

Lighting Laboratory

The research areas of TKK Lighting Laboratory include traffic lighting and vision, light sources and energy, indoor lighting, electrical building services and measurements and testing. The research activities on the biological effects of light began in 2005 and the work in this area has been continuously expanding ever since.

Location

The seminar will be held at Helsinki University of Technology, Department of Electrical and Communications Engineering, in lecture hall S4, Otakaari 5A, Espoo. Busses 102 and 102T from Helsinki bus station at Kamppi.

Registration

For registration, please contact the project planning officer **Leena Väisänen** by **4 May 2007**. Email: leena.vaisanen@tkk.fi, tel (09) 451 4971. Please, give your name, organisation, email, address and telephone number.

The seminar is free of charge for degree and postgraduate students. For the other participants, the fee is **290 € + VAT**. The fee includes the seminar material, coffee and lunches.

10 ECTS credits will be granted to students who participate in the seminar, do the seminar work and pass the exam (S-118.4250). The course can be included in post-graduate studies.



Light & Health

**Seminar on Illuminating
Engineering on 22-23 May 2007**



HELSINKI UNIVERSITY OF TECHNOLOGY
Lighting Laboratory



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Tuesday 22 May

- 9:30 Opening the seminar
Prof Liisa Halonen, TKK Lighting Laboratory
- Introduction to the topic and current research activities
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 10:00 Physiology of the eye and visual system
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 11:00 Break
- 11:15 Physiology of retinocortical communication – five dimensions
D.Med. Simo Vanni, TKK Brain Research Unit of Low Temperature Laboratory
- 12:00 Lunch
- 12:45 Human circadian system
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 13:40 Break
- 13:45 Biological effects of light operating through the circadian system
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 14:45 Coffee break
- 15:00 Sleep and mental health
D.Med. Timo Partonen, National Public Health Institute
- 15:45 Overview of CIE Symposium on Light and Health in Canada 2006
D.Sc. Marjukka Ehololma, TKK Lighting Laboratory
- 16:15 Closing the day
Prof Liisa Halonen, TKK Lighting Laboratory

Wednesday 23 May

- 9:00 Opening the day
Prof Liisa Halonen, TKK Lighting Laboratory
- Aging of the circadian system and lighting for the elderly
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 10:00 Metabolism and heart
D.Med. Timo Partonen, National Public Health Institute
- 10:45 Break
- 11:00 Other biological effects of light
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 11:30 Lunch
- 12:15 Current knowledge on implications for lighting
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 13:15 Studying the non-visual effects of light – installation at TKK
M.Sc. Emilia Rautkylä, TKK Lighting Laboratory
- 13:45 Coffee break
- 14:00 Preferred lighting levels – field studies in industry
R&D Manager Henri Juslén, Philips Oy Luminaires
- 14:30 Experiments on melatonin and visual performance under mesopic lighting
Lic.Sc. Viorel Gligor, TKK Lighting Laboratory
- 15:00 Light, well-being and health – future scenarios and research needs
Prof Peter R. Boyce, Rensselaer Polytechnic Institute
- 16:00 Closing the seminar
Prof Liisa Halonen, TKK Lighting Laboratory

Lecturers

Professor Peter R. Boyce earned his doctorate in Reading University, England in 1965. In 1966-1990 he worked as Research Officer in Electricity Council Research Centre, England. In 1990-2004 he was the Head of Human Factors at the Lighting Research Center, Rensselaer Polytechnic Institute, New York. Since 2004 he has been working as an independent consultant. His current interest areas are photobiology, lighting for elderly, security lighting, light pollution and lighting quality. He has published the book *Human Factors in Lighting* and more than eighty papers in refereed journals.



Marjukka Ehololma (D.Sc.) is working as a research scientist at TKK Lighting Laboratory where she is the leader of the Traffic Lighting and Vision Group. Her research areas cover mesopic lighting, visibility at low light levels and biological effects of light.

Viorel Gligor (Lic.Sc.) is post-graduate student working as a research scientist at TKK Lighting Laboratory. His research areas are biological effects of light and visual and human performance and light.

Henri Juslén (M.Sc.) works at Philips Oy Luminaires Finland as a R&D Manager. His research area is industrial lighting.

Timo Partonen (D.Med.) is Academy Research Fellow (Academy of Finland) at the National Public Health Institute, Helsinki, and Associate Professor at the University of Helsinki. He has focused his research interest on the effect of light exposure on the circadian clock.

Emilia Rautkylä (M.Sc.) is post-graduate student working as a research scientist at TKK Lighting Laboratory. Her main research area is biological effects of light.

Simo Vanni (D.Med., Docent in Neurophysiology) works as a senior researcher at the Brain Research Unit at TKK. His research area is physiology of vision, particularly characterizing low-level visual processing in human cortex by magnetoencephalographic (MEG) neuroimaging.