

 <p>Laboratoř Fotovoltaických Systémů & Elektrochemických Zdrojů Katedra Elektrotechnologie ČVUT FEL</p>	Entering home preparation on laboratory tasks from the course AE1B13SVS
	Task Name: Measurement of spectrums and irradiance distribution
	Version: 2014/1.0

Measurement of spectrums and irradiance distribution

Study materials

1. First Lecture # 1: Solar energy and basic forms of its exploitation, Influence of geographic position and climate on spectra and irradiance
2. PV - CD ROM from the address <http://pveducation.org/pvcdrom> Chapter 2 Properties of Sunlight

Measurement task No. 1

To measure the spectrum of radiation of different radiation sources and to evaluate the appropriateness of the resources for energy use by PV cell.

Required skills (keywords)

The following keywords will help you in finding information about the issue of the first task of measurement:

Radiometric quantities, spectral density of irradiance, spectral response, spectral sensitivity, AM 1.5, PV cell structure

Necessary devices

To measure at the LFSEZ (lab) you use the following instruments and equipment, find their instructions and basic properties.

RED TIDE 650 spectrometer, a halogen lamp, white LED, glow.

Measurement task No. 2

To measure the intensity distribution of radiation of halogen lamps and measured data graphically evaluate. To compare data measured by different methods.

Required skills (keywords)

Irradiance, Pyranometer, 3D graph, Lux meter (light meter)

Necessary devices

Pyranometer SG420, Light meter LX2011, Mini-KLA

Requirements for preparation

According to the above materials prepare yourself for the following activities:

- 1) Maybe a short test based on study materials for this task (5 questions, 3 well).
- 2) Measurement of task number 1 or 2 within their study group. Decided by lot, so it is necessary to prepare for both tasks.
- 3) Ability to understand the activities of all the "necessary devices"
- 4) The form of preparation is individual, it is recommended to write to the workbook.