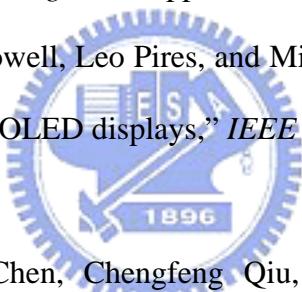


## References:

### Chapter 1:

- [1.1] Chun-Yen Liu, Kuo-Bin Hsu, Ryan Lee, Chang-Ho Tseng, Shin-Chang Chang, and Yaw-Ming Tsai, “High performance fully self-aligned symmetric LDD TFT for system-on-panel display,” in *SID Tech. Dig.*, 2005, pp. 308-311.
- [1.2] Kiyoshi Yoneda, Hidenori Ogata, Shinji Yuda, Kohji Suzuki, Toshifumi Yamaji, Shiro Nakanishi, Tsutomu Yamada, and Yoshihiro Morimoto, “Optimization of low-temperature poly-Si TFT-LCDs and a large-scale production line for large glass substrates,” *Journal of the SID*, vol. 9, pp. 173-179, 2001.
- [1.3] Y. Matsueda, T. Ozawa, M. Kimura, T. Itoh, K. Kitwada, T. Nakazawa, H. Ohsima, “A 6-bit-color VGA low-temperature poly-Si TFT-LCD with integrated digital data drivers,” in *SID Tech. Dig.*, 1998, pp. 879-882.
- [1.4] J. G. Blake, J. D. III Stevens, and R. Young, “Impact of low temperature polysilicon on the AMLCD market,” *Solid State Tech.*, vol. 41, pp. 56-62, 1998.
- [1.5] Y. Aoki, T. Lizuka, S. Sagi, M. Karube, T. Tsunashima, S. Ishizawa, K. Ando, H. Sakurai, T. Ejiri, T. Nakazono, M. Kobayashi, H. Sato, N. Ibaraki, M. Sasaki, and N. Harada, “A 10.4-in. XGA low-temperature poly-Si TFT-LCD for mobile PC applications,” in *SID Tech. Dig.*, 1999, pp. 176-179.
- [1.6] S. D. Brotherton, J. R. Ayres, M. J. Edwards, C. A. Fisher, C. Glaister, J. P. Gowers, D. J. McCulloch, and M. Trainor, “Laser crystallized poly-Si TFTs for AMLCDs,” *Thin Solid Films*, vol. 337, pp. 188–195, 1999
- [1.7] S. D. Brotherton, D. J. McCulloch, J. P. Gowers, J. R. Ayres, C. A. Fisher, and F. W. Rohlfing, “Excimer laser crystallization of poly-Si TFTs for AMLCDs,” in *Proc. Mat. Res. Soc. Symp.*, vol. 621, 2000, pp. Q7.1.1–Q7.1.12.

- [1.8] H. J. Kim, D. Kim, J. H. Lee, I. G. Kim, G. S. Moon, J. H. Huh, J. W. Hwang, S. Y. Joo, K. W. Kim, and J. H. Souk, “A 7-in. full-color low-temperature poly-Si TFT-LCD,” in *SID Tech. Dig.*, 1999, pp. 184-187.
- [1.9] M. Kimura, I. Yudasaka, S. Kanbe, H. Kobayashi, H. Kiguchi, S.i. Seki, S. Miyashita, T. Shimoda, T. Ozawa, K. Kitawada, T. Nakazawa, W. Miyazawa, and H. Ohshima, “Low-temperature polysilicon thin-film transistor driving with integrated driver for high-resolution light emitting polymer display,” *IEEE Trans. on Electron Devices*, Vol. 46, p2282-2288, No. 12, Dec. 1999
- [1.10] Mark Stewart, Robert S. Howell, Leo Pires, Miltiadis K. Hatalis, Webster Howard, and Olivier Prache, “Polysilicon VGA active matrix OLED displays – technology and performance,” in *IEDM Tech. Dig.*, 1998, pp. 871-874.
- [1.11] Mark Stewart, Robert S. Howell, Leo Pires, and Miltiadis K. Hatalis, “Polysilicon TFT technology for active matrix OLED displays,” *IEEE Trans. Electron Devices*, vol. 48, pp. 845-851, 2001.
- 
- [1.12] Zhiguo Meng, Haiying Chen, Chengfeng Qiu, Hoi S. Kwok, and Man Wong, “Active-matrix organic light-emitting diode display implemented using metal-induced unilaterial crystallized polycrystalline silicon thin-film transistors,” in *SID Tech. Dig.*, 2001, pp. 380-383.
- [1.13] Zhiguo Meng and Man Wong, “Active-matrix organic light-emitting diode displays realized using metal-induced unilaterally crystallized polycrystalline silicon thin-film transistors,” *IEEE Trans. Electron Devices*, vol. 49, pp. 991-996, 2002.
- [1.14] G. Rajeswaran, M. Itoh, M. Boroson, S. Barry, T. K. Hatwar, K. B. Kahn, K. Yoneda, R. Yokoyama, T. Yamada, N. Komiya, H. Kanno, and H. Takahashi, “Active matrix low temperature poly-Si TFT / OLED full color displays: development status,” in *SID Tech. Dig.*, 2000, pp. 974-977.
- [1.15] S. D. S. Malhi, H. Shichijo, S. K. Banerjee, R. Sundaresan, M. Elahy, G. P. Pollack, W.

F. Richardson, A. H. Shan, L. R. Hite, R. H. Womack, P. K. Chatterjee, and H. W. Lam, “Characteristics and three-dimensional integration of MOSFET’s in small-grain LPCVD polycrystalline silicon,” *IEEE Trans. Electron Devices*, vol. 32, pp. 258-281, 1985.

[1.16] Kaustav Banerjee, Shukri J. Souri, Pawan Kapur, and Krishna C. Saraswat, “3-D ICs: a novel chip design for improving deep-submicrometer interconnect performance and systems-on-chip integration,” *Proceedings of the IEEE*, vol. 89, pp. 602-633, 2001.

[1.17] J. H. Jeon, M. C. Lee, K. C. Park, and M. K. Han, “A new polycrystalline silicon TFT with a single grain boundary in the channel,” *IEEE Electron Device Lett.*, vol. 22, pp. 429-431, 2001.

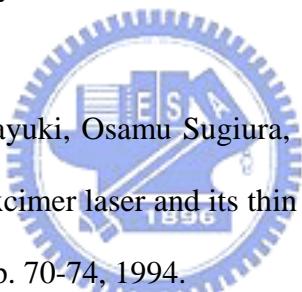
[1.18] A. G. Lewis, T. Y. Huang, I. W. Wu, R. H. Bruce, and A. Chiang, “Physical mechanisms for short channel effects in polysilicon thin film transistors,” in *IEDM Tech. Dig.*, 1989, pp. 349-352.

[1.19] Dimitrios N. Kouvatsos, Apostolos T. Voutsas, and Miltiadis K. Hatalis, “High-performance thin film transistors in large grain size polysilicon deposited by thermal decomposition of disilane,” *IEEE Trans. Electron Devices*, vol. 43, pp. 1399-1406, 1996.

[1.20] Y. C. Wu, Y. C. Wu, C. W. Chou, C. H. Tu, J. C. Lou, C. Y. Chang, T. C. Chang, and P. T. Liu, “Mobility enhancement of pattern-dependent metal-induced lateral crystallization polysilicon thin-film transistors with different dimensions,” in *SID Tech. Dig.*, 2005, pp. 268-271.

[1.21] Man Wong, Gururaj A. Bhat, and Hoi S. Kwok, “Reverse short-channel effect in metal-induced laterally crystallized polysilicon thin-film transistors,” *IEEE Electron Device Lett.*, vol. 20, pp. 566-568, 1999.

[1.22] Yasuyuki Sano, Michiko Takei, Akito Hara, and Nobuo Sasaki, “High-performance Single-Crystalline-Silicon TFTs on a non-alkali glass substrate,” in *IEDM Tech. Dig.*, 2002, pp. 565-568.

