

Monday 9 October

- 9.00 Opening of the seminar
Prof. **Liisa Halonen**, TKK Lighting Laboratory
- 9.10 Road lighting design and measurements
D.Sc. **Marjukka Eloholma**, TKK Lighting Laboratory
- 10.40 Break
- 10.45 Tunnel lighting design
CIE Div 4 Director **Pentti Hautala**, SITO
- 11.30 Lunch
- 12.30 Tunnel lighting design
CIE Div 4 Director **Pentti Hautala**, SITO
- 13.15 Light sources in road lighting
D.Sc. **Eino Tetri**, TKK Lighting Laboratory
- 14.00 Coffee
- 14.15 Design principles and new trends in outdoor lighting
Chief of Outdoor Lighting **Juhani Sandström**, Helsinki Public Works Department
- 15.00 Closure of the day
Prof. **Liisa Halonen**, TKK Lighting Laboratory
- Excursion to outdoor lighting installations

Tuesday 10 October

- 9.00 Opening of the day
Prof. **Liisa Halonen**, TKK Lighting Laboratory
- 9.05 Road surfaces – properties, measurements, development trends
D.Sc. **Jarkko Valtonen**, TKK Laboratory of Highway Engineering
- 10.30 Break
- 10.45 Road safety issues
CIE Div 4 Director **Pentti Hautala**, SITO
- 11.30 Lunch
- 12.30 Intelligent road lighting
D.Sc. **Marjukka Eloholma**, TKK Lighting Laboratory
- 13.15 Case study of intelligent road lighting
R&D Manager **Henri Juslén**, Idman
Project Sales Manager **Mika Saari**, Idman
- 14.00 Coffee
- 14.15 LEDs - theory and applications
D.Sc. **Pasi Orreveläinen**, TKK Lighting Laboratory
- 15.00 LEDs - properties and development
Sales Manager **Marko Martikainen**, Osram
- 15.45 Closure of the seminar
- Excursion to TKK Lighting Laboratory

Lecturers

Marjukka Eloholma (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 road lighting, mesopic lighting and visibility at low light levels.

Pentti Hautala (M.Sc.) is in the employ of SITO Companies as the head of outdoor lighting department. He has more than 30 years experience in the field of road, tunnel and urban lighting. He has been a key person in preparation of the national guidelines for road lighting and European standards by CEN. He is the director of Division 4 in CIE.

Henri Juslén (M.Sc.) works at Idman as a R&D Manager. He is a representative of Finland in CIE Div 5 Exterior Lighting and Other Applications.

Marko Martikainen (M.Sc.) is working at OSRAM Finland. He graduated from TKK Lighting Laboratory in 1994 and has been working at OSRAM since then, first as a Technical Specialist until 2000. From 2000 on as a Sales Manager he has been responsible for Trade and OEM customers.

Juhani Sandström (M.Sc.) is working at Helsinki Public Works Department as a chief of Outdoor Lighting. His main know-how areas are street- and traffic design.

Pasi Orreveläinen (D.Sc.) works as a research scientist at TKK Lighting Laboratory. His research activities include vision and lighting, lighting measurements and photometric calibrations.

Mika Saari (Eng.) works at Idman as a Project Manager. His main know-how area is outdoor lighting.

Eino Tetri (D.Sc.) works as a research scientist at TKK Lighting Laboratory. His main research areas are light sources and lighting and energy.

Jarkko Valtonen (D.Sc.) is working in the Laboratory of Highway Engineering at TKK. He has worked as a research manager for 20 years. The main research areas have been asphalt technology, road side safety and road maintenance.

Lighting Laboratory

The research areas of TKK Lighting Laboratory include traffic lighting and vision, light sources and energy, indoor lighting and measurements and testing. Road and tunnel lighting and the optimisation of road lighting by using intelligent road lighting are among the current research activities at Lighting Laboratory.

Location

The seminar will be held at Helsinki University of Technology, TUAS-talo (Otaniementie 17), in lecture halls AS1 (9 October) and TU 1 (10 October) Buses 102 and 102T from the Helsinki bus station at Kamppi.

Registration

For registration, please contact the project planning officer Leena Väisänen by **September 27, 2006**. Email: leena.vaisanen@tkk.fi, tel. (09) 451 4971. Please, give your name, organisation, email, address and telephone.

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



Road and Tunnel Lighting

–Principles, Properties and New Trends

Postgraduate Seminar on Illuminating Engineering on 9-10 October 2006



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