method. The developed PV model has been validated with the experimental results obtained from standard PV module datasheet provided by manufacturers, wherein the obtained simulated results exhibited a good agreement.

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