- [1.23] Akito Hara, Michiko Takei, Kenichi Yoshino, Fumiyo Takeuchi, Mitsuru Chida, and Nobuo Sasaki, “Self-aligned top and bottom metal double gate low temperature poly-Si TFT fabricated at 550°C on non-alkali glass substrate by using DPSS CW laser lateral crystallization method,” in *IEDM Tech. Dig.*, 2003, pp. 211-214.
- [1.24] K. Kitahara, Y. Ohashi, R. Yamazaki, Y. Katoh, A. Hara and N. Sasaki, “Submicron-scale characterization of poly-Si thin films crystallized by excimer laser and continuous-wave laser,” in *AMLCD Tech. Dig.*, 2003, pp. 53-56.
- [1.25] S. Uchikoga and N. Ibaraki, “Low temperature poly-Si TFT-LCD by excimer laser anneal,” *Thin Solid Films*, vol. 383, pp.19-24, 2001
- [1.26] S. D. Brotherton, D. J. Mcculloch, J. B. Ciegg, and J. P. Gowers, “Excimer-laser-annealed poly-Si thin-film transistors,” *IEEE Trans. Electron Devices*, vol. 40, pp. 407-413, 1993.
- [1.27] Do-Hyun Choi, Eiichi Sadayuki, Osamu Sugiura, and Masakiyo Matsumura, “Lateral growth of poly-Si Film by excimer laser and its thin film transistor applications,” *Jpn. J. Appl. Phys. Part1*, vol. 33, pp. 70-74, 1994.
- 
- [1.28] James S. Im, H. J. Kim, and Michael O. Thompson, “Phase transformation mechanisms involved on excimer laser crystallization of amorphous silicon films,” *Appl. Phys. Lett.*, vol. 63, pp. 1969-1971, 1993.
- [1.29] James S. Im and H. J. Kim, “On the super lateral growth phenomenon observed in excimer laser-induced crystallization of thin Si films,” *Appl. Phys. Lett.*, vol. 64, pp. 2303-2305, 1994.
- [1.30] G. K. Giust, and T. W. Sigmon, “High-performance thin-film transistors fabricated using excimer laser processing and grain engineering,” *IEEE Trans. Electron Devices*, vol. 45, pp. 925-932, 1998.
- [1.31] K. R. Olasupo, and M. K. Hatalis, “Leakage current mechanism in sub-micron polysilicon thin-film transistors,” *IEEE Trans. Electron Devices*, vol. 43, pp. 1218-1223,

1996.

[1.32] G. Fossum, A. Ortiz-Conde, H. Shichijo, and S. K. Banerjee, “Anomalous leakage current in LPCVD polysilicon MOSFET’s,” *IEEE Trans. Electron Devices*, vol. 32, pp. 1878-1885, 1985.

[1.33] G. Fortunato, A. Valletta, L. Mariucci, P. Gaucci, and A. Pecora, “Analysis of polysilicon TFT architectures for drain field relief,” in *AMLCD Tech. Dig.*, 2002, pp. 57-60.

[1.34] K. Tanaka, H. Arai, and S. Kohda, “Characteristics of offset-structure polycrystalline-silicon thin-film transistors,” *IEEE Electron Device Lett.*, vol. 9, pp. 23-25, 1988.

[1.35] B. H. Min, C. M. Park, and M. K. Han, “A novel offset gated polysilicon thin film transistor without an additional offset mask,” *IEEE Electron Device Lett.*, vol. 16, pp. 161-163, 1995.

[1.36] Byung-Hyuk Min, and Jerzy Kanicki, “Electrical characteristics of new LDD poly-Si TFT structure tolerant to process misalignment,” *IEEE Electron Device Lett.*, vol. 20, pp. 335-337, 1999.

[1.37] Kazuhiro Kobayashi, and Yasunori Niwano, “Photo-leakage current of poly-Si thin film transistors with offset and lightly doped drain structure,” *Jpn. J. Appl. Phys. Part1*, vol. 38, pp. 5757-5671, 1999.

[1.38] Chun-Hsiang Fang, De-Hua Deng, Shih-Chang Chang, and Yaw-Ming Tsai, “Fully self-aligned low-temperature poly-silicon TFT process with symmetric LDD structure,” in *SID Tech. Dig.*, 2003, pp. 1318-1321.

[1.39] Yasuyoshi Mishima and Yoshiki Ebiko, “Improved lifetime of poly-Si TFTs with a self-aligned gate-overlapped LDD structure,” *IEEE Trans. Electron Devices*, vol. 49, pp. 981-985, 2002.

[1.40] Bo-Ting Chen, Chang-Ho Tseng, Huang-Chung Cheng, Chi-Wei Chao, Ting-Kuo Chang, Jian-Hao Lu, and Albert Chin “Symmetric Gate-Overlapped LDD Poly-Si TFTs

with Selective and Isotropic Deposited Ni Sub-gate”, *IEEE/ECS Electrochemical and Solid-State Lett.*, vol.7, pp.G37-G39,2004.

[1.41] Kwon-Young Choi, Kee-Chan Park, and Min-Koo Han, “Gate-overlapped lightly doped drain poly-Si thin film transistors by employing low-temperature doping techniques,” *Jpn. J. Appl. Phys. PartI*, vol. 37, pp. 1067-1070, 1998.

[1.42] T. Y. Huang, I. W. Wu, A. G. Lewis, A. Chiang, and R. H. Bruce, “A simpler 100-V polysilicon TFT with improved turn-on characteristics,” *IEEE Electron Device Lett.*, vol. 11, pp. 244-246, 1990.

[1.43] C. H. Kim, I. H. Song, S. H. Jung, and M. K. Han, “A New high-performance poly-Si TFT by simple excimer laser annealing on selectively floating a-Si layer,” in *IEDM Tech. Dig.*, 2001, pp. 751-754.

[1.44] Motohiro Ozawa, Chang-Ho Oh, and Masakiyo Matsumura, “Two-dimensionally position-controlled excimer-laser-crystallization of silicon thin films on glassy substrate,” *Jpn. J. Appl. Phys. PartI*, vol. 38, pp. 5700-5705, 1999.

[1.45] Chang-Ho Oh, Motohiro Ozawa, and Masakiyo Matsumura, “A novel phase-modulated excimer-laser crystallization method of silicon thin film,” *Jpn. J. Appl. Phys. Part2*, vol. 37, pp. L492-L495, 1998.

[1.46] Ryoichi Ishihara, Artyom Burtsev, and Paul F. A. Alkemade, “Location-control of large Si grains by dual-beam excimer-laser and thick oxide portion,” *Jpn. J. Appl. Phys. Part 1*, vol. 39, pp. 3873-3878, 2000.

[1.47] Barry D. van Dijk, Paul Ch. Van der Wilt, G. J. Bertens, Lis.K. Nanver, and Ryoichi Ishihara, “Single-crystal thin film transistor by grain-filter location-controlled excimer-laser crystallization,” *Mat. Res. Soc. Symp. Proc.*, vol. 685E, D12.3.1-D12.3.6, 2001.

[1.48] Paul Ch. van der Wilt, B. D. van Dijk, G. J. Bertens, R. Ishihara, and C. I. M. Beenakker, “Formation of location-controlled crystalline islands using substrate-

embedded seeds in excimer-laser crystallization of silicon films," *Appl. Phys. Lett.*, vol. 79, pp. 1819-1821, 2001.

[1.49] M. A. Crowder, Robert S. Sposili, A. B. Limanov, and James. S. Im, "Sequential lateral solidification of PECVD and sputter deposited a-Si films," *Mat. Res. Soc. Symp. Proc.*, vol. 621, Q9.7.1-Q9.7.6, 2000.

[1.50] Robert S. Sposili and James S. Im, "Sequential lateral solidification of thin silicon films on SiO<sub>2</sub>," *Appl. Phys. Lett.*, vol. 69, pp. 2864-2866, 1996.

[1.51] Mark A. Crowder, A. Tolis Voutsas, Steven R. Droes, Masao Moriguchi, and Yasuhiro Mitani, "Sequential lateral solidification processing for polycrystalline Si TFTs," *IEEE Trans. Electron Devices*, vol. 51, pp. 560-568, 2004.

[1.52] Shin-Hung Yeh, Wein-Town Sun, Jian-Shen Yu, Chien-Chih Chen, Jargon Lee, and Chien-Sheng Yang, "A 2.2-inch QVGA system-on-glass LCD using p-type low temperature poly-silicon thin film transistors," in *SID Tech. Dig.*, 2005, pp. 352-355.

[1.53] Yung-Hui Yeh, Chang-Chenh Lin, Jia-Xing Lin, Yi-Hsun Hung, Ching-Hsuan Tang, Chih-Chiang Chen, Cheng-Chung Chen, Chia-Yu Chen, Chi-Lin Chen, Yong-Fu Wu, Chi-Shen Lee, Shang-Li Chen, Ming-Jiun Liaw, Jun-Ren Shih, Cheng-Chin Hsu, Chai-Yuan Sheu, Ming-Daw Chen, Shang-Wen Chang, and Hwa-Liang Chiou, "The highest resolution of 427 ppi for LTPS TFT-LCD with integrated driver," in *SID Tech. Dig.*, 2003, pp. 1404-1407.

[1.54] Sang-Soo Han, Kyoung-Moon Lim, Juhn S. Yoo, Young-Sik Jeong, Kyoung-Eon Lee, JoonKyu Park, Dae Hyun Nam, Seok-Woo Lee, Jin-Mo Yoon, Yun-Ho Jung, Hyun Sik Seo, and Chang-Dong Kim, "3.5 inch QVGA low-temperature poly-Si TFT LCD with integrated driver circuits," in *SID Tech. Dig.*, 2003, pp. 208-211.

[1.55] Jae-Deok Park, Jeong-Woo Jang, Yoiung-Sik Kim, Seok-Hee Jeong, Hun Jeoung, Soon-Kwang Hong, Han-Wook Hwang, Yong-Min Ha, and Woo-Yeol Kim, "Implementation of 2.2 in. QVGA LTPS TFT-LCDs with the integration of p-type

driving circuitry,” in *Proceedings of International Display Workshops*, 2003, pp. 479-482.

