

11:00 *Design Options for 1/4"-FT-CCD pixels*
J. T. Bosiers, E. Roks, H. L. Peek, Y. A. Boersma, J. M. van der Heyden
Philips Imaging Technology, The Netherlands

11:30 *A 1/3-inch 330k Square-Pixel Progressive-Scan IT-CCD*
T. Yamaguchi, T. Okutani, K. Mitsui, M. Takagi, K. Takeda, Y. Sone,
T. Imanishi, and Y. Hiroshima
Picture Component Division, Matsushita Electronics Corporation

12:00 **LUNCH**

Session 2. Large Area CCDs

Chairman S. G. Chamberlain

1:30 pm *Back-Illuminated Wafer-Scale CCD Imager*
B. E. Burke, J. A. Gregory, R. W. Mountain, B. B. Kosicki, H. C. Clark,
P. J. Daniels, V. S. Dolat, T. L. Lind, A. H. Loomis, and D. J. Young
Lincoln Laboratory, Massachusetts Institute of Technology

2:00 *Large Area High Resolution CCD Imaging Devices*
R. Bredthauer, P. Vu, R. Potter, B. Mathews*
Loral Fairchild Imaging Sensors, * Loral Fairchild Systems

2:30 **COFFEE BREAK**

3:00 *Mega Pixel CCD Image Sensor Technology*
S. G. Chamberlain, S. R. Kamasz, C. R. Smith, and W. D. Washkurak
DALSA Inc., Canada

3:30 *Some Early Imaging Results with a 4096x4096-Element X-Ray Image Sensor*
R. Dyck, S. Onishi, D. Wen, Y. Abedini, D. Xiao, A. Sayed, M. Sayag, and
A. Karellas*
Loral Fairchild Imaging Sensors, * University of Mass. Medical Center

4:00 **BREAK**

Session 3. Poster Session

Chairman N. Teranishi

4:15 *A Switched CCD Electrode Programmable Photodetector*
B. Washkurak and S. Chamberlain
DALSA Inc., Canada

4:20 *A New Analytical MTF Model and its Applications*
E. G. Stevens, J. P. Lavine, H. J. Erhardt, and R. H. Philbrick
Microelectronics Technology Division, Eastman Kodak Company

4:25 *Optimum Design for a 2-Phase CCD*
Y. Kawakami, T. Yamada, N. Mutoh, K. Orihara, and N. Teranishi
Microelectronics Research Laboratories, NEC Corporation, Japan

- 4:30 *2-D Modeling of Charge Coupled Devices: Optimum Design and Operation for Maximum Charge Handling Capability*
J. Pinter, J. Bishop, J. Janesick*, and T. Elliott*
Loral Fairchild Imaging Sensors, * Jet Propulsion Laboratory
- 4:35 *Simulation for 3-Dimensional Optical and Electrical Analysis of CCD*
H. Mutoh
Link Research Corporation, Japan
- 4:40 *3-Dimensional Numerical Analysis of Deep Depletion Charge-Coupled Devices*
M. H. Kim, J. Fothergill, and A. Holland*
Department of Engineering, University of Leicester, UK
* Department of Physics and Astronomy, University of Leicester, UK
- 4:45 *Simulation of High Density CCD Imager Structures*
G. Yang, C. Ye, and W. F. Kosonocky
Electronic Imaging Center, New Jersey Institute of Technology
- 4:50 *A Mega-Pixel Resolution Digital Still Camera*
W-H. Chan, C-F. Chou, and N-Y. Hu
Industrial Technology Research Institute, Taiwan, ROC
- 4:55 *A Real-Time Digital Signal Processor for Use with the Interline Transfer Color CCD Imager*
S-S. Wang, C-H. Wu, and N-Y. Hu
Image Processing Department, Industrial Technology Research Institute, Taiwan, ROC
- 5:00 *Near-Infrared Imaging Applications with InGaAs*
G. H. Olsen, M. J. Cohen, M. J. Lange, S. R. Forrest*, D. S. Kim*, Y. Soo*, W. F. Kosonocky**
Sensors Unlimited, * Princeton University,
**New Jersey Institute of Technology
- 5:05 *Source-Follower-Type Image Sensor Driven From Back Electrodes*
H. Shiraki
NEC Corporation, Japan
- 5:10 *An Active Pixel Sensor Fabricated Using CMOS/CCD Process Technology*
P. P. K. Lee, R. C. Gee*, R. M. Guidash, T-H. Lee, and E. R. Fossum*
Microelectronics Technology Division, Eastman Kodak Company
* Jet Propulsion Laboratory
- 5:15 *A CMOS Active Pixel Image Sensor with Amplification and Reduced Fixed Pattern Noise*
Z. Zhou, S. E. Kemeny, B. Pain, R. C. Gee and E. R. Fossum
Jet Propulsion Laboratory
- 5:20 *CMOS Active Pixel Sensor Array with Programmable Multiresolution Readout*
S. Kemeny, B. Pain, R. Panicacci, L. Matthies, and E. Fossum
Jet Propulsion Laboratory

