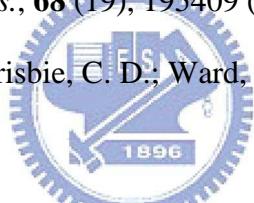


## References

### Chapter 1

1. J. E. Lilienfeld, US Patent 1 745 175 (1930)
2. D. Kahng, M. M. Atalla, *IRE Solid-State Devices Research Conference*, Carnegie Institute of Technology, Pittsburgh, PA (1960)
3. D. F. Barbe, C. R. Westgate, *J. Phys. Chem. Solids.*, **31**, 2679 (1970)
4. M. L. Petrova, L. D. Rozenshtein, *Fiz. Tverd. Tela, Sov. Phys. D. SolidState*, **12**, 961 (1970)
5. F. Ebisawa, T. Kurokawa, S. Nara, *J. Appl. Phys.*, **54**, 3255 (1983)
6. G. Lucovsky, R. J. Nemanich, and J. C. Knights, *Phys. Rev. B* **19**, 2064 - 2073 (1979)
7. Campbell, R. B.; Robertson, J. M.; Trotter, J. *Acta Crystallogr.*, **15** (3), 289 (1962)
8. olmes, D.; Kumaraswamy, S.; Matzger, A. J.; Vollhardt, K. P.C., *Chem. Eur. J.*, **5** (11), 3399 (1999)
9. Mattheus, C. C.; Dros, A. B.; Baas, J.; Meetsma, A.; de Boer, J.L.; Palstra, T. T. M., *Acta Crystallogr. Sect. C: Cryst. Struct. Commun.*, **57**, 939 (2001)
10. Della Valle, R. G.; Venuti, E.; Brillante, A.; Girlando, A. *J. Chem. Phys.*, **118** (2), 807 (2003)
11. Laquindanum, J. G.; Katz, H. E.; Lovinger, A. J.; Dodabalapur, A. *Chem. Mater.*, **8** (11), 2542 (1996)
12. Shtein, M.; Mapel, J.; Benziger, J. B.; Forrest, S. R. *Appl. Phys. Lett.*, **81** (2), 268 (2002)
13. Knipp, D.; Street, R. A.; Volkel, A.; Ho, J. *J. Appl. Phys.*, **93** (1), 347 (2003)
14. Ricardo Ruiz, Devashish Choudhary, Bert Nickel, Tullio Toccoli, Kee-Chul Chang, Alex C. Mayer, Paulette Clancy, Jack M. Blakely, Randall L. Headrick,

- Salvatore Iannotta, and George G. Malliaras, *Chem. Mater.*, **16**, 4497-4508 (2004)
15. Silinsh, E. A. *Organic Molecular Crystals. Their Electronic States*.  
(Springer-Verlag: Berlin, 1980)
16. Karl, N. *Synth. Met.*, **649**, 133-134 (2003)
17. Laquindanum, J. G.; Katz, H. E.; Lovinger, A. J.; Dodabalapur, A. *Chem. Mater.*, **8** (11), 2542 (1996)
18. Minakata, T.; Imani, H.; Ozaki, M.; Saco, K. *J. Appl. Phys.*, **72** (11), 5220 (1992)
19. Meyer Zu Heringdorf, F.-J.; Reuter, M. C.; Tromp, R. M., *Nature*, **412**, 517  
(2001)
20. Kang, J. H.; Zhu, X. Y. *Appl. Phys. Lett.*, **82** (19), 3248 (2003)
21. Verlaak, S.; Steudel, S.; Heremans, P.; Janssen, D.; Deleuze, M. S. *Phys. Rev. B: Condens. Matter Mater. Phys.*, **68** (19), 195409 (2003)
22. Fritz, S. E.; Martin, S. M.; Frisbie, C. D.; Ward, M. D.; Toney, M. F. *J. Am. Chem. Soc.*, **126** (13), 4084 (2004)
- 
23. Drummy, L. F.; Miska, P. K.; Martin, D. C. Crystal structure of and defects in the pentacene thin film phase. In *Polymer/Metal Interfaces and Defect Mediated Phenomena in Ordered Polymers: Symposia; Mater. Res. Soc. Symposium Proceedings* Vol. **734**; Manias, E., Malliaras, G. G., Eds.; Materials Research Society: Warrendale, PA, 397-401 (2003)
24. Bouchoms, I. P. M.; Schoonveld, W. A.; Vrijmoeth, J.; Klapwijk, T. M. *Synth. Met.*, **104** (3), 175 (1999)
25. Bao, Z.; Rogers, J. A.; Katz, H. E. *J. Mater. Chem.*, **9**, 1895-1904 (1999)
26. Tsumura, A.; Koezuka, H.; Ando, T. *Appl. Phys. Lett.*, **49**, 1210-1212 (1986)
27. Chen, X. L.; Bao, Z.; Lovinger, A. J.; Lin, Y. Y.; Crone, B.; Dodabalapur, A.; Batlogg, B. *Appl. Phys. Lett.*, **78**, 228-230 (2001)
28. Park, S. K.; Kim, Y. H.; Han, J. I.; Moon, D. G.; Kim, W. K.; Kwak, M. G. *Synth. Met.*