[1.56] Jun Koyama, Yutaka Shionoiri, Munehiro Azami, Shumpei Yamazaki, Masaya Hijikigawa, and Shunichi Naka, “A 4.0-in. poly Si TFT-LCD with integrated 6-bit digital data driver using CGs technology,” in *AMLCD Tech. Dig.*, 1999, pp. 29-32.

[1.57] Yong-Min Ha, Soon-Kwang Hong, Hoon Jeong, Jae-Deok Park, Byeong-Koo Kim, and Woo-Yeol Kim, “P-type low-power low-temperature TFT-LCDs,” in *SID Tech. Dig.*, 2004, pp. 1080-1083.

[1.58] Hiroshi Haga, Yoshihiro Nonaka, Youichi Kitagishi, Youichiro kamon, Tadahiro Matsuzaki, Yoshinobu Sato, Hideki Asada, Tomohiko Otose, and Daigo Sasaki, “A 510-kb SOG-DRAM for frame-memory-integrated displays,” in *SID Tech. Dig.*, 2005, pp. 1106-1109.

[1.59] Yong In Park, Tae Jun Ahn, Sung Ki Kim, Jae Yong Park, Juhn S. Yoo, Chang Yeon Kim, and Chang Dong Kim, “Active matrix OLED displays using simple poly-Si TFT process,” in *SID Tech. Dig.*, 2003, pp. 487-489.

[1.60] Katsuhiko Morosawa, Tsuyoshi Toyoshima, Minoru Kanbara, and Masayuki Kakegawa, “A novel poly-Si TFT current DAC circuit for AM-OLED displays,” in *AMLCD Tech. Dig.*, 2003, pp. 301-304.

[1.61] Kyoung Moon Lim, Kyungeon Lee, Juhn S. Yoo, Jin-Mo Yoon, Myoung Kee Baek, Jae-Sung Yoo, Young-Sik Jung, Joonkyu Park, Seok-Woo Lee, Hochul Kang, Chang-Dong Kim, and In-Jae Chung, “A 3.5 in. QVGA poly-Si TFT-LCD with integrated driver including new 6-bit DAC,” *Solid-State Electronics*, vol. 49, pp. 1107-1111, 2005.

[1.62] Xiaoyan Liu, Wei Sun, and Xudong Guan, “Design of integrated poly-Si TFT AMLCD,” in *SID Tech. Dig.*, 1996, pp. 167-171.

[1.63] P. E. Burrows, G. Gu, V. Bulovic, Z. Shen, S. R. Forrest, and M. E. Thompson,

“Achieving full-color organic light-emitting devices for lightweight, flat-panel displays,” *IEEE Trans. Electron Devices*, vol. 44, pp. 1188-1203, 1997.

[1.64] Janice K. Mahon, “History and status of organic light emitting device (OLED) technology for vehicular applications,” in *SID Tech. Dig.*, 2001, pp. 22-25.

[1.65] K. Mameno, R. Nishikawa, K. Suzuki, S. Matsumoto, T. Yamaguchi, K. Yoneda, Y. Hamada, H. Kanno, Y. Nishio, H. Matsuoka, Y. Saito, S. Oima, N. Mori, G. Rajeswaran, S. Mizukoshi, T. K. Hatwar, “Development of 2.2-inch full color AM-OLED display for mobile application,” in *Proceedings of International Display Workshops*, 2002, pp. 235-238.

[1.66] Kwan Hee Lee, Seoung-Yoo Ryu, Jang Hyuk Kwon, Sang Wook Kim, and Ho Kyoon Chung, “2.2” QCIF full color transparent AMOLED display,” in *SID Tech. Dig.*, 2003, pp. 104-107.



[1.67] C. W. Tang and S. A. Vanslyke, “Organic electroluminescent diodes,” *Appl. Phys. Lett.* vol. 51, pp. 913-915, 1987.

[1.68] Yih Chang, Mao-Kuo Wei, Chih-Ming Kuo, Shwu-Ju Shieh, Jiun-Haw Lee, and Chi-Chung Chen, “Manufacturing of passive matrix OLED-organic light emitting display,” in *SID Tech. Dig.*, 2001, pp. 1040-1043.

[1.69] M. T. Johnson, I. M. Hunter, N. D. Young, I. G. J. Camps, H. Lifka, and A. J. M. v. d. Biggelaar, “Active matrix polyLED displays,” in *Proceedings of International Display Workshops*, 2000, pp. 235-238.

[1.70] R. M. A. Dawson, and M. G. Kane, “Pursuit of active matrix organic light emitting diode displays,” in *SID Tech. Dig.*, 2001, pp. 372-375.

[1.71] R. M. A. Dawson, M.G. Kane, Z. Shen, D. A. Furst, S. Connor, J. Hsu, R. G. Stewart, A. Ipri, C. N. King, P. J. Green, R. T. Flegal, S. Pearson, W. A. Barrow, E. Dickey, K. Ping, S. Robinson, C. W. Tang and S. Van Slyke, F. Chen, J. Shi, J. C. Sturm, M. H. Lu, “Active matrix organic light emitting diode pixel design using polysilicon thin film

transistors,” *IEEE Lasers and Electro-Optics Society Annual Meeting*, 1998, pp. 128-129.

[1.72] I. M. Hunter, N. D. Young, M. T. Johnson, E. W. A. Young, “Design of an active matrix polymer-LED display with reduced horizontal cross talk,” in *Proceedings of International Display Workshops*, 1999, pp. 1095-1906.

[1.73] S. H. Ju, S. H. Yu, J. H. Kwon, H. D. Kim, B. H. Kim, S. C. Kim, H. K. Chung, M. S. Weaver, M. H. Lu, R. C. Kwong, M. Hack, and J. J. Brown, “High performance 2.2” QCIF full color AMOLED displays based on electrophosphorescence,” in *SID Tech. Dig.*, 2002, pp. 1096-1099.

[1.74] Tetsuo Urabe, “Technological challenge toward AM-OLED TV,” in *Proceedings of International Display Workshops*, 2003, pp. 251-254.

[1.75] Yasuo Nakamura, Hisao Ikeda, Hiroki Ohara, Tetsuji Ishitani, Yoshiharu Hirakata, Shumpei Yamazaki, Akira Ishii, Tetsuya Ohshima, Takashi Kodaira, Hideyuki Kawashima, and Kazuhiko Sato, “2.1-inch QCIF+ dual emission AMOLED display having transparent cathode electrode,” in *SID Tech. Dig.*, 2004, pp. 1403-1045.

[1.76] Chung-Wen Ko, Shuo-Hsiu Hu, Shi-Hao Li, Tiao-Hung Hsiao, Kuo-Sheng Lee, Che-Jen Chen, Jui-Hsing Chen, and Jiin-Jou Lih, “Development of full color double sided active matrix OLED,” in *Proceedings of International Display Workshops/Asia Display*, 2005, pp. 625-628.

[1.77] A. Kumar, K. Sakariya, P. Servati, S. Alexander, D. Striakhilev, K. S. Karim, A. Nathan, M. Hack, E. Wiams, and G. E. Jabbour, “Design considerations for active matrix organic light emitting diodes,” *IEEE Pooc.-Circuits Devices Syst.*, vol. 150, pp. 322-328, 2003.

[1.78] Jiin-Jou Lih, Chih-Feng Sung, Chun-Huai Li, Tiao-Hung Hsiao, and Hsin-Hung Lee, “Comparison of a-Si and poly-Si for AMOLEDs,” in *SID Tech. Dig.*, 2004, pp. 1504-1507.

- [1.79] Yong Kyun Lee, Kyu Man Kim, Jai Ii Ryu, Young Dong Kim, Keon Ho Yoo, Jin Jang, Ho Young Jeong, and Dong Jun Choo, “A comparison between a-Si:H TFT and poly-Si TFT for a pixel in AMOLED,” *Journal of the Korean Physical Society.*, vol. 39, pp. S291-S295, 2001.
- [1.80] Tatsuo Morita, “An overview of active matrix LCDs in business and technology,” in *AMLCD Tech. Dig.*, 1995, pp. 1-7.
- [1.81] Yojiro Matsueda, Satoshi Inoue, and Tatsuya Shimoda, “Concept of a system on panel,” in *Proceedings of International Display Workshops/Asia Display*, 2000, pp. 171-174.
- [1.82] Yoshiharu Nakajima, Yoshitoshi Kida, Masaki Murase, Yoshihiko Toyoshima, and Yasuhito Maki, “Latest development of “system-on-glass” with low temperature poly-Si TFT,” in *SID Tech. Dig.*, 2004, pp. 864-867.
- [1.83] T. Ikeda, Y. Shionoiri, T. Atsumi, A. Ishikawa, H. Miyake, Y. Kurokawa, K. Kato, J. Koyama, S. Yamazaki, K. Miyata, T. Matsuo, T. Nagai, Y. Hirayama, Y. Kubota, T. Muramatsu, and M. Katayama, “Full-functional system liquid crystal display using CG-Silicon technology,” in *SID Tech. Dig.*, 2004, pp. 860-863.
- [1.84] Takuya Matsuo, and Tetsuroh Muramatsu, “CG silicon technology and development of system on panel,” in *SID Tech. Dig.*, 2004, pp. 856-859.
- [1.85] Toshio Mizuki, Junko Shibata Matsuda, Yoshinobu Nakamura, Junkoh Takagi, and Toyonobu Yoshida, “Large domains of continuous grain silicon on glass substrate for high-performance TFTs,” *IEEE Trans. Electron Devices*, vol. 51, pp. 204-211, 2004.
- [1.86] Ken-ichi Takatori, Hiroyuki Sekine, Goro Saitoh, Kosshikhina Svetlana, Kazunori Masumura, Ken Sumiyoshi, Masao Imai, Tetsushi Sato, Yuko Sato, and Fujio Okumura, “A 1450-ppi field-sequential system-on-glass LCD capable of operating over a wide temperature range,” in *SID Tech. Dig.*, 2005, pp. 1182-1185.
- [1.87] P. J. G. van Lieshout, H. E. A. Huitema, E. van Veenendaal, L. R. R. Schrijnemakers, G. H. Gelinck, F. J. Touwslager, and E. Cantatore, “System-on-plastic with organic

electronics : A flexible QVGA display and integrated drivers,” in *SID Tech. Dig.*, 2004, pp. 1290-1293.

