NOVEL DISPLAYS AND IMAGING SYSTEMS

Wednesday, May 23 / 10:40 am – 12:00 pm / Room 104A

Chair:
Jean-Noel Perbet, *THALES Avionics, Le Haillan, France*

Co-Chair:
John A. Rupp, *Motorola, Inc., Corning, NY, U.S.A.*

22.1: ***Invited Paper:*** **An Integrated HMI Concept for Driver Information and Driver-Assistance Systems** **(10:40)**

P. Knoll
University of Karlsruhe, Germany

A large amount of information is now available for drivers of and passengers in modern automobiles. Optimization of the information within the automobile will be discussed. The human-factor impact of this advanced interface on driver performance will be analyzed.

22.2: **Dynamic Resolution: Motion Blur on Displays and Cameras** **(11:00)**

M. Klompenhouwer
Philips Research, Eindhoven, The Netherlands

The temporal properties of the entire video chain affect the sharpness and resolution of moving images. The analysis of LCD motion blur will be extended to a systems approach that includes the effect of the entire video chain.

22.3: **Viewing-Angle-Aware Color Correction for LCDs** **(11:20)**

W-C. Cheng, C-N. Wu
National Chiao Tung University, Hsinchu, Taiwan, ROC

Angular-dependent luminance attenuation of a twisted-nematic LCD as a function of viewer head position was modeled for a backlight scaling framework that minimizes power consumption while preserving optimal image quality. Human factors were also studied, and an emulator for visualizing luminance attenuation and color shift for different head positions was developed.

22.4: ***Invited Paper:*** **Augmented-Vision Head-Mounted Systems for Vision Impairments** **(11:40)**

E. Peli, G. Luo, A. Bowers
The Schepens Eye Research Institute, Harvard Medical School, Boston, MA, U.S.A.

N. Rensing
MicroOptical Engineering Corp., Westwood, MA, U.S.A.

A novel concept of vision multiplexing using augmented vision systems for the visually impaired have been developed, implemented, and tested. Minified contour images derived from a head-mounted camera will be presented on a see-through display, providing visual field expansion while still enabling the full resolution of residual central vision to be maintained.

LUNCH **(12:00–2:15)**

AUTHOR INTERVIEWS **(6:30–7:30)**