

References

Papers

- [1] E. R. Fossum, "Active Pixel Sensors : Are CCD's Dinosaurs?", in *Proc. SPIE*, Vol.1900, pp.2~14, 1993.
- [2] M. Loinaz, et al., "A 200mW 3.3V CMOS Color Camera IC Producing 352x288 24b Video at 30 Frames/s", in *ISSCC Dig. Tech. Papers*, pp.168~169, 1998.
- [3] T. Sugiyama, et al., "A 1/4-inch QVGA Color Imaging and 3-D Sensing CMOS Sensor with Analog Frame Memory", in *ISSCC Dig. Tech. Papers*, pp.434~435, 2002.
- [4] S. Kawahito, et al., "A Compressed Digital Output CMOS Image Sensor with Analog 2-D DCT Processors and ADC/Quantizer", in *ISSCC Dig. Tech Papers*, pp.184~185, 1997.
- [5] M. Schanz, C. Nitta, A. Bußanm, B. J. Hosticka, R. K. Wertheimer, "A High-Dynamic-Range CMOS Image Sensor for Automotive Applications", in *IEEE JSSC*, Vol. 35, NO.7, pp.932~938, July 2000.
- [6] B. J. Hosticka, W. Brockherde, A. Bußanm, T. Heimann, R. Jeremias, A. Kemna, C. Nitta, O. Schrey, "CMOS Imaging for Automotive Applications", in *IEEE Trans. Electron Devices*, Vol. 50, No.1, pp.173~183, January 2003.
- [7] N. V. Loukianova, H. O. Folkerts, J. P. V. Maas, D. W. E. Verburgt, A. J. Mierop, W. Hoekstra, E. Roks, A. J. P. Theuwissen, "Leakage Current Modeling of Test Structures for Characterization of Dark Current in CMOS Image Sensors", in *IEEE Trans. Electron Devices*, Vol. 50, No.1, pp.77~83, January 2003.
- [8] Y. Muramatsu, S. Kurosawa, M. Furumiya, H. Ohkubo, Y. Nakashiba., "A Signal-Processing CMOS Image Sensor using a Simple Analog Operation", in *IEEE JSSC*, Vol. 38, No. 1, pp.101~106, January 2003.
- [9] H. Alzahr, M. Ismail, "A CMOS Fully Balanced Differential Difference Amplifier and Its Applications", in *IEEE Trans. C.A.S.-II : Analog and Digital Signal Processing*, Vol. 48, No. 6, pp.614~620, June 2001.
- [10] J. A. S. Dias, W. B. de Moraes, "CMOS Temperature- Stable Liberalized Differential Pair", in *ELECTRONICS LETTERS*, Vol.28 No.25, pp.2350~2351 3rd December 1992.
- [11] K. N. Leung, P. K. T. Mok, "A Sub-1-V 15-ppm/°C CMOS Bandgap Voltage Reference Without Requiring Low Threshold Voltage Device", in *IEEE JSSC*, Vol. 37, No.4, pp., pp.526~530, April 2002.
- [12] S. G. Chamberlain, "Photosensitivity and Scanning of Silicon Image Detector Arrays", in *IEEE JSSC*, Vol. SC-4, pp.333~342, 1969.
- [13] T. Delbrück, "Investigations of Visual Transduction and Motion Processing", Ph.D. thesis, California Institute of Technology, 1993.
- [14] E-S. Eid, A.G. Dickinson, D.A. Inglis, B. D. Ackland and E. R. Fossum, "CMOS Active Pixel Image Sensor for Low Cost Applications", in *International Conference on Electronics, Circuits and Systems*, pp.S39~S46, 1994.
- [15] S. Mendis, S. E. Kemeny and E. R. Fossum, "CMOS Active Pixel Image Sensor", in *IEEE Trans. Electron Devices*, Vol. ED-41, pp.452~453, 1994.
- [16] S. Mendis, S. E. Kemeny, R. C. Gee, B. Pain, C.O. Staller, Q. Kim and E. R. Fossum, "Progress in CMOS Active Pixel Image Sensor", in *SPIE*, Vol.2172, pp.19~29,1994.