[1.88] C. S. Tan, W. T. Sun, S. H. Lu, C. H. Kuo, S. H. Yeh, I. T. Chang, C. C. Chen, Jargon Lee, and C. S. Yang, “A fully integrated poly-Si TFT-LCD adopting a novel 6-bit source driver and a novel DC-DC converter circuit,” in *SID Tech. Dig.*, 2004, pp. 1456-1459.

[1.89] C. S. Tan, W. T. Sun, S. H. Lu, C. H. Kuo, I. T. Chang, S. H. Yeh, C. C. Chen, Leon Liu, Y. C. Lin, and C. S. Yang, “A simple architecture for fully integrated 2.4” poly-Si TFT-LCD,” in *SID Tech. Dig.*, 2005, pp. 336-339.

[1.90] Ching-Wei Lin, and Yaw-Ming Tsai, “High-efficiency integrated charge pump circuits for poly-Si TFT-LCDs,” in *SID Tech. Dig.*, 2004, pp. 1085-1087.

[1.91] Yoshihiro Nonaka, Hiroshi Haka, Hiroshi Tsuchi, Youichi Kitagishi, Tadahiro Matsuzaki, Mitsuhiro Sugimoto, Hiroshi Hayama, and Hideki Asada, “A low-power SOG LCD with integrated DACs and a DC-DC converter for mobile applications,” in *SID Tech. Dig.*, 2004, pp. 1448-1451.

[1.92] Wei-Cheng Chen, Hsiao-Yi Lin, and Chaung-Ming Chiu, “A novel simple 2-phase clock of charge pump for LTPS integrated circuits,” in *SID Tech. Dig.*, 2005, pp. 272-275.

[1.93] Toshio Miyazawa, Kazutaka Goto, Atsushi Hasegawa, Masahiro Maki, Hideo Sato, Tetsuya Nagata, Makoto Ohkura, and Norio Mamba, “An improved dynamic ratio less shift register circuit suitable for LTPS-TFT LCD panels,” in *SID Tech. Dig.*, 2005, pp. 1050-1053.

[1.94] T. H. Hsieh, H. G. Wu, and J. P. Pang, “A novel shift register circuit design for LTPS application,” in *Proceedings of International Display Workshops*, 2003, pp. 503-506.

[1.95] Shih-Chin Lin, Hsiao-Yi Lin, Chaung-Ming Chiu, and Ya-Hsiang Tai, “A novel shift register driving scheme using PMOS TFT,” in *Proceedings of International Display Workshops*, 2003, pp. 495-497.

- [1.96] Woo-Jin Nam, Sang-Hoon Jung, Jae-Hoon Lee, Hye-Jin Lee, and Min-Koo Han, "A low-voltage p-type poly-Si integrated driving circuits for active matrix display," in *SID Tech. Dig.*, 2005, pp. 1046-1049.
- [1.97] Yoo-Chang Sung, Sun-Man So, Jong-Kee Kim, and Oh-Kyong Kwon, "10bit source driver with resistor-resistor-string digital to analog converter," in *SID Tech. Dig.*, 2005, pp. 1099-1101.
- [1.98] T. Nishibe, and N. Ibaraki, "Quite a new approach for system-on-glass technology based on low-temperature polycrystalline silicon," in *Proceedings of International Display Workshops*, 2003, pp. 359-362.
- [1.99] Alan G. Lewis, David D. Lee, and Richard H. Bruce, "Polysilicon TFT circuit design and performance," *IEEE Journal of Solid-State Circuits*, vol. 27, pp. 1833-1842, 1992.
- [1.100] Jung-Yeal Lee, Chul-Hi Han, and Choong-Ki Kim, "ECR plasma oxidation effects on performance and stability of polysilicon thin film transistors," in *IEDM Tech. Dig.*, 1994, pp. 523-526.
- 
- [1.101] Yukiharu Uraoka, Tomoaki Hatayama, Takashi Fuyuki, Tetsuya Kawamura, and Yuji Tsuchihashi, "Hot carrier effects in low-temperature polysilicon thin-film transistors," *Jpn. J. Appl. Phys. Part1*, vol. 40, pp. 2833-2836, 2001.
- [1.102] T. Yoshida, K. Yoshino, M. Takei, A. Hara, N. Sasaki, and T. Tsuchiya, "Experimental evidence of grain-boundary related hot-carrier degradation mechanism in low-temperature poly-Si thin-film-transistors," in *IEDM Tech. Dig.*, 2003, pp. 219-222.
- [1.103] Seok-Woo Lee, HoChul Kang, Kum Mi Oh, Eugene Kim, Soo-Jeong Park, Kyoung Moon Lim, Chang-Dong Kim, and In-Jae Chung, "Analysis of poly-Si TFTs' degradation behavior induced by DC stress," in *SID Tech. Dig.*, 2005, pp. 232-235.
- [1.104] Satoshi Inoue, Mutsumi Kimura, and Tatsuya Shimoda, "Investigation of hot carrier degradation due to AC stress in low temperature poly-Si TFTs," in *SID Tech. Dig.*, 2000, pp. 365-367.

## **Chapter 2:**

- [2.1] Toshiyuki Yoshida, Yoshiki Ebiko, Michiko Takei, Nobuo Sasaki, and Toshiaki Tsuchiya, “Grain-boundary related hot carrier degradation mechanism in low-temperature polycrystalline silicon thin-film transistors,” *Jpn. J. Appl. Phys. Part 1*, vol. 42, pp. 1999-2003, 2003.
- [2.2] T. Yoshida, K. Yoshino, M. Takei, A. Hara, N. Sasaki, and T. Tsuchiya, “Experimental evidence of drain-boundary related hot-carrier degradation mechanism in low-temperature poly-Si thin-film-transistors,” in *IEDM Tech. Dig.*, 2003, pp. 219-222.
- [2.3] C. A. Dimitriadis, M. Kimura, M. Miyasaka, S. Inoue, F. V. Farmakis, J. Brini, and G. Kamarinos, “Effect of grain boundaries on hot-carrier induced degradation in large grain polysilicon thin-film transistors,” *Solid-State Electronics*, vol. 44, pp. 2045-2051, 2000.
- [2.4] Jin-Woo Lee, Nae-In Lee, Sung-Hoi, and Chul-Hi Han, “Suppressed short-channel effects and improved stability in polysilicon thin film transistors with very thin ECR N<sub>2</sub>O-plasma gate oxide,” in *IEDM Tech. Dig.*, 1997, pp. 519-522.
- [2.5] Yung-Chun Wu, Chun-Yen Chang, Ting-Chang Chang, Po-Tsun Liu, Chi-Shen Chen, Chun-Hao Tu, Hsiao-Wen Zan, Ya-Hsiane Tai, and Simon Min Sze, “High performance and high reliability polysilicon thin-film transistors with multiple nano-wire channels,” in *IEDM Tech. Dig.*, 2004, pp. 777-780.
- [2.6] Jae-Hong Park, and Chul-Ju Kim, “A study on the fabrication of a multigate/multichannel polysilicon thin film transistor,” *Jpn. J. Appl. Phys. Part 1*, vol. 36, pp. 1428-1432, 1997.
- [2.7] I. H. Song, C. H. Kim, S. H. Kang, W. J. Nam, and M. K. Han, “A new multi-channel dual-gate poly-Si TFT employing excimer laser annealing recrystallization on

pre-patterned a-Si thin film,” in *IEDM Tech. Dig.*, 2002, pp. 561-564.

[2.8] Yung-Chun Wu, Ting-Chang Chang, Po-Tsun Liu, Chi-Shen Chen, Chun-Hao Tu, Hsiao-Wen Zan, Ya-Hsiang Tai, and Chun-Yen Chang, “Effects of channel width on electrical characteristics of polysilicon TFTs with multiple nanowire channels,” *IEEE Trans. Electron Devices*, vol. 52, pp. 2343-2346, 2005.