*Met.*, **139**, 377-384 (2003)

29. Michaelis, W.; Kelting, C.; Hirth, A.; Wohrle, D.; Schlettwein, D. *Macromol. Symp.*, **212**, 299-305 (2004)
30. Cui, T. H.; Liang, G. R.; Varahramyan, K. *IEEE Trans. Electron Devices*, **50**, 1419-1422 (2003)
31. Liang, G. R.; Cui, T. H.; Varahramyan, K. *Microelectron. Eng.*, **65**, 279-284 (2003)
32. Darhuber, A. A.; Troian, S. M.; Wagner, S. *J. Appl. Phys.*, **90**, 3602 (2001)
33. Delamarche, E.; Geissler, M.; Magnuson, R. H.; Schmid, H.; Michel, B. *Langmuir*, **19**, 5892 (2003)
34. Decré, M. M. J.; Schneider, R.; Burdinski, D.; Schellekens, J.; Saalmink, M.; Dona, R., *Mater. Res. Soc. Symp. Proc.*, EXS- 2, M4.9. (2003)
35. Kymmissis, I.; Dimitrakopoulos, C. D.; Purushothaman, S., *IEEE Trans. Electron Devices*, **48**, 1060-1064 (2001)
36. Janos Veres, Simon Ogier, and Giles Lloyd, *Chem. Mater.*, **16**, 4543-4555 (2004)
37. Sirringhaus, H.; Wilson, R. J.; Friend, R. H.; Inbasekaran, M.; Wu, W.; Woo, E. P., *Appl. Phys. Lett.*, **77**, 406-408 (2000)
38. Gong Gu, Michael G. Kane, James E. Doty, and Arthur H. Firester, *Appl. Phys. Lett.* **87**, 243512 (2005)
39. Frank-J. Meyer zu Heringdorf, M. C. Reuter & R. M. Tromp, *Nature*, **412**, 517-520 (2001)
40. J. Veres, S. Ogier, G. Floyd and D. de Leeuw, *Chem. Mater.*, **16**, 4543 (2004)
41. E. Färm, M. Kemell \*, M. Ritala, M. Leskelä, *Chemical Vapor Deposition*, **12**, 415 (2006)
42. US Patent, **USPTO Application #:** 20090001353, *Heteropyrene-based semiconductor materials for electronic devices and methods of making the same*

43. Kosbar, L. L.; Dimitrakopoulos, C. D.; Mascaro, D., *J. Mater. Res.Soc. Symp. Proc.*, 665, (2001)
44. Veres, J.; Morgan, J. D.; Leeming, S. W.; Allen, J. V. Proc. OfIS&T's *NIP16, Int. Conf. On Digital Printing Technologies*, TheSociety for Imaging Science and Technology, Springfield, VA, 473 (2000)
45. Kelley, T. W.; Muyres, D. V.; Baude, P. F.; Smith, T. P.; Jones, T. D., *Mater. Res. Soc. Symp. Proc.*, **L6.5.1.**, 771 (2003)

