

LESO **LUNCHTIME*** LECTURES

Friday 27 April 2018, 12:15

EPFL – CM 1 121

Solid-state lighting: from lighting quality to human centric lighting

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Introduction by Dr Ali Motamed – Followed by open discussion

Summary

In the last decade, solid state lighting (SSL) has made tremendous progresses and, today, it accounts for larger and larger shares of the lighting market, being LEDs universally accepted as the lighting sources for the present and the future. In general, while the efficiency of white LEDs has steadily ramped up, new products have appeared on the market providing daylight spectra, homogeneously covering the visible spectrum without any gap or color unbalance. I will review a few developments done in the last decade during my activities at both EPFL and CSEM, in the framework of both industrial collaborations and European projects. This will cover color changing films and micro/nano optical solutions for both spectral and spatial light management. If in the last few years the focus was on the possibility of obtaining an improved color rendering as well as lighting quality, recently, the interest has shifted towards new developments targeting a lighting experience optimized for our circadian rhythm. In other words, SSL is nowadays aiming to real solutions for “human centric lighting”, which is announced to be the big trend in the years to come, with new products able to provide a more and more beneficial impact on human health and wellbeing, with the potential to integrate artificial lighting with natural daylight, which is the final frontier for modern professional and general lighting..

About the speaker

Dr. Ferrini is Section Head Micro-Nano Optics and Photonics at CSEM. In 1999, he obtained his PhD in Physics in Pavia (Italy). From 2000 to 2004 at IPEQ-EPFL, he studied the optical properties of photonic crystal devices. From 2004 to 2011 at LOMM-EPFL, he was in charge of the activities on optics, photonics and lighting in collaboration with ILFORD Imaging GmbH. Rolando Ferrini is Coordinator of the Swiss National Laboratory for Solid State Lighting SSSL of Swissphotonics NTN.

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