[2.9] Cheol-Min Park, Jae-Hong Jeon, and Min-Koo Han, “A novel polycrystalline silicon thin film transistor structure for improving hydrogenation effects,” *Solid-State Electronics*, vol. 42, pp. 185-187, 1998.

[2.10] Takashi Unagami, and Osamu Kogure, “Large on/off current ratio and low leakage current poly-Si TFT’s with multichannel structure,” *IEEE Trans. Electron Devices*, vol. 35, pp. 1986-1989, 1988.

[2.11] Takashi Unagami, “High-voltage poly-Si TFT’s with multichannel structure,” *IEEE Trans. Electron Devices*, vol. 35, pp. 2363-2367, 1988.

[2.12] Tatsuya Takeshita, Takashi Unagami, and Osamu Kogure, “Study on narrow-stripe polycrystalline silicon thin-film transistors,” *Jpn. J. Appl. Phys.*, vol. 27, pp. 1937-1941, 1988.

[2.13] Tatsuya Takeshita, Takashi Unagami, and Osamu Kogure, “Effects of ECR hydrogen-plasma treatment on narrow-stripe polycrystalline silicon thin-film transistors,” *Jpn. J. Appl. Phys.*, vol. 28, pp. L358-L360, 1989.

[2.14] I-Wei Wu, Tiao-Yuan Huang, Warren B. Jackson, Alan G. Lewis, and Anne Chiang, “Passivation kinetics of two types of defects in polysilicon TFT by plasma hydrogenation,” *IEEE Electron Device Lett.*, vol. 12, pp. 181-183, 1991.

[2.15] Michael Hack, Alan G. Lewis, and I-Wei Wu, “Physical models for degradation effects in polysilicon thin-film transistors,” *IEEE Trans. Electron Devices*, vol. 40, pp. 890-897, 1993.

[2.16] M. Koyanagi, H. Kurino, T. Hashimoto, H. Mori, K. Hata, Y. Hiruma, T. Fujimori,

I-Wei Wu, and A. G. Lewis, “Relation between hot-carrier light emission and kink effect in poly-Si thin-film transistors,” in *IEDM Tech. Dig.*, 1991, pp. 571-574.

[2.17] N. A. Hastas, C. A. Dimitriadis, F. V. Farmakis, and G. Kamarinos, “Effects of hydrogenation on the performance and stability of p-channel polycrystalline silicon thin-film transistors,” *Microelectronics Reliability*, vol. 43, pp. 671-674, 2003.

[2.18] Yoshihiro Morimoto, Yushi Jinno, Kyoko Hirai, Hidenori Ogata, Tutomu Yamada, and Kiyoshi Yoneda, “Influence of the grain boundaries and intragrain defects on the performance of poly-Si thin film transistors,” *Journal of Electrochem. Soc.*, vol. 144, pp. 2495-2501, 1997.

[2.19] M. Lee, and I. Lee, “Reducing the poly-Si TFT non-uniformity by transistor slicing,” *Journal of Information Display*, vol. 2, no.2, 2001

[2.20] Seiichiro Higashi1, Daisuke Abe, Kazuyuki Miyashita, Takahiro Kawamura, Satoshi Inoue and Tatsuya Shimoda, “Interface – The Key to High-Performance Poly-Si TFT Fabrication,” in *SID Tech. Dig.*, pp. 1302-1305, 2003.



## Chapter 3:

[3.1] G. Gu, and S. R. Forrest, “Design of flat-panel displays based on organic light-emitting devices,” *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 4, pp. 83-99, 1998.

[3.2] Arokia Nathan, Stefan Alexander, Kapil Sakariya, Peyman Servati, Sheng Tao, Denis Striakhilev, Anil Kumar, Sanjiv Sambandan, Shahin Jafarabadiashtiani, Yuri Vigranenko, Corbin Church, Jay Wzorek, and Paul Arsenault, “Extreme AMOLED backplane in a-Si with proven stability,” in *SID Tech. Dig.*, 2004, pp. 1508-1511.

[3.3] Yongtaek Hong, Jerzy Kanicki, and Reiji Hattori, “Novel poly-Si TFT pixel electrode

circuits and current programmed active-matrix driving methods for AM-OLEDs," in *SID Tech. Dig.*, 2002, pp. 618-621.

- [3.4] T. Shimoda, M. Kimura, S. Seki, H. Kobayashi, S. Kanbe, S. Miyashita, R. H. Friend, J. H. Burroughes, C. R. Towns, and I. S. Millard, "Technology for active matrix light emitting polymer displays," in *IEDM Tech. Dig.*, 1999, pp. 107-110.
- [3.5] Takashi Nanmoto, Hiroyuki Hara, Kasori Takahashi, Takahiro Iwashita, Hiroshi Hirayama, Hideyuki Kawai, Satoshi Inoue, and Tatsuya Shimoda, "Optimization of a time ratio gray scale method for OLED display," in *Proceedings of International Display Workshops*, 2003, pp. 263-266.
- [3.6] Yongtaek Hong, Jeong-Yup Nahm, and Jerry Kanicki, "200 dpi 4-a-Si:H TFTs current-driven AM-PLEDs," in *SID Tech. Dig.*, 2003, pp. 22-25.
- [3.7] Yi He, Reiji Hattori, and Jerzy Kanicki, "Current-source a-Si:H thin-film transistor circuit for active-matrix organic light-emitting displays," *IEEE Electron Device Lett.*, vol. 21, pp. 590-592, 2000.
- [3.8] Simon W-B. Tam, Yojiro Matsueda, Hiroshi Maeda, Mutsumi Kimura, Tatsuya Shimoda, and Piero Migliorato, "Improved polysilicon TFT drivers for light emitting polymer displays," in *Proceedings of International Display Workshops*, 2000, pp. 243-246.
- [3.9] Yung-Hui Yeh, Jun-Ren Shih, Chien-Ru Chen, Yen-Hsun Kuo, Yu-Lung Liu, Chun-Cheng Cheng, Chun-Fu Chung, Chun-Chi Chen, Chun-Yao Huang, Huai-Yuan Tseng, Tai-Hong Chen, and Ming-Daw Chen, "A uniform 10-inch color active-matrix OLED with new pixel driving circuit," in *Proceedings of International Display Workshops*, 2003, pp. 259-262.
- [3.10] Yen-Chung Lin, Han-Ping D. Shieh, Chia-Chen Su, Hojin Lee, and Jerzy Kanicki, "A novel current-scaling a-Si:H TFTs pixel electrode circuit for active-matrix organic light-emitting displays," in *SID Tech. Dig.*, 2005, pp. 846-849.
- [3.11] Yi He, Reiji Hattori, and Jerzy Kanicki, "Four-thin film transistor pixel electrode

circuits for active-matrix organic light-emitting displays," *Jpn. J. Appl. Phys. Part1*, vol. 40, pp. 1199-1208, 2001.

[3.12] Junichi Yamashita, Katsuhide Uchino, Tetsuro Yamamoto, Tatsuya Sasaoka, and Tetsuo Urabe, "New driving method with current subtraction pixel circuit for AM-OLED displays," in *SID Tech. Dig.*, 2005, pp. 1452-1455.

[3.13] Jung-Chun Tseng, Wein-Town Sun, Chien-Chih Chen, Shin-Hung Yeh, Hui-Ya Hung, Sabine Hopf, Chih-Feng Sung, Chun-Huai Li, Shin-Hung Li, Tiao-Hung Hsiao, Yi-Fan Wang, Jiin-Jou Lih, and Chien-Sheng Yang, "A new 6-bit digital-type current-driven AMOLED display employing an improving gray scale structure," in *SID Tech. Dig.*, 2004, pp. 1512-1515.

[3.14] S. One, Y. Kobayashi, K. Miwa, T. Tsujimura, "Pixel circuit for a-Si AM-OLED," in *Proceedings of International Display Workshops*, 2003, pp. 255-258.

[3.15] M. Kimura, H. Maeda, Y. Matsueda, S. Miyashita, T. Shimoda, S. W. B. Tam, P. Migliorato, J. H. Burroughes, C. R. Towns, and R. H. Friend, "Low-temperature poly-Si TFT driven light-emitting-polymer displays and digital gray scale for uniformity," in *Proceedings of International Display Workshops*, 1999, pp. 171-174.

[3.16] Mayumi Mizukami, Kazutaka Inukai, Hirokazu Yamagata, Toshimitsu Konuma, Takeshi Nishi, Jun Koyama, Shumpei Yamazaki, and Tetsuo Tsutsui, "6-bit digital VGA OLED," in *SID Tech. Dig.*, 2000, pp. 912-915.

[3.17] James L. Sanford, and Frank R. Libsch, "Vt compensated voltage-data a-Si TFT AMOLED pixel circuit," *Journal of the SID.*, vol. 12, pp. 65-73, 2004.

[3.18] Jae-Hoon Lee, Woo-Jin Nam, Sang-Hoon Jung, and Min-Koo Han, "Current programming pixel circuit and data-driver design for active-matrix organic light-emitting diodes," *Journal of the SID.*, vol. 12, pp. 227-231, 2004.