## **Chapter 2**

1. James E. Huheey, Ellen A. Keiter, and Richard L. Keiter, *Inorganic Chemistry: Principles of Structure and Reactivity* (Baker & Taylor Books)
2. Friedrich Hund and Chemistry, Werner Kutzelnigg, on the occasion of Hund's 100th birthday, *Angewandte Chemie*, **35**, 573 - 586 (1996)
3. Robert S. Mulliken's Nobel Lecture, *Science*, **157**, no. 3785, 13-24 (1967)
4. Quantum Chemistry and Dynamics; <http://www.nyu.edu/classes/tuckerman/>
5. C.A. Coulson, *Valence* (Oxford University Press)
6. Murrell, J.N., *Molecular Physics*, **4**, 205-208(4) (1961)
7. Hirao T. and Saito K., *Tetrahedron Letters*, **41**, 1413-1417(5) (2000)
8. K. Rerbal, J.-N. Chazalviel, F. Ozanam and I. Solomon, *Journal of Non-Crystalline Solids*, **299-302**, Part 1, 585-588 (2002)
9. Doan Nhat Quang and Nguyen Huyen Tung, *Physica Status Solidi*, **209**, 375-387 (1998)
10. John Wilfred Orton, *The Story of Semiconductors* (Oxford University Press)
11. O. H. Le Blanc, *J. Chem. Phys.*, **33**, 626 (1960)
12. E. Hückel, *Z. Phys.*, **76**, 628 (1932)
13. Eley, Parfitt, Perry and Taysum, *Trans. Faraday Soc.*, **49** 78-86 (1953)

14. Kemeny G, and Rosenberg B, *J.Chem. Phys.*, **52**, 4151 (1970)
15. G Montambaux, *J. Phys. C: Solid State Phys.* **15**, 4523-4531 (1982)
16. Cesare Soci, Daniel Moses, Qing-Hua Xu, and Alan J. Heeger, *Phys. Rev. B* **72**, 245204 (2005)
17. V. I. Krinichnyi, *Physics of the Solid State*, **39**, 1-13 (1997)
18. R. W. Munn and W. Siebrand, *J. Chem. Phys.*, **52**, 47 (1970)
19. R. W. Munn and W. Siebrand, *Chem. Phys. Letters.*, **3**, 655 (1969)
20. M.A. Lampert, P. Mark, *Current Injection in Solids*, (Academic Press)
21. Pohl, H.A., and Engelhardt, *J. Phys. Chem.* **66**, 2085-2095 (1962)
22. Gutmann, *J. Polymer Sci.*, **G17(17)**, 41 (1967)
23. D. M. Basko and E.M. Conwell, *Phys. Rev. Lett.*, **88**, 056401 (2002)
24. Åsa Johansson and Sven Stafström *Phys. Rev. Lett.* **86**, 3602 (2001)
25. Yurii A. Firsov, *Polarons in Advanced Materials*, **103**, 63-105 (2007)
26. H. Fröhlich, *Adv. Phys.*, **3**, 325 (1954)  1896
27. T. Holstein and L. Friedman, *Phys. Rev.*, **165**, 1019 (1968)
28. L. Esaki, L. L. Chang, P. J. Stiles, D. F. O'Kane, and Nathan Wiser, *Phys. Rev.* **167**, 637 (1968)
29. R. Kubo, *Phys. Rev.*, **86**, 929 (1952)
30. R. Kubo, *J. Phys. Soc. Jap.*, **12**, 570 (1957)
31. I. Vilfan, *Phys. Status Solidi (b.)*, **59**, 351 (1973)
32. B. R. Pamplin *et. al.*, *Electrical transport in solids*, (Pergamon Press)
33. Rafael Tadmor, *Langmuir*, **20**, 7659-7664 (2004)
34. Thomas Young, *Philosophical Transactions of the Royal Society of London* (1805)
35. Mang Mang Ling and Zhenan Bao, *Chem. Mater.*, **16 (23)**, 4824–4840 (2004)
36. Masabumi Masuko, Hiroya Miyamoto, and Akihito Suzuki, *Tribology International*, **40**, 1587-1596 (2007)

