

PROFESSIONAL WORKSHOP ON THE LIGHT TECHNOLOGY AND MEASUREMENTS IN REAL LABORATORY CONDITIONS IN THE NEW PHOTOMETRIC LABORATORY

PROGRAM

9⁰⁰-12⁰⁰

Part 1. Theory

1. Fundamentals of Light Technology

- 1.1 Optical radiation - what is light, spectral range, nature and propagation of optical radiation.
- 1.2 The human eye as a receiver of optical radiation (physiology of vision + the characteristics of the human eye as a "detector").
- 1.3 Light technology - what is the meaning of basic parameters: luminous flux [lm], illuminance [lx], luminance [cd/m²], luminance intensity [cd], and their practical applications.

2. Sources of optical radiation

- 2.1 LED as specific light sources. The difference between an LED source and a conventional lamp.
- 2.2 A luminaire as a light source for general applications.
- 2.3 Lamps for special applications (effects: actinic, photosynthesis, disinfection, etc.).
- 2.4 Photometric and colorimetric values as a characterisation of a light source (lm, CCT, lm/W, CRI...).
- 2.5 Photometric and colorimetric values describing the quality of light (lx, cd/m²...).
- 2.6 Flicker and Stroboscopic Visibility Measure "SVM".

12⁰⁰-13⁰⁰

Lunch break

13⁰⁰-16⁰⁰

Part 2. Practise

3. Measurements and evaluation of optical radiation

- 3.1 Photometric and colorimetric parameters, describing the quality of light in the whole range of optical radiation (photobiological interactions, flicker, impact on the circadian cycle).
- 3.2 Methods of measuring LED modules, lamps and LED luminaires in accordance with the CIE 025: 2015 standard;
 - luminous flux measurement with the use of an integrating sphere;
 - angular light distribution measurement with the use of a goniometer and creating photometric files;
 - luminance measurements (luminaires, interiors and roads).

4. Norms and recommendations

- 4.1 EN 62471:2008: Photobiological safety of lamps and lamp systems.
- 4.2 EN 13032-4:2015-09: Light and lighting - Measurement and presentation of photometric data of lamps and luminaires.
- 4.3 TM-18-08: Light and Human Health; TM-30-18 Colour Rendition.
- 4.4 CIE S026 Use and Application of the New Metrology for ipRGC-Influenced Responses to Light.
- 4.5 Ecoproject regulations updates expected this Autumn (new SVM results interpretation).



In the case of a greater interest in a specific topic from the proposed scope, it is possible to adapt the training plan or extend it.

There is also a possibility to conduct a dedicated, more detailed training for specific matters, such as photobiological safety or SVM.

Venue:

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