[3.19] M. Kimura, R. Nozawa, H. Maeda, Y. Matsueda, S. Inoue, S. Miyashita, T. Shimoda, H. Ohshima, S. W. B. Tam, P. Migliorato, J. H. Burroughes, C. R. Towns, and R. H. Friend,

“Low-temperature poly-Si TFT display using light-emitting-polymer,” in *AMLCD Tech. Dig.*, 2000, pp. 245-248.

[3.20] Jun Koyama, Kazutaka Inukai, Junya Maruyama, Toshimitsu Konuma, and Shumpei Yamazaki, “Active matrix display by time gray scale method,” in *AMLCD Tech. Dig.*, 2000, pp. 253-256.

[3.21] Kazutaka Inukai, Hajime Kimura, Mayumi Mizukami, Junya Maruyama, Satoshi Murakami, Jun Koyama, Toshimitsu Konuma, and Shumpei Yamazaki, “4.0-in. TFT-OLED displays and a novel digital driving method,” in *SID Tech. Dig.*, 2000, pp. 924-927.

[3.22] Joon-Chul Goh, Hoon-Ju Chung, Jin Jang, and Chul-Hi Han, “A new pixel circuit for active matrix organic light emitting diodes,” *IEEE Electron Device Lett.*, vol. 23, pp. 544-546, 2002.

[3.23] S. Ono, Y. Kobayashi, K. Miwa, T. Tsujimura, “Pixel circuit for a-Si AM-OLED,” in *Proceedings of International Display Workshops*, 2003, pp. 255-258.

[3.24] Sang-Moo Choi, Oh-Kyong Kwon, and Ho-Kyun Chung, “An improved voltage programmed pixel structure for large size and high resolution AM-OLED displays,” in *SID Tech. Dig.*, 2004, pp. 260-263.

[3.25] Sang-Hoon Jung, Woo-Jin Nam, and Min-Koo Han, “A new voltage modulated AMOLED pixel design compensating threshold voltage variation of poly-Si TFTs,” in *SID Tech. Dig.*, 2002, pp. 622-624.

[3.26] Sang-Hoon Jung, Woo-Jin Nam, and Min-Koo Han, “A new voltage-modulated AMOLED pixel design compensating for threshold voltage variation in poly-Si TFTs,” *IEEE Electron Device Lett.*, vol. 25, pp. 690-692, 2004.

[3.27] Yu-Wu Wang, Shin Mao Huang, Feng-Yu Chuang, Chien-Ru Chen, Wen, Chun Wang, “A new pixel design for improving the uniformity on active matrix OLED,” in *Proceedings of Asia Display/International Display Workshops*, 2001, pp. 323-326.

- [3.28] Joo-Han Kim and Jerzy Kanicki, “200 dpi 3-a-Si:H TFTs voltage-driven AM-PLEDs,” in *SID Tech. Dig.*, 2003, pp. 18-21.
- [3.29] Simon W.-B. Tam, and Tatsuya Shimoda, “Modelling and design of polysilicon drive circuits for OLED displays,” in *SID Tech. Dig.*, 2004, pp. 1406-1409.
- [3.30] Ji-Hoon Kim, Jae-Hoon Lee, Woo-Jin Nam, Bong-Hyun You, and Min-Koo Han, “A new AMOLED pixel design compensating threshold voltage degradation of s-Si:H TFTs and OLED,” in *Proceedings of International Display Workshops*, 2004, pp. 531-534.
- [3.31] Jae-Hoon Lee, Bong-Hyun You, Woo-Jin Nam, Hye-Jin Lee and, Min-Koo Han, “A new a-Si: H TFT pixel design compensating threshold voltage degradation of TFT and OLED,” in *SID Tech. Dig.*, 2004, pp. 264-267.
- [3.32] Joon-Chul Goh, Jin Jang, Kyu-Sik Cho, and Choong-Ki Kim, “A new a-Si:H thin -film transistor pixel circuit for active-matrix organic light-emitting diodes,” *IEEE Electron Device Lett.*, vol. 24, pp. 583-585, 2003.
- [3.33] Joon-Chul Goh, Choong-Ki Kim, and Jin Jang, “A new pixel circuit for active-matrix organic light-emitting diodes,” in *SID Tech. Dig.*, 2003, pp. 494-497.
- [3.34] Dechun Zou, Masayuki Yahiro, and Tetsuo Tsutsui, “Improvement of current-voltage characteristics in organic light emitting diodes by application of reversed-bias voltage,” *Jpn. J. Appl. Phys.*, vol. 37, pp. L1406-L1408, 1998.
- [3.35] Si Yujuan, Zhao Yi, Chen Xinfu, and Liu Shiyong, “A simple and effective ac pixel driving circuit for active matrix OLED,” *IEEE Trans. on Electron Devices*, vol. 50, pp. 1137-1140, 2003.
- [3.36] James L. Sanford, and Frank R. Libsch, “TFT AMOLED pixel circuits and driving methods,” in *SID Tech. Dig.*, 2003, pp. 10-13.
- [3.37] Yen-Chung Lin, and Han-Ping D. Shieh, “Improvement of brightness uniformity by AC driving scheme for AMOLED display,” *IEEE Electron Device Lett.*, vol. 25, pp. 728-730, 2004.

[3.38] R. M. A. Dawson, Z. Shen, D. A. Furst, S. Connor, J. Hsu, M. G. Kane, R. G. Stewart, A. Ipri, C. N. King, P. J. Green, R. T. Flegal, S. Pearson, W. A. Barrow, E. Dickey, K. Ping, S. Robinson, C. W. Tang, S. Van Slyke, F. Chen, J. Shi, M. H. Lu, and J. C. Sturm, “The impact of the transient response of organic light emitting diodes on the design of active matrix OLED displays,” in *IEDM Tech. Dig.*, 1998, pp. 875-878.

[3.39] Tatsuya Sasaoka, Mitsunobu Sekiya, Akira Yumoto, Jiro Yamada, Takashi Hirano, Yuichi Iwase, Takao Yamada, Tadashi Ishibashi, Takao Mori, Mitsuru Asano, Shinichiro Tamura, and Tetsuo Urabe, “A 13.0-inch AM-OLED display with top emitting structure and adaptive current mode programmed pixel circuit (TAC),” in *SID Tech. Dig.*, 2001, pp. 384-387.

[3.40] Bong-Hyun You, Woo-Jin Nam, Jae-Hoon Lee, Chang-Wook Han, and Min-Koo Han, “Polarity-balanced driving to reduce V<sub>th</sub> shift in a-Si for active-matrix OLEDs,” in *SID Tech. Dig.*, 2004, pp. 272-275.

[3.41] Hajime Akimoto, Hiroshi Kageyama, Yoshiteru Shimizu, Hiroki Awakura, Shigeyuki Nishitani, and Toshihiro Sato, “An innovative pixel-driving scheme for 64-level gray-scale full-color active matrix OLED displays,” in *SID Tech. Dig.*, 2002, pp. 972-975.

[3.42] Hiroshi Kageyama, Hajime Akimoto, Takayuki Ouchi, Naruhiko Kasai, Hiroki Awakura, Naoki Tokuda, and Toshihiro Sato, “A 3.5-inch OLED display using a 4-TFT pixel circuit with an innovative pixel driving scheme,” in *SID Tech. Dig.*, 2003, pp. 96-99.

[3.43] Hiroshi Kageyama, Hajime Akimoto, Takayuki Ouchi, Naruhiko Kasai, Hiroki Awakura, Naoki Tokuda, Kenta Kajiyama, and Toshihiro Sato, “A 2.5-inch OLED display with a three-TFT pixel circuit for clamped inverter driving,” in *SID Tech. Dig.*, 2004, pp. 1394-1397.

[3.44] Naruhiko Kasai, Hiroki Awakura, Hajime Akimoto, Hiroshi Kageyama, Toshihiro Sato,

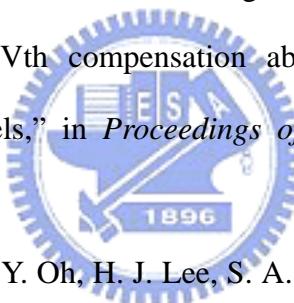
and Naoki Tokuda, “A color balance control system for OLED with clamped inverter driving,” in *SID Tech. Dig.*, 2004, pp. 1394-1397.

[3.45] Hajime Akimoto, Hiroshi Kageyama, Yoshiteru Shimizu, Hiroki Awakura, Naruhiko Kasai, Naoki Tokuda, and Toshihiro Sato, “Two TFT pixel circuit with non-uniformity suppress-function for voltage programming active matrix OLED displays,” in *SID Tech. Dig.*, 2005, pp. 1550-1553.

[3.46] Won-Kyu Kwak, Kwan-Hee Lee, June-Young Song, Ki-Myeong Eom, Yang-Wan Kim, Sung-Cheon Park, Young-Jong Park, Sun-Hwa Kim, Choon-Yul Oh, Naoaki Komiya, and Byung-Hee Kim, “A 1.8-in. QVGA AMOLED display with new driving method and ultra slim technology,” in *SID Tech. Dig.*, 2005, pp. 1448-1451.