37. E. Färm, M. Kemell, M. Ritala, M. Leskelä, *Chemical Vapor Deposition*, **12**, 415-417 (2006)
38. Baude P.F., Ender D.A., Kelley T.W., Haase M.A., Muyres D.V., Theiss S.D., *Electron Devices Meeting IEDM Technical Digest*, Page(s): 8.1.1-8.1.4 (2003)
39. Janos Veres, Simon Ogier, and Giles Lloyd, *Chem. Mater.*, **16**, 4543-4555 (2004)
40. David J. Griffiths, *Introduction to Quantum Mechanics*, 2nd ed. (Prentice-Hall)
41. W Y Liang, *Phys. Educ.*, **5**, 226-228 (1970)
42. <http://en.wikipedia.org/wiki/Exciton>
43. L. E. Lyons, *J. Chem. Phys.*, **23**, 220 (1955)
44. H. Baessler and H. Killesreiter, *Phys. Status Solidi B*, **53**, 183 (1972)
45. Weisz,. J. Levinson and A. Cobas., *in progress. Third Photoconductiuiry Conference, Stanford*, 12-15 (1969)
46. Albert Rose, *Phys. Rev.*, **97**, 322 (1955)
47. A. Bergman and J. Jortner, *Phys. Rev. (B)*, **9**, 4560-4574 (1974)
48. W. Helfrich, N. Riehl, and P. Thoma, *Phys. Letters.*, **10**, 31 (1964)
49. W. Chandra, L. K. Ang, K. L. Pey, and C. M. Ng, *Appl. Phys. Lett.*, **90**, 153505 (2007)
50. A.M. Goodman, A. Rose, *J. Apply. Phys.*, **42**, 2823 (1971)
51. C. F. Klingshirn, *Semiconductor optics* (Springer)
52. N.F. Mott and Edward Arthur Davis, *Electronic Processes in Non-Crystalline Materials* (Clarendon, Oxford)
53. J. M. Ziman, *Models of Disorder* (Cambridge)
54. D.M. Finlayson, *Localization and Interaction* (SUSSP, Edinburgh)
55. B. I. Shklovskii and A. L. Efros, *Springer Series in Solid-State Science Vol. 45* (Springer, Berlin, 1984)
56. Michael L. Chabinyc and Alberto Salleo, *Chem. Mater.*, **16**, 4509 (2004)

57. Gilles Horowitz, *Adv. Mater.*, **10**, 365 (1998)
58. K N Narayanan Unni, Sylvie Dabos-Seignon, and Jean-Michel Nunzi, *J. Phys. D:Appl. Phys* **38**, 1148 (2005)

#### **Chapter 4**

1. B. K. Crone, A. Dodabalapur, R. Sarpeshkar, R. W. Filas, Y.Y. Lin, Z. Bao, J.H. O'Neill, W. Li, and H. E. Katz, *J. Appl. Phys.* **89**, 5152 (2001)
2. H. E. A. Huitema, G. H. Gelink, J. B. P. H. van der Putten, K. E. Kuijk, K. M. Hart, E. Cantatore, and D. M. de Leeuw, *Adv. Mater* **14**, 1201 (2002)
3. P. Mach, S. J. Rodriguez, R. Nortrup, P. Wiltzius, and J. A. Rogers, *Appl. Phys. Lett.* **78**, 3592 (2001)
4. H. Klauk, M. Halik, U. Zschieschang, G. Schmid, W. Radlik, and W. Weber, *J. Appl. Phys.* **92**, 5259 (2002)
5. I. Rutenberg, O. A. Scherman, R. H. Grubbs, W. Jiang, E. Garfunkel, and Z. Bao, *J. Am. Chem. Soc.* **126**, 4062 (2004)
6. Yusaka Kato, Shingo Iba, Ryohei Teramoto, Tsuyoshi Sekitani, Takao Someya, Hiroshi Kawaguchi, and Takayasu Sakurai, *Apply. Phys. Lett.* **84**, 3789 (2004)
7. L. A. Majewski, M. Grell, S. D. Ogier, and J. Veres, *Organic Electronics* **4**, 27 (2003)
8. J. Lee, J. H. Kim, and Seongil Im, *Apply. Phy. Lett.*, **83**, 2689 (2003)
9. Keiji Ueno, Shigeomi Abe, Ryo Onoki, and Koichiro Saiki, *J. Apply. Phys.* **98**, 114503 (2005)
10. Hiromichi Ohta, Takuya Kambayashi, Kenji Nomura, Masahiro Hirano, Ken Ishikawa, Hideo Takezoe, and Hideo Hosono, *Adv. Mater.* **16**, 312 (2004)
11. Guangming Wang, Daniel Moses, Alan J. Heeger, Hong-Mei Zhang, Mux Narasimhan, and R. E. Demaray, *J. Apply. Phys.* **95**, 316 (2004)