- [17] G. Soncini, M. Zen, M. Rudan and G. Verzellesi, "On the Electro-optical Characteristics of CMOS Compatible Photodiodes", in *Mediterranean Electro-technical Conference*, pp.111~113, May 1991.
- [18] Abbas El Gamal, Helmy Eltoukhy, "CMOS Image Sensors", in *IEEE Circuits and Devices Magazine*, pp. 6-20 May/ June 2005
- [19] W. S. Boyle and G. E. Smith, "Charge Coupled Semiconductor Devices", in *Bell Syst. Tech. J.*, pp.587~593, Apr. 1970.
- [20] Kazuya Yonemoto, Hirofumi Sumi, "A Numerical Analysis of a CMOS Image Sensor With a Simple Fixed-Pattern-Noise-Reduction Technology", in *IEEE Trans. Electron Devices*, Vol. 49, Issue 5, pp.746~753, May 2002
- [21] S. J. Decker, R. D. McGrath, K. Brehmer, and C. G. Sodini, "A 256×256 CMOS imaging array with wide dynamic range pixels and column parallel digital output," in *IEEE JSSC*, Vol. 33, pp. 2081~2091, Dec. 1998.
- [22] D. Yang, A. El Gamal, B. Fowler, and H. Tian, "A 640×512 CMOS image sensor with ultrawide dynamic range floating-point pixel-level ADC," in *IEEE JSSC*, Vol.34, pp. 1821~1834, Dec. 1999.
- [23] D. Stoppa, A. Simoni, L. Gonzo, M. Gottardi, and G.-F. Dalla Betta, "A 138-dB dynamic range CMOS image sensor with new pixel architecture," in *ISSCC Tech. Dig.*, Vol. 45, pp. 40~41, 2002.
- [24] L. McIlrath, "A low-power low-noise ultrawide-dynamic-range CMOS imager with pixel-parallel A/D conversion," in *IEEE JSSC*, Vol. 36, pp.846~853, May 2001.
- [25] O. Y. Petch., E. R. Fossum, "Wide Interscene Dynamic Range SMOS APS Using Dual Sampling," in *IEEE Trans. Electron Devices*, Vol.44, No.10, pp. 1721~1723, 1997.
- [26] 萩原義雄,ほか,"対数変換形 CMOS 元エリア固体撮像素子,"*映像情報メディア学会誌*, Vol.54, No.2, pp.224~228, 2000.
- [27] S. J. Decker, R. D. McGrath, K. Brehmer, and C. G. Sodini, "A 256×256 CMOS imaging array with wide dynamic range pixels and column parallel digital output," in *ISSCC, Dig. Tech. Papers*, pp.176~177, 1998.
- [28] D. Yang, B. Fowler, and A. El Gamal, "A Nyquist-Rate Pixel Level ADC for CMOS Image Sensors," in *IEEE JSSC*, Vol. 34 No.3, pp.348~356, 1999.
- [29] G. Chapinal, S. A. Bota, M. Moreno, J. Palacin, A. Herms, "A 128×128 CMOS Image Sensor With Analog Memory for Synchronous Image Capture," in *IEEE Sensors Journal*, Vol. 2, No.2, pp. 120~127, April 2002.
- [30] M. Furumiya, H. Ohkubo, Y. Nakashiba, "A Signal-Processing CMOS Image Sensor Using a Simple Analog Operation," in *IEEE JSSC*, Vol. 38, No.1, January 2003.
- [31] S. Sugawa, N. Akahane, S. Adachi, K. Mori, T. Ishichi, K. Mizobuchi, "A 100dB Dynamic Range CMOS Image Sensor Using a Lateral Overflow Integration Capacitor," in *IEEE ISSCC, Dig. Tech. Papers*, 19.4, pp.601~603, February 2005.
- [32] N. Akahane, S. Sugawa, S. Adaci, K. Mori, T. Ishiyuki, K. Mizobuchi, "A Sensitivity and Linearity Improvement of a 100 dB Dynamic Range CMOS Image Sensor Using a Lateral Overflow Integration Capacitor", in *VLSI Circuits, Digest of Technical Papers* , pp.62~65, June 2005.
- [33] N. Akahane, S. Sugawa, S. Adaci, K. Mori, T. Ishiyuki, K. Mizobuchi, "A sensitivity and linearity improvement of a 100-dB dynamic range CMOS image sensor using a lateral overflow integration capacitor", in *IEEE JSSC*, Vol. 41, Issue 4, pp.851~858, April 2006.

- [34] S. C. Huang, M. Ismail, S. R. Zarabadi, "A Wide Range Differential Difference Amplifier: A Basic Block for Analog Signal Processing in MOS Technology", in *IEEE Trans. C.A.S.-II : Analog and Digital Signal Processing*, Vol. 40, No.5, pp. 289~301, May 1993.
- [35] D. Hilbiber, "A New Semiconductor Voltage Standard," IEEE ISSCC Dig. Of Tech. Papers, pp. 32~33, Feb, 1964.
- [36] Y. Değerli, F. Lavernhe, P. Magnan, J. A. Farré," *Analysis and Reduction of Signal Readout Circuitry Temporal Noise in CMOS Image Sensors for Low-Light Levels*", *IEEE Trans. On Electron Devices*, Vol. 47, No.5, pp. 949~962, May 2000.
- [37] 吳俊鵬、宋開泰，"整合動態物體偵測電路之 CMOS 影像感測晶片研發：Development of a CMOS Image Sensor with On-Chip Movement Detection Circuits"，碩士論文，國立交通大學電機與控制學系，中華民國九十年六月。
- [38] 林哲毅、金雅琴，"具高動態範圍之 4T 主動式影像感測器元件及操作方式：A Four Transistor CMOS Active Pixel Sensor with High Dynamic Range Operation"，碩士論文，國立清華大學電子工程研究所，中華民國九十三年六月。

