

# Welcome to **Optopub** in Stockholm!

**Thursday 31st January-2019 17.30 – 20.30**

**Swedish Energy Agency (SEA), Rosenlundsgatan 9, Stockholm**

## **Part 1: Regular, smart and LiFi Lighting at the Swedish Energy Agency**

**Dr. Christofer Silfvenius, Lighting Specialist at The Swedish Energy Agency**

The Swedish Energy Agency (SEA) is involved in ordinary lighting by engaging in energy efficiency requirement via ecodesign regulations and energy labeling of products. SEA perform market surveillance by testing products available on the Swedish market by testing in the internal photometric laboratory at Rosenlundsgatan in Stockholm. The knowledge from product testing is summarized in suggestions for improving the regulations.

### **Lighting definitions overview**

Typical lighting definitions that the SEA is engaged in are

- Color Temperature (CT), Correlated Colour Temperature (CCT), MacAdam Ellipses, Color Rendering Index (CRI) and Gamut Area Index (GAI).
- Luminous flux measured in lumens. Lumen (and lux, both derived from candela) are the only units that have the human being involved in the definitions and we will discuss how the current definition could benefit from a broader definition, this has become apparent with the LED light sources.
- Novel flicker requirements uses PST and SVM parameters



### **Lighting has become digital and "smart"**

New features and services have been added to lights like smartphone controlled color tuning and dimming or geo fencing. These services adds to the smart light standby power. We can show how the standby power has reduced over only a few years' time.

### **LiFi communicating luminaires**

Among the smart services that LED luminaires can provide there are now appearing Li-Fi (Light Fidelity) as a visible light communication (VLC) service where the LED used for illumination are also used for optical wireless data communication at the same time. We discuss the potential use of LiFi and energy efficiency opportunities.

## **Part 2: Policies for energy efficient lighting**

**Dr. Peter Bennich, Policy Expert at The Swedish Energy Agency**

On Dec 17, 2018, the EU voted in confirmation of a new updated energy efficiency regulation for lighting products. The main takeaways of the new regulation are the inclusions of accelerated life testing, flicker requirements, tighter measurement tolerances and that fluorescent T8 tubes will be phased out.

## **Part 3: Tour at the SEA Testlab**

A tour of the SEA Testlab including integrating spheres, aging of E27 lamps, LM80 testing of LED chip and near field goniometer.

**Followed by Optopub 18:30-20:30. Maximum attendees are 35 !**

**Energimyndigheten invites everyone who pre-registered for food and drinks.**

**Please, register here =>: <https://doodle.com/poll/smk6yxsbdbknei66>**

**No later than Monday 28<sup>th</sup> January before kl.16:00 !**



**Welcome!**  
**Christofer Silfvenius & Peter Bennich**  
**Lennart BM Svensson**  
**Optopubs are co-arranged with**