12. KyongTae Kang, Mi-Hwa Lim, Ho-Gi Kim, YongWoo Choi, Harry L. Tuller, II-Doo Kim, and Jae-Min Hong, *Appl. Phys. Lett.* **87**, 242908 (2005)
13. Chang Su Kim, Woo Jin Kim, Sung Jin Jo, Sung Won Lee, Se Jong Lee, and Hong Koo Baik, *Electrochem. Solid-State Lett.* **9**, G96 (2006)
14. Bo-Tan Wu, Yan-Kuin Su, Ming-Lung Tu, An-Chang Wang, You-Sian Chen, Yu-Zung Vhiou, Yii-Tay Chiou and Chun-Hsun Chu: *Jpn. J. Appl. Phys.* **44** L2783 (2005)
15. M. McDowell, I. G. Hill, J. E. McDermott, S. L. Bernasek, and J. Schwartz, *Appl. Phys. Lett.* **88**, 073505 (2006)
16. Kui-Xiang Ma, Chee-Hin Ho, Furong Zhu, and Tai-Shung Chung, *Thin Solid Films* **371**, 140 (2000)
17. H. N. Alshareef, H. F. Luan, K. Choi, H. R. Harris, H. C. Wen, M. A.Quevedo-Lopez, P. Majhi and B. H. Lee: *Appl. Phys. Lett.* **88**, 112114 (2006)
18. A. Chin, C. H. Lai, B. F. Hung, C. F. Cheng, S. P. McAlister, C. Zhu, M.-F. Li and D.-L. Kwong: *Non-Volatile Memory Technology Symp.*, Vol. **15–17**, p.18 (2004)
19. G. Wang, D. Moses, A. J. Heeger, H.-M. Zhang, M. Narasimhan and R. E. Demaray: *J. Appl. Phys.* **95**, 316 (2004)
20. J. Lu, Y. Kuo and J.-Y. Tweng: *J. Electrochem. Soc.* **153** G410 (2006)
21. X. Li, T. L. Tansley and V. W. L. Chin: *Thin Solid Films* **250**, 263 (1994)
22. F. Wang and R. Zhang: *Mater. Sci. Forum* **264–268**, 1389 (1998)
23. J. Kolodzey, E. A. Chowdhury, T. N. Adam, G. Qui, I. Rau, J. O.Olowolafe, J. S. Suehle and Y. Chen: *IEEE Trans. Electron Devices* **47**, 121 (2000)
24. S. Maruno, T. Murao, T. Kuroiwa, N. Mikami, A. Tomikawa, M. Nagata, T. Yasue and T. Koshikawa: *Jpn. J. Appl. Phys.* **39**, L416 (2000)
25. D. Brassard, D. K. Sarkar, M. A. El Khakani and L. Ouellet: *J. Vac.Sci. Technol., A* **22**, 851 (2004)

