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Physics learning promoting culture and addressing societal issues

Contribution ID: **23** Type: **Oral presentation**

# Experimental study of opto-electronic effects using smartphone and Phyphox: solar cell and LED

*Tuesday, July 4, 2023 5:00 PM (20 minutes)*

We present a new kit designed to perform an educational study of several common devices that exhibit opto-electronic phenomena: LEDs, solar cells, photodiodes.
The Devices Under Test (DUT) are studied using a cheap datalogger, controlled by a common smartphone, and a board with plugs (where the DUTs may be mounted) and potentiometers that allow to obtain characteristic I-V curves and other interesting graphs.
The kit fosters the students to measure the energy conversion of sustainable devices, such as photovoltaic panels and LED illumination, at miniature scale, allowing to introduce them to the working principles of widespread renewable energy technologies as well as to teach fundamental principles in a new way. Our experimental set up is also designed to enhance digital skills and competences while experimenting with physics.

## How would you like to present your contribution?

Live in Košice (time slot to be allotted based on the programme)

## Target education level (primary)

Upper-secondary education

## Target education level (secondary, optional)

University education

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**Session Classification:** Lab work and experiments

**Track Classification:** Contemporary physics and modern physics at school