[3.47] N. Komiya, C. Y. Oh, K. M. Eom, J. T. Jeong, H. K. Chung, S. M. Choi, and O. K. Kwon, “Compensation of V<sub>th</sub> compensation ability among voltage programming circuits for AMOLED panels,” in *Proceedings of International Display Workshops*, 2003, pp. 275-278.

[3.48] W. K. Kwak, K. H. Lee, C. Y. Oh, H. J. Lee, S. A. Yang, H. E. Shin, and H. K. Chung, “A 5.0-in WVGA AMOLED display for PDAs,” in *SID Tech. Dig.*, 2003, pp. 100-103.



## Chapter 4:

[4.1] Yeh-Jiun Tung, Richard Hewitt, Anna Chwang, Michael Hack, Julie Brown, Kyu-Man Kim, Dae Suk Kim, Ji Ho Hur, and Jin Jang, “A 200-dpi transparent a-Si TFT Active-Matrix Phosphorescent OLED display,” in *SID Tech. Dig.*, 2005, pp. 1546-1549.

[4.2] A. Nathan, P. Servati, K. S. Karim, D. Striakhilev, and A. Sazonov, “Thin film transistor integration on glass and plastic substrates in amorphous silicon technology,” *IEEE Proc.-Circuits Devices Syst.*, vol. 150, pp. 329-338, 2003.

[4.3] Arokia Nathan, Kapi Sakariya, Anil Kumar, Peyman Servati, Karim S. Karim, Denis

Striakhilv, Andrei Sazonov, “Amorphous silicon TFT circuit integration for OLED displays on glass and plastic,” in *IEEE Custom Integrated Circuits Conference*, 2003, pp. 215-221.

[4.4] P. Servati, S. Prakash, A. Nathan, and Christoph Py, “Amorphous silicon driver circuits for organic light-emitting displays,” *J. Vac. Sci. Technol.*, 2002, pp. 1374-1378.

[4.5] C. C. Wu, S. D. Thesis, G. Gu, M. H. Lu, J. C. Sturm, S. Wagner, and S. R. Forrest, “Integration of organic LED’s and amorphous Si TFT’s onto flexible and lightweight metal foil substrates,” *IEEE Electron Device Lett.*, vol. 18, pp. 609-612, 1997.

[4.6] Ameen K Saafir, Jinkoo Chung, Insu Joo, Jongmoo Huh, Jungsoo Rhee, Seungkyu Park, Bemrak Choi, Cunseok Ko, Byungsik Koh, Jaehoon Jung, JoonHoo Choi, Namdeog Kim, Kyuha Chung, Gordana Srđanov, Charlie MacPherson, Nugent Truong, Matthew Stevenson, Andrew Johnson, Peter Chen, Terri Cardellino, Ray Pflanzer, Gang Yu, Alberto Goenaga, Marie O’Regan, and Dalen Keys, “A 14.1” WXGA solution processed OLED display with a-Si TFT,” in *SID Tech. Dig.*, 2005, pp. 968-971.

[4.7] A. Nathan, P. Servati, and K. S. Karim, “TFT circuit integration in a-Si:H technology,” in *Proc. International Conference on Microelectronics*, 2002, pp. 115-124.

[4.8] Yi He, Reiji Hattori, and Jerzy Kanicki, “Improved a-Si:H TFT pixel electrode circuits for active-matrix organic light emitting displays,” *IEEE Trans. Electron Devices*, vol. 48, pp. 1322-1325, 2001.

[4.9] J. A. Nichols, T. N. Jackson, M. H. Lu, and M. Jack, “a-Si:H TFT active-matrix phosphorescent OLED pixel,” in *SID Tech. Dig.*, 2002, pp. 1368-1371.

[4.10] Jae-Hoon Lee, Woo-Jin Nam, Sang-Hoon Jung, and Min-Koo Han, “5-TFTs pixel circuit design for active matrix organic light emitting diode compensating the non-uniformity of poly-Si TFTs and OLEDs,” in *Proceedings of International Display Workshops*, 2003, pp. 279-282.

[4.11] D. Fish, N. Young, M. Childs, W. Steer, D. George, D. McCulloch, S. Godfrey, M.

Trainer, M. Johnson, A. Giraldo, H. Lifka, and I. Hunter, “A comparison of pixel circuits for active matrix polymer/organic LED displays,” in *SID Tech. Dig.*, 2002, pp. 968-971.

[4.12] S. K. Bhowmick, and B. Mazhari, “An improved four circuit for active-matrix organic light emitting diode (OLED) display,” in *SID Tech. Dig.*, 2002, pp. 606-609.

[4.13] Yenchung Lin, Han-Ping D. Shieh, An Shih, and Yaw-Ming Tsai, “A novel current memory circuit for active matrix organic light emitting display,” in *SID Tech. Dig.*, 2003, pp. 746-749.

[4.14] I. M. Hunter, N. D. Young, “Active matrix addressing of polymer light emitting diodes using low temperature poly silicon TFTs,” in *AMLCD Tech. Dig.*, 2000, pp. 249-252.

[4.15] Takashi Chuman, Satoru Ohta, Satoshi Miyaguchi, Hideo Satoh, Takahisa Tanabe, Yoshiyuki Okuda, and Masami Tsuchida, “Active matrix organic light emitting diode panel using organic thin-film transistors,” in *SID Tech. Dig.*, 2004, pp. 45-47.

[4.16] Yong-Hoon Kim, Dae-Gyu Moon, and Jeong-In Han, “Organic TFT array on a paper substrate,” *IEEE Electron Device Lett.*, vol. 25, pp. 702-704, 2004.

[4.17] W. A. MacDonald, K. Rollins, D. MacKerron, R. Eveson, R. A. Rustin, K. Rakos, and M. Handa, “Plastic displays – latest development in polyester film for plastic electronics,” in *SID Tech. Dig.*, 2004, pp. 420-423.

[4.18] Karl Amundson, Jay Ewing, Peter Kazlas, Ray McCarthy, J. D. Albert, Robert Zehner, Paul Drzaic, John Rogers, Zhenan Bao, and Kirk Baldwin, “Flexible, active-matrix display constructed using a microencapsulated electrophoretic material and an organic-semiconductor-based backplane,” in *SID Tech. Dig.*, 2001, pp. 160-163.

[4.19] D. J. Gundlach, Y.-Y. Lin, and T. N. Jackson, “Pentacene organic thin-film transistor-molecular ordering and mobility,” *IEEE Electron Device Lett.*, vol. 18, pp. 87-89, 1997.

[4.20] Gordon Yip, Reiji Hattori, and Shintarou Sugimoto, “Single DAC current delivery system for driving AMOLED panel with increased pixel uniformity,” in *SID Tech. Dig.*,

2005, pp. 434-437.

[4.21] Hai-Jung In, Pyong-Su Kwag, Jin-Sung Kang, Oh-Kyong Kwon, and Ho-Kyoong Chung, “A novel voltage-sensing and voltage-programming method for large-size and high resolution AMOLED panels,” in *Proceedings of International Display Workshops/Asia Displays*, 2005, pp. 633-636.

## Chapter 5:

[5.1] Yoo-Chang Sung, Sun-Man So and Jong-Kee Kim, “10bit Source Driver with Resistor-Resistor-String Digital to Analog Converter,” in *SID Tech. Dig.*, pp. 1099-1101, 2005.

[5.2] Y. Aoki, T. Iizuka, S. Sagi, M. Karube, T. Tsunashima, S. Ishizawa, K. Ando, H. Sakurai, T. Ejiri, T. Nakazono, M. Kobayashi, H. Sato, N. Ibaraki, M. Sasaki and N. Harada, “A 10.4-in. XGA Low-Temperature Poly-Si TFT-LCD for Mobile PC Applications,” in *SID Tech. Dig.*, pp. 196-199, 1999.

[5.3] Yoshihiro Nonaka, Hiroshi Haga, Hiroshi Tsuchi, Youichi Kitagishi, Tadahiro Matsuzaki, Mitsuhiro Sugimoto, Hiroshi Hayama and Hideki Asada, “A Low-Power SOG LCD with Integrated DACs and a DC-DC Converter for Mobile Applications,” in *SID Tech. Dig.*, pp. 1148-1451, 2004.

[5.4] Woo-Jin Nam, Sang-Hoon Jung, Jae-Hoon Lee, Hye-Jin Lee and Min-Koo Han, “A Low-Voltage P-type Poly-Si Integrated Driving Circuits for Active Matrix Display,” in *SID Tech. Dig.*, pp. 1046-1049, 2005.

[5.5] Hye-Jin Lee, Woo-Jin Nam, Jae-Hoon Lee, Sang-Myeon Han and Min-Koo Han, “Highly Efficient DC-DC Converter Employing P-type Poly-Si TFTs for Active Matrix Displays,” in *IDW/AD*, pp. 1231-1232, 2005.