26. C.-M. Yeh, C.H. Chen, J.-Y. Gan, C.S. Kou, and J. Hwang, *Thin Solid Films* **483**, 6 (2005)
27. K N Narayanan Unni, Sylvie Dabos-Seignon, and Jean-Michel Nunzi, *J. Phys. D:Appl. Phys.*, **38**, 1148 (2005)
28. A. Rolland, J. Richard, J. P. Kleider, and D. Mencaraglia, *J. Electrochem. Soc.* **140**, 3679 (1993)
29. D. Knipp, R. A. Street, A. Volk, and J. Ho, *J. Apply. Phys.*, **93**, 347 (2003)
30. L. A. Majewski, R. Schroeder, M. Voigt, and M. Grell, *J. Phys. D:Appl. Phys.*, **37**, 3367 (2004)
31. L. A. Majewski, R. Schroeder, and M. Grell, *Adv. Funct. Mater.* **15**, 1017 (2005)
32. Jong-Moo Kim, Joo-Won Lee, Jai-Kyeong Kim, Byeong-Kwon Ju, Jong-Seung Kim, Yun-Hi Lee and Myung-Hwan Oh, *Apply. Phys. Lett.*, **85**, 6368 (2004)
33. Soeren Steudel, Stijn De Vusser, Stijn De Jonge, Dimitri Janssen, Stijn Verlaak, Jan Genoe, and Paul Heremans, *Apply. Phys. Lett.*, **85**, 4400 (2004)
34. Yun-Hi Le, Young-Sik Kim, Byeong-Kwon Ju and Uung-Hwan Oh, *IEEE Trans. Electron Devices*, **46**, 892 (1999)
35. Sandra. E. Fritz, Tommie Wilson Kelley, and C. Daniel Frisbie, *J. Phys. Chem. B* **109**, 10574 (2005)
36. Dail Eom, Sang Yong No, Cheol Seong Hwang, and Hyeong Joon Kim, *J. Electrochem. Soc.*, **153**, C229-C234 (2006)
37. M. McDowell, I. G. Hill, J. E. McDermott, S. L. Bernasek and J. Schwartz: *Appl. Phys. Lett.*, **88**, 073505 (2006)
38. I. Yagi, K. Tsukagoshi and Y. Aoyagi: *Appl. Phys. Lett.*, **86**, 103502 (2005)
39. B.-T. Wu, Y.-K. Su, M.-L. Tu, A.-C. Wang, Y.-S. Chen, Y.-Z. Vhiou, Y.-T. Chiou and C.-H. Chu: *Jpn. J. Appl. Phys.*, **44**, 2783 (2005)
40. K.-X. Ma, C.-H. Ho, F. Zhu and T.-S. Chung: *Thin Solid Films*, **371**, 140 (2000)

41. M. Yoshida, S. Uemura, T. Kodzasa, T. Kamata, M. Matsuzawa and T. Kawai: *Synth. Met.*, **137**, 967 (2003)
42. Hsiao-Wen Zan, Kuo-Hsi Yen, Chien-Hsun Chen, Pu-Kuan Liu, Kuo-Hsin Ku, and Jennchang Hwang, *Electrochemical and Solid-State Letters*, **10** (1) H8-H10 (2007)
43. Christopher R. Newman, C. Daniel Frisbie, Demetrio A. da Silva Filho, Jean-Luc Bredas, Paul C. Ewbank, and Kent R. Mann, *Chem. Mater.*, **16**, 4436 (2004)
44. L. A. Majewski, R Schroeder, and M Grell, *Adv. Mater.*, **17**, 192 (2005)
45. Flavio de Paula Santos, Elson de Campos, Marcelo Costa, Francisco Cristovao Lourenco Melo, Roberto Yzumi Honda, and Rogerio Pinto Mota, *Materials Research* **6**, 353 (2003)
46. Myung. M. Sung, G. Jonathan Kluth, and Roya Maboudian, *J. Vac. Sci. Technol. A* **17(2)**, 540 (1999)
- 
47. Sang Chul Lim, Seong Hyun Kim, Jung Hun Lee, Mi Kyung Kim, Do Jin Kim, and Taehyoung Zyung, *Synth. Met.* **148**, 75 (2005)
48. Wei-Yang Chou, Chia-Wei Kuo, Horng-Long Cheng, Yi-Ren Chen, Fu-Ching Tang, Feng-Yu Yang, Dun-Yin Shu, and Chi-Chang Liao, *Apply. Phys. Lett.*, **89**, 112126 (2006)
49. Sang Yoon Kwonwoo, Kwonwoo Shin, and Chan Eon Park, *Adv. Funct. Mater.*, **15**, 1806 (2005)
50. L. F. Drummy and D. C. Martin, *Adv. Mater.*, **17**, 903 (2005)

## ***Chapter 5***

1. Kazuhito Tsukagoshi, Jun Tanabe, Iwao Yagi, Kunji Shigeto, and Keiichi Yanagisawa, *J. Apply. Phys.* **99**, 064506 (2006)
2. Alejandro L. Briseno, Qian Miao, Mang-Mang Ling, Colin Reese, Hong Meng,