Website

- < 1 > Arena Nikkeibp Report , <http://arena.nikkeibp.co.jp/news/20060606/117021/>
- < 2 > Physics Demo Lab in National Taiwan Normal University, <http://www.phy.ntnu.edu.tw/demolab/txt/light6.htm>
- < 3 > Molecular Nano-Optics and Spins' Lab in Leiden University, Netherlands, <http://www.monos.leidenuniv.nl/smo/index.html?basics/light.htm>
- < 4 > Dipol Website, <http://www.dipol.com.pl/images/a143.jpg>
- < 5 > DHD Multimedia Gallery, http://gallery.hd.org/_c/natural-science/prism-and-refraction-of-light-into-rainbow-2-AJHD.jpg.html
- < 6 > ColorXrays Photo Gallery, <http://colorxrays.com/gallerymedical.htm>
- < 7 > Michael Fowler , "The Photoelectric Effect " , Physics course in University of Virginia, http://galileo.phys.virginia.edu/classes/252/photoelectric_effect.html
- < 8 > Mr. OH, "Sensor Devices: CCD & CMOS", Mr. OH Digital Course Chap. 2 <http://www.digital.idv.tw/digital/Classroom/MROH-CLASS/oh2/index-oh2.htm>
- < 9 > MAYO Clinic Inc., "Capsule Endoscopy", MAYO Clinic Medical Services <http://www.mayoclinic.org/crohns/capsuleendo.html>
- < 10 > Motic Inc., "MLC-150C Datasheet", <http://www.motic.com>
- < 11 > PixArt Imaging Inc., "PAC7312PE Datasheet", <http://www.pixart.com.tw/ch/productsditel.asp>

Books

- 【1】 米本和也 原著；陳榕庭、彭美桂 翻譯，"CCD/CMOS 影像感測器之基礎與應用"，全華科技圖書股份有限公司，2005年初版。

- 【2】 Phillip E. Allen and Douglas R. Holberg, “CMOS Analog Circuit Design”, second edition, Oxford University Press, Inc, 2002.
- 【3】 Behzad Razavi, “Design of Analog CMOS Integrated Circuits”, McGraw-Hill Companies, Inc. 2004.
- 【4】 Tamás Roska, Ángel Rodríguez – Vázquez, “Towards the Visual Microprocessor – VLSI Design and the Use of Cellular Neural Network Universal Machines”, John Wiley & Sons Ltd, 2001.
- 【5】 Jerald G. Graeme, “Photodiode Amplifiers: OP AMP Solutions”, McGraw –Hill Companies, Inc. 1995.
- 【6】 Paul R. Gray, Paul J. Hurst, Stephen H. Lewis, Robert G. Meyer, “Analysis and Design of Analog Integrated Circuits”, fourth edition, John Wiley & Sons, Inc., 2001.
- 【7】 Kiyoharu Aizawa, Katsuhiko Sakaue, Yasuhito Suenaga, “Image Processing Technologies: Algorithms, Sensors, and Applications”, Marcel Dekker, Inc.,2004
- 【8】 R. Jacob Baker, “CMOS Circuit Design, Layout, and Simulation”, second edition, John Wiley & Sons, Inc.,2005
- 【9】 R. Jacob Baker, “CMOS Mixed-Signal Circuit Design : Volume II of CMOS Circuit Design, Layout, and Simulation”, John Wiley & Sons, Inc.,2002
- 【10】 S. M. Sze, “Physics of Semiconductor Devices”, second edition, John Wiley & Sons, Inc.,1981
- 【11】 R. S. Muller and T. I. Kamins, “Device Electronics for Integrated Circuits”, second edition, John Wiley & Sons, Inc., New York, 1986
- 【12】 Silvano Donati, “Photodetectors : Devices, Circuits, and Applications”, Prentice Hall, Inc. 2000.
- 【13】 G. A. Rincón-Mora , “Analog Integrated Circuit Handout”
- 【14】 張文旭, 彭昱吟, 吳建福, “Full-Custom IC Design Concepts(for WS):Training Manual”, 國研院國家晶片系統設計中心, 2005-July
- 【15】 張年翔, “Cell-Based IC Physical Design and Verification with SOC Encounter :Training Manual”, 國研院國家晶片系統設計中心, 2005-July
- 【16】 許志賢, “Full-Custom Layout Editor with Laker :Training Manual”, 國研院國家晶片系統設計中心, 2005-July
- 【17】 許志賢, “Mixed-Signal IC Design Kit :Training Manual”, 國研院國家晶片系統設計中心, 2005-July
- 【18】 Taiwan Semiconductor Manufacturing Company (TSMC) Ltd, “TSMC CMOS Image Sensor Technology”, introduction document, 2005
- 【19】 Micron Ltd, “Micron MT9V022 Automotive CMOS Image Sensor Datasheet “, datasheet document, 2005