[5.6] Shin-Hung Yeh, Wein-Town Sun, Chien-Chih Chen and Chien-Sheng Yang, “A Novel

Integrated DC-DC Converter Using LTPS TFT," in *SID Tech. Dig.*, pp. 1442-1445, 2005.

[5.7] J. Jeon, O. K. Kwon and I. Lee, "A New Digital Driving Scheme for Poly-Si TFT-LCD Panels," *ASIA DISPLAY*, pp. 425-428, 1998.

[5.8] Rui Itou, Masanori Kayama and Takeshi Shima, "Some analog building blocks for TFT circuits," *IEEE MWSCAS*, vol.1, pp.417-420, 2001.

[5.9] Hoon-Ju Chung, Seung-Woo Lee, and Chul-Hi Han, "Poly-Si TFT push-pull analogue buffer for integrated data drivers of poly-Si TFT-LCDs," *Electronics Letters*, vol. 37, pp. 1093-1095, 2001.

[5.10] Y. Kida, Y. Nakajima, M. Takatoku, M. Minegishi, S. Nakamura, Y. Maki and T. Maekawa, "A 3.8 inch half-VGA transreflective color TFT-LCD with completely integrated 6-bit RGB parallel interface drivers," in *EURODISPLAY*, 2002, pp. 831-834.

[5.11] Sang-Hoon Jung, Joong-Hyun Park, Chang-Wook Han, and Min-Koo Han, "New source follower type analog buffers using poly-Si TFTs for active matrix displays," in *SID Tech. Dig.*, 2004, pp. 1452-1455.

## Chapter 6:

[6.1] Kook Chul Moon, In-Hyuk Song, Bong-Hyun You, Ji-Hoon Kim, and Min-Koo Han, "DAC (digital-analog converter) and output buffer for AM-LCD employing poly-Si TFT," in *Proceedings of International Display Workshops*, 2003, pp. 487-490.

[6.2] Ming-Dou Ker, Chih-Kang Deng, and Ju-Lin Huang, "On-panel design technique of threshold voltage compensation for output buffer in LTPS technology," in *SID Tech. Dig.*, 2005, pp. 288-291.

[6.3] Chih-Wen Lu, and Chung Len Lee, "A low-power high-speed class-AB buffer amplifier for flat-panel-display application," *IEEE Transactions on Very Large Integration (VLSI)*

*Systems*, vol. 10, pp. 163-168, 2002.

- [6.4] Chih-Wen Lu, “A new rail-to-rail driving scheme and a low-power high-speed output buffer amplifier for AMLCD column driver application,” in *IEEE International Symposium on Circuits and Systems*, 2003, pp. I229-I232.
- [6.5] Chih-Wen Lu, “High-speed driving scheme and compact high-speed low-power rail-to-rail class-B buffer amplifier for LCD applications,” *IEEE J. Solid State Circuits*, vol. 39, pp. 1938-1947, 2004.
- [6.6] Tetsuro Itakura, Hironori Minamizaki, Tetsuya Saito, and Tadashi Kuroda, “A 402-output TFT-LCD driver IC with power control based on the number of colors selected,” *IEEE J. Solid State Circuits*, vol. 38, pp. 503-510, 2003.
- [6.7] Ching-Wei Lin, Du-Zen Peng, Ryan Lee, Yi-Fan Shih, Chung-Kuei Jan, Meng-Hsun Hsieh, Shih-Chang Chang, and Yaw-Ming Tsai, “Advanced poly-Si device and circuitry for AMOLED and high-integration AMLCD,” in *International Display Manufacturing Conference*, 2005, pp. 315-318.
- [6.8] Kh. Hadidi, and A. Khoei, “A highly linear cascode-driver CMOS source-follower buffer,” in *Proceedings of the IEEE International Conference on Electronics, Circuits, and Systems*, 1996, pp. 1243-1246.
- [6.9] Woo-Jin Nam, Hee-Sun Shin, Won-Kyu Lee, Sanq-Geun Park, Min-Koo Han, “Offset canceling scheme of p-type poly-Si analog buffer employing voltage level-shifter,” in *Proceedings of International Display Workshops/Asia Display*, 2005, pp. 1209-1210.
- [6.10] Pang-Cheng Yu, and Jiin-Chuan Wu, “A class-B output buffer for flat-panel-display column driver,” *IEEE J. Solid State Circuits*, vol. 34, pp. 116-119, 1999.
- [6.11] Sang-Hoon Jung, Chang-Wook Han, In-Hyuk Song and Min-Koo Han, “A new poly-Si analog buffer using source follower for active matrix displays,” in *Proceedings of International Display Workshops*, 2003, pp. 1683-1684.
- [6.12] Yong-Su Yoo, Jin-Young Choi, Hyun-Sook Shim, and Oh-Kyong Kwon, “A high

accurate analog buffer circuit using low temperature poly-Si TFT,” in *SID Tech. Dig.*, 2004, pp. 1460-1463.

- [6.13] C. Yoo, D.-J. Kim, and K.-L. Lee, “Threshold voltage and mobility mismatch compensated analogue buffer for poly-Si TFT-LCDs,” *Electronics Letters*, vol. 41, pp. 65-66, 2005.

## Chapter 8

[8.1] Vikas Rana, Ryoichi Ishihara, Yasushi Hiroshima, Daisuke Abe, Satoshi Inoue, Tatsuya Shimoda, Wim Metselaar, and Kees Beenakker, “Dependence of single-crystalline Si TFT characteristics on the channel position inside a location-controlled grain,” *IEEE Trans. Electron Devices*, vol. 52, pp. 2622-2628, 2005.

[8.2] Tien-Fu Chen, Ching-Fa Yeh, and Jen-Chung Lou, “Investigation of grain boundary control in the drain junction on laser-crystallized poly-Si thin film transistors,” *IEEE Electron Device Lett.*, vol. 24, pp. 457-459, 2003.

[8.3] Hideya Kumomi, Chihiro Shin, Gou Nakagawa, and Tanemasa Asano, “Single-grain TFTs on location-controlled crystal grains formed by excimer laser crystallization of Si thin films,” in *IEDM Tech. Dig.*, 2004, pp. 773-776.

[8.4] Mitsuharu Tai, Mutsuko Hatano, Shinya Yamaguchi, Takeshi Noda, Seong-Kee Park, Takeo Shiba, and Makoto Ohkura, “Performance of poly-Si TFTs fabricated by SELAX,” *IEEE Trans. Electron Devices*, vol. 51, pp. 934-939, 2004.

[8.5] Karim S. Karim, Arokia Nathan, and John Alan Rowlands, “Amorphous silicon active pixel sensor readout circuit for digital imaging,” *IEEE Trans. Electron Devices*, vol. 50, pp. 200-208, 2003.

[8.6] Zhong-Shou Huang, Takao Ando, “A novel amplified image sensor with a-Si:H photoconductor and MOS transistors,” *IEEE Trans. Electron Devices*, vol. 37, pp.

1432-1438, 1990.

- [8.7] E. Fortunato, F. Soares, G. Lavareda, and R. Martins, “A new linear array thin film position sensitive detector (LTFPSD) for 3D measurements,” in *Proc. Mat. Res. Soc. Symp.*, vol. 377, 1995, pp. 797–802.
- [8.8] J. P. Lu, P. Mei, R. T. Fulks, J. Rahn, J. Ho, Y. Wang, J. B. Boyce, and R. A. Street, “Excimer laser processing for a-Si and poly-Si thin film transistors for image applications,” *J. Vac. Sci. Technol. A*, vol. 18, pp. 1823-1829, 2000
- [8.9] Karim S. Karim, Arokia Nathan, and John Alan Rowlands, “Active pixel sensor architectures in a-Si:H for medical imaging,” *J. Vac. Sci. Technol. A*, vol. 20, pp. 1095-1099, 2002
- [8.10] Yavuz Degerli, Francis Lavernhe, Pierre Magnan, and Jean A. Farre, “Analysis and reduction of signal readout circuitry temporal noise in CMOS image sensors for low-light levels,” *IEEE Trans. Electron Devices*, vol. 47, pp. 949-962, 2000.
- [8.11] Karim S. Karim, and Arokia Nathan, “Readout circuit in active pixel sensors in amorphous silicon technology,” *IEEE Electron Device Lett.*, vol. 22, pp. 469-471, 2001.
- [8.12] J. P. Lu, K. Van Schuylenbergh, J. Ho, Y. Wang, J. B. Boyce, and R. A. Street, “Flat panel imagers with pixel level amplifiers based on polycrystalline silicon thin-film transistor technology,” *Appl. Phys. Lett.*, vol. 18, pp. 4656-4658, 2002
- [8.13] Sunetra Mendis, Sabrina E. Kemeny, and Eric R. Fossum, “CMOS active pixel image sensor,” *IEEE Trans. Electron Devices*, vol. 41, pp. 452-453, 1994.
- [8.14] M. Maolinbay, Y. El-Mohri, L. E. Antonuk, K.-W. Jee, S. Nassif, X. Rong, and Q. Zhao, “Additive noise properties of active matrix flat-panel imagers,” *Med. Phys.*, vol. 27, pp. 1841-1854, 2000