- Zhenan Bao, and Fred Wudl, *J. Am. Chem. Soc.* **128**, 15576 (2007)
3. Michael C. Hamilton, Sandrine Martin, and Jerzy Kanicki, *IEEE Trans. Electron Devices*. **51**, 877 (2004)
4. Yan Liang, Guifang Dong, Yan Hu, Liduo Wang, and Yong Qiu, *Appl. Phys. Lett.* **86**, 132101 (2005)
5. Tobat P. I Saragi, Robert Pudzich, Thomas Fuhrmann, and Josef Salbeck, *Appl. Phys. Lett.* **84**, 2334 (2004)
6. Annie Wang, Ioannis Kymmissis, Vladimir Bulovic, and Akintunde I. Akinwande, *Appl. Phys. Lett.* **89**, 112109 (2006)
7. Niels Benson, Martin Schidleja, Christian Melzer, Roland Schmechel, and Heinz von Seggern, *Appl. Phys. Lett.* **89**, 182105 (2006)
8. Yong-Young Noh, Jieun Ghim, Seok-Ju Kang, Kang-Jun Baeg, Dong-Yu Kim, and Kiyoshi Yase, *J. Appl. Phys.* **100**, 094501 (2006)
9. Martin J. Powell, *IEEE Trans. Electron Devices*. **36**, 2753 (1989)
10. Tobat P. I. Saragi, Robert Pudzich, Thomas Fuhrmann-Lieker, and Josef Salbeck, *Appl. Phys. Lett.* **90**, 143514 (2007)
11. J. S. Brooks, T. Tokumoto, E.-S. Choi, D. Graf, N. Biskup, D. L. Eaton, J. E. Anthony and S. A. Odom, *J. Appl. Phys.* **96**, 3312 (2004)
12. H. J. Queisser and D. E. Theodorou, *Phys. Rev. B* **33**, 4027 (1986)
13. A. Torikai, M. Ohno, and K. Fueki, *J. Appl. Polym. Sci.* **41**, 1023 (1990)
14. [http://www.gaussian.com/g\\_brochures/g03\\_intro.htm](http://www.gaussian.com/g_brochures/g03_intro.htm)
15. Soumya Dutta and K. S. Narayan, *Phys. Rev. B.*, **68**, 125208 (2003)

## Chapter 6

1. Kazumasa Nomoto, Nobukazu Hirai, Nobuhide Yoneya, Noriyuki Kawashima, Makoto Noda, Masaru Wada, and Jiro Kasahara, *IEEE Trans. Electron Device*, **52**, 1519 (2005)
2. Etienne Menard, Matthew A. Meitl, Yugang Sun, Jang-Ung Park, Daniel Jay-Lee Shir, Yun-Suk Nam, Seokwoo Jeon, and John A. Rogers, *Chem. Rev.*, **107**, 1117 (2007)
3. Jeffrey T. Mabeck and George G. Malliaras, *Anal Bioanal Chem*, **384**, 343 (2006)
4. Lisong Zhou, Alfred Wang, Sheng-Chu Wu, Jie Sun, Sungkyu Park, and Thomas N. Jackson, *Appl. Phys. Lett.*, **88**, 083502 (2006)
5. B. Crone, A. Dodabalapur, A. Gelperin, L. Torsi, H. E. Katz, A. J. Lovinger, and Z. Bao, *Appl. Phys. Lett.*, **78**, 2229 (2001)
6. Frank Liao, Christopher Chen, and Vivek Subramanian, *Sensors and Actuators B*, **107**, 849 (2005)
7. Takao Someya, Howard E. Katz, Alan Gelperin, Andrew J. Lovinger, and Ananth Dodabalapurd, *Appl. Phys. Lett.*, **81**, 3079 (2002)
8. Richard D. Yang, T. Gredig, Corneliu N. Colesniuc, Jeongwon Park, Ivan K. Schuller, William C. Trogler, and Andrew C. Kummel, *Appl. Phys. Lett.*, **90**, 263506 (2007)
9. Marcel Bouvet, *Anal Bioanal Chem*, **384**, 366 (2006)
10. Jason Locklin and Zhenan Bao, *Anal Bioanal Chem*, **384**, 336 (2006)
11. Dawen Li, Evert-Jan Borkent, Robert Nortrup, Hyunsik Moon, Howard Katz, and Zhenan Bao, *Appl. Phys. Lett.*, **86**, 042105 (2005)
12. L. Torsi, A. Dodabalapur , L. Sabbatini , P.G. Zambonin, *Sensors and Actuators B*, **67**, 312 (2000)
13. Paul V. Pesavento, Reid J. Chesterfield, Christopher R. Newman, and C. Daniel Frisbie, *J. Appl. Phys.*, **96**, 7312 (2004)

