

WEDNESDAY, MAY 23

Session 14

Projection

NOVEL PROJECTION LIGHT SOURCES

Wednesday, May 23 / 9:00 – 10:20 am / Room 102

Chair:

Scott H. Baker, *Hitachi, Ltd., Greenville, SC, U.S.A.*

Co-Chair:

Alan Sobel, *Flatscreen Technologies Corp., Evanston, IL, U.S.A.*

14.1: Efficient and Compact Illumination in LED Projection Displays (9:00)

B. Van Giel, Y. Meuret, L. Bogaert, L. Desmet,

A. Carballo, H. Thienpont

Vrije Universiteit Brussels, Brussels, Belgium

The design of a compact and efficient illumination system for LED projection systems will be discussed. The design, fabrication, and characterization of the collimator was investigated. An effective gain in light output can be accomplished by utilizing optically coupled light guides that use polarization and mirror recuperation.

14.2: A General Theory of Light Recycling with Light Pipes/Tunnels and Their Applications in LED Illuminators (9:20)

G. Ouyang, K. Li

Wavien, Inc., Valencia, CA, U.S.A.

A general theory of light-pipe/tunnel-based recycling schemes, along with their applications for LED illuminators, will be presented. Light recycling is classified as angular or spatial, based on the angular dependence of the recycling efficiency. The former is exemplified by the tapered light pipe/tunnel, the latter by the straight or reverse-tapered light pipe/tunnel. A commercial application to LED illuminators will be described.

14.3: Ujoy Technology for Personal Projection (9:40)

H. Moench, U. Mackens, P. Pekarski, A. Ritz

Philips Research Laboratories, Aachen, Germany

T. Hermans, G. S'Heeren, W. Verbeek

Philips Lighting N.V., Turnhout, Germany

The new 50-W Ujoy lamp system with a 1-mm arc enables small efficient projection systems with a screen brightness of 200–300 lm. Low-cooling requirements, the potential for battery operation, and low-voltage input makes it the ideal source for this new category of small personal projectors.

14.4L:Late-News Paper: Development of Long-Life Full-Spectrum Light Source for Projection Displays (10:00)

*C.J. Joshi
LUXIM Corp., Sunnyvale, CA, U.S.A.*

A new high-performance light source has been developed by utilizing rf electrodeless plasma technology. This new light source is capable of delivering a light intensity suitable for projection HDTVs up to 70 in. Start times averaging 6 sec or less and an estimated lifetime of 100,000 hours meets the demands of next-generation TVs. This is the first rf electrodeless light source to be produced in high volume for the projection display market.

14.5L:Late-News Paper: High-Collection-Efficiency Fanless LED Source Module for Projectors (10:10)

*S-C. Chuang, C-H. Chen
National Tsing Hua University, Hsinchu, Taiwan, ROC*

*S-W. Chen, S-C. Shen
ITRI, Tainan, Taiwan, ROC*

*M-H. Hsieh, C-C. Yin
EPISTAR Corp., Hsinchu, Taiwan, ROC*

*F-H. Wu, T-H. Tsai
Prodisc Technology, Inc., Taipei Hsien, Taiwan, ROC*

A LED source module, including a large LED chip, LED ballast, flat-plate heat pipe and associated illumination optics has been proposed as a total solution for the light source of a projector engine based on a light-pipe integrator with high lumen throughput.

BREAK (1:20–10:40)

AUTHOR INTERVIEWS (6:30-7:30)