5:25 *On-Chip Current-Mode Focal Plane Signal Processing for a CMD Image Sensor*
J. Nakamura, B. Pain,* and T. Nomoto**
Olympus America Inc. * Jet Propulsion Laboratory
** Olympus Optical Co., Ltd., Japan

5:30 **RECEPTION, POSTER VIEWING**

7:00 **DINNER**

FRIDAY, APRIL 21

Session 4. Smart Sensors

Chairman T. H. Lee

8:15 am *On Sensor Video Compression*
K. Aizawa, H. Ohno, Y. Egi, T. Hamamoto, M. Hatori, and J. Yamazaki*
University of Tokyo, Dept. of Elec. Eng., * NHK, Sci. and Tech. Res. Labs,
Japan

8:45 *New Massively Parallel Technique for Global Operations in Embedded Imagers*
V. Brajovic and T. Kanade
The Robotics Institute, Carnegie Mellon University

9:15 *A Road-Following Computational-Sensor Prototype*
A. Gruss
Computer Science Department, Carnegie Mellon University

9:45 *Integration-Time Based Computational Image Sensors*
R. Miyagawa and T. Kanade
The Robotics Institute, Carnegie Mellon University

10:15 **COFFEE BREAK**

Session 5. Active Pixel Sensors

Chairmen J. Hyncek and W. F. Kosonocky

10:45 *A CMD Image Sensor -An Approach to High-Resolution Imaging*
T. Nakamura, K. Matsumoto, and T. Nomoto
Olympus Optical Co., Ltd., Japan

11:15 *Active Pixel CMOS Image Sensor with On-Chip Non-Uniformity Correction*
N. Ricquier and B. Dierickx
IMEC, Belgium

11:45 **LUNCH**

- 1:15 pm** *Application Specific Image Sensors*
A. Dickinson
AT&T Bell Laboratories
- 1:45** *CMOS FPA with Multiplexed Pixel Level ADC*
B. Fowler, A. E. Gamal, and D. Yang
Information Systems Laboratory, Stanford University
- 2:15** *CMOS Digital Camera With Parallel Analog-to-Digital Conversion Architecture*
A. Dickinson, S. Mendis, D. Inglis, K. Azadet, and E. Fossum*
AT&T Bell Laboratories, * Jet Propulsion Laboratory
- 2:45** **COFFEE BREAK**
- 3:15** *High Speed CMOS Binary Active Pixel Image Sensor*
R. Panicacci, S. E. Kemeny, P. D. Jones, C. Staller, and E. R. Fossum
Jet Propulsion Laboratory
- 3:45** *Comparison of CCD and CMOS Pixels for a Wide Dynamic Range Area Imager*
S. Decker and C. G. Sodini
Department of Electrical Engineering and Computer Science
Massachusetts Institute of Technology
- 4:15** *Future Prospects for CMOS Active Pixel Image Sensors*
E. R. Fossum and P. H. S. Wong*
Jet Propulsion Laboratory, * IBM Research Center

Session 6. Discussion Session

Chairmen E. R. Fossum and J. Nakamura

5:00 All participants

6:30 **DINNER - Banquet**

SATURDAY, APRIL 22

Session 7. Catch-All

Chairmen Y-J. Yu and G. Weckler

8:00 am *Novel CCD Magnetic Field Sensors*
G. Haigh and S. Munroe
Analog Devices, Inc.

8:30 *Back Thinned CCD's for Direct Electron Imaging*
A. Reinheimer, M. Blouke, and G. Williams
Scientific Imaging Technologies, Inc.

- 9:00** *Ultraviolet and Visible Response of Delta-Doped CCDs*
S. Nikzad, M. E. Hoenk, P. J. Grunthner, F. J. Grunthner, J. R. Janesick,
M. Fattahi*, R. Winzenread*, and H-F. Tseng*
Jet Propulsion Laboratory, * EG&G Reticon
- 9:30** **COFFEE BREAK**
- 10:00** *Optimization of CCD Output Amplifier for SN Ratio Improvement*
T. Nakano, N. Mutoh, and N. Teranishi
Microelectronics Research Laboratories, NEC Corporation, Japan
- 10:30** *Random Noise and Fixed Pattern Noise in STACK-CCD Imager*
S. Ohsawa and Y. Matsunaga
ULSI Research Laboratories 3, TOSHIBA Corporation, Japan
- 11:00** *Large Format A-Si:H 2-Dimensional Array as Imaging Devices*
X. D. Wu, R. A. Street, R. Weisfield, D. Begelsen, W. Jackson, D. Jared,
S. Ready, and R. Apte
Xerox Palo Alto Research Center
- 11:45** **CONCLUSIONS**