

APPLICABILITY OF EQUIVALENT DIODE MODELS TO MODELING VARIOUS THIN-FILM PHOTOVOLTAIC (PV) MODULES IN A WIDE RANGE OF TEMPERATURE AND IRRADIANCE CONDITIONS

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Received September 24, 2006; accepted November 2, 2006; published November 16, 2006

ABSTRACT

In the paper results of fitting of current-voltage (I - V) curves acquired in a wide range of irradiances and temperatures with use of equivalent either single (SEM) or double (DEM) diode model as applied to several commercial thin-film photovoltaic (PV) modules are presented. It is shown that like in case of crystalline silicon PV modules also for CIGS (CuInGaSe_2) as well as CdTe thin-film modules both models may be reliably applied whereas in case a-Si (amorphous silicon), whether it is single or multi-junction structure, obtained results can not be accepted as being credible.