14. Björn Timmer, Wouter Olthuis, and Albert van den Berg, *Sensors and Actuators B*, **107**, 666 (2005)
15. K N Narayanan Unni, Sylvie Dabos-Seignon and Jean-Michel Nunzi, *J. Phys. D: Appl. Phys.*, **38**, 1148 (2005)
16. Zheng-Tao Zhu, Jeffrey T. Mason, Ru' diger Dieckmann, and George G. Malliaras, *Appl. Phys. Lett.*, **81**, 4643 (2002)
17. D. H. Dunlap, P. E. Parris, and V. M. Kenkre, *Phys. Rev. Lett.*, **77**, 542 (1996)
18. Nobuhide Yoneya, Makoto Noda, Nobukazu Hirai, Kazumasa Nomoto, Masaru Wada, and Jiro Kasahara, *Appl. Phys. Lett.*, **85**, 4663 (2004)

## ***Chapter 7***

1. Tsuyoshi Sekitani, Shingo Lba, Yusaku Kato, Yoshiaki Noguchi,, Takao Someya, an Takayasu Sakurai, *Appl. Phys. Lett.* **87**, 173502 (2005)
2. Suyong Jung and Zhen Yao, *Appl. Phys. Lett.* **86**, 083505 (2005)
3. M. Kitamura, T. Imada and Y. Arakawa, *Appl. Phys. Lett.* **83**, 3410 (2003)
4. Iwao Yagi, Kazuhito Tsukagoshi, Yoshinobu Aoyagi, *Appl. Phys. Lett.* **86**, 103502 (2005)
5. D. K. Hwang, Ji Hoon Park, Jiyou Lee, Jeong-M Choi, Jae Hoon Kim, Eugene Kim and Seongil Im, *Electrochem. Solid State. Lett.* **8**, G140 (2005)
6. Kuo-Hsi Yen, Hsiao-Wen Zan, Chien-Hsun Chen, Pu-Kuan Liu *et. al.*, *Proceedings of SID Euroisplay Conference 2005*, Edinburgh, Scotland, p.56 (2005)
7. P. Parashkov, E. Becker, S. Hartmann, G. Ginev, D. Schneider, H. Krautwald, T. Dobbertin, D. Metzdorf *et al.*, *Appl. Phys. Lett.* **82**, 4579 (2003)
8. Michael L. Chabinyc, Jeng-Ping Lu, Robert A. Street, Yiliang Wu,Ping Liu, and Beng S. Ong, *J. Apply. Phys.*, **96**, 2063 (2004)

9. Takahito Oyamada, Hiroyuki Sasabe, Chihaya Adachi, Suguru Okuyama, Noriyuki Shimoji and Kazumi Matsushige, *Appl. Phys. Lett.* **86**, 093505 (2005)
10. Michael D. Austin and Stephen Y. Chou, *Appl. Phys. Lett.* **81**, 4431 (2002)
11. High performance organic field-effect transistor with a novel top- and bottom contact (TBC) structure, M Yoshida et al, *Mat. Res Soc. Symp. Proc.* **736**, 213 (2003)
12. Electrode Effects of Organic Thin-Film Transistor with Top and Bottom Contact Configuration, M Yoshida et al, *Jpn. J. Appl. Phys.* **44**, 3715 (2005)
13. Y. Chen, W.W. Zhu, S. Xiao, I. Shih, *J. Vac. Sci. Technol.* **A22**, 768 (2004)
14. Liang Wang, Daniel Fine, Taeho Jung, Debarshi Basu, Heinz von Seggern, and Ananth Dodabalapur, *Appl. Phys. Lett.* **85**, 1772 (2004)



## 個人資料

姓名：顏國錫

性別：男

出生年月日：69年2月13日

出生地：彰化縣

學歷：

學校 / 科 系	學位	起訖年月
中正大學/物理學系	學士	87年9月~ 91年6月
交通大學/電子物理所	碩士	91年9月~ 93年6月
交通大學/光電工程所	博士	93年9月~ 97年12月

經歷：

服務單位	職位	起訖年月
工業研究院/電子所	定期人員	93年3月 ~ 94年12月
工業研究院/太陽電池中心	定期人員	95年6月 ~ 97年10月
友達光電/有機OLED	約聘人員	97年3月 ~ 97年5月