

Multidisciplinary dialogue for sustainable lighting



Data of Your Paper

**Topic**

- Resilience
- Lifestyle
- Building
- Resources
- Tourism
- Energy

Title of the Paper[Multidisciplinary dialogue for sustainable lighting](#)**Form of Presentation**

- Poster
- Presentation

Short Description (maximum 2500 characters)

Lighting is a major sustainability concern. On a global level, access to electrical lighting is a vital prerequisite for a modern standard of living. Night time production has been one of the main factors behind the surplus that has enabled investments, for examples in the factories, hospitals and schools that characterize wealthy societies. There is a lot to gain when the children can start to do their homework in the evening. LED and many more forms of modern lighting technology enable large electricity savings and simultaneously also better light. However, the global electricity consumption for lighting is in the order of 3000 TWh and ever more lighting is being installed. Furthermore, some light sources contain environmentally questionable materials and scarce resources. Light pollution is starting to be noticed as an environmental issue and the total human effect of continuously lighted modern lifestyle is difficult to assess.

One obvious goal for the renewal of lighting is to save energy. However the quality of lighting and customer satisfaction are imperative for a smooth introduction of new more sustainable lighting. The quality-of-light is a multifaceted issue. This paper builds on interdisciplinary dialogue among researchers in physics, biology, medicine, psychology, architecture, design, entrepreneurship and environmental sciences. Biologists have in-depth knowledge about the plant's light receptors. Physicists have in-depth knowledge about the opto-electronic properties for various materials. Doctors have experience and statistics regarding human health and light related parameters, like vitamin D and melatonin. People in design, architecture and psychology are working with the effects from light related processes.

Lighting is a general concern for everybody and also an advanced technical subject area. To promote a user adapted introduction of the new technology there is a need for renewal oriented interplay between advanced scientific and technical knowledge, and interpretations of the users' needs and wants. This paper describes the process in and learning's from a Swedish multidisciplinary dialogue on lighting, which has been intensive the latest two years. It has been most rewarding to engage people with different perspectives, thinking and experience. Lighting is a topical area where intellectual diversity and openness are essential to create mutual learning for

sustainable societal development.

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