Reference

Dioscorides, *De materia medica*, 1st Century.

Braun, F., Uber die Stromleitung durch Schwefeimetalle*, Ann. Phy.Chem.,* 153, 556-563, 1874. (Cited in S. M. Sze, Semiconductor Devices: Pioneering papers, world scientific, Singapore, 1991).

Schottky, W., and Deutschmann, W., Zum mechanismus der richtwirkung in Kupferoxydulgleichrichten, *Phys. Z*, 30, 839-846, 1929.

Bunn, C**.** W., The lattice-dimensions of Zinc oxide, *Proc. Phys. Soc.,* 47, 835-843,1935.

Schottky, W., Halbleiterthorie der Sperrschicht, *Naturwissenschaften*, 26, 843-843,1938.

Mott, N. F., Note on the contact between a metal and an insulator or semi-conductor, *Proc. Cambr. Philos. Soc.,* 34, 568-572, 1938.

Bethe, H. A., Theory of the boundary layer of crystal rectifiers, *MIT Radiat. Lab Report*, 43-12, 1942.

Bardeen, J., Surface states and rectification at a metal semi-conductor contact, *Phys. Review*, 71, 717-727, 1947.

Wagner, C., The mechanism of the decomposition of nitrous oxide on zinc oxide as catalyst, *J. Chem. Phys., 18*, 69–71, 1950.

Mollow, E., in Photoconductivity Conference, Wiley, New York, NY, USA, pp. 509, 1954.

Brown, H. E., Zinc Oxide Rediscovered, The New Jersey Zinc Company, New York (1957) and Zinc Oxide, Properties and Applications (1976).

Anderson, R. L., Experiments on Ge-GaAs heterojunctions, *Solid State Electron.,* 5, 1962, 341-344, in21–in24, 345–351,1962.

Perlmant, S. S. and Feucht, D. L., p-n hetero junctions, *Solid State Electron.,* 7, 911-923, 1964.

Cowley, A. M., and Sze, S. M., Surface states and barrier height of metal-semiconductor systems, *J. Appl. Phys.,* 36, 3212-3220, 1965.

Crowell, C. R., The Richardson constant for thermionic emission in Schottky barrier diodes, *Solid State Electron.,* 8, 395-399, 1965.

Mead, C. A., Metal –semiconductor on ZnSe and ZnO, *Phys. Lett.,* 18, 218-218, 1965.

Mead, C. A., Metal-semiconductor surface barriers, *Solid-State Electron.,* 9, 1023-1033, 1966.

Cullity, B. D., Elements of X-Ray Diffraction, Addison-Wesley Reading, Mass, USA, 3rd edition, 1967.

Donnelly, J. P., and Milnes, A. G., The capacitance of p-n heterojunctions including the effects of interface states, *IEEE Trans. Electron Devices*., 14, 63 -68, 1967.

Chang, C. Y., and Sze, S. M., Carrier transport across metal-semiconductor barriers, *Solid-State Electron*., 13, 727-740, 1970.

Neville, R. C., and Mead, C. A., Surface barriers on zinc oxide, *J. Appl. Phys*., 41, 3795-3800, 1970.

Yu, Y. C., The metal-semiconductor contact: an old device with a new future, *IEEE Spectrum*, 7, 83-89, 1970.

JCPDS, Powder Diffraction File, Alphabetical Index, Inorganic Compounds, International Centre for Diffraction Data, Newtown Square, Pa, USA, 1977.

Norde, H., A modified forward IV plot for Schottky diodes with high series resistance, *J. Appl. Phys.*, 50, 5052-5053, 1979.

Sze, S. M., Physics of Semiconductor Devices, 2nd Edition, John Wiley and Sons, New York, 1981.

Chopra, K. L., and Kaur, I., Thin film device applications, Plenum press, New York, 1983.

Barret, C. and Muret, P., Relation between current-voltage characteristics and *i*nterface states at metal-semiconductor interfaces, *Appl. Phys. Lett.*, 42, 890-892, 1983.

Sato, K., and Yasumura, Y., Study of forward IV plot for Schottky diodes with high series resistance, *J. Appl. Phys.*, 58, 3655-3657,1985.

Zwicker, G. and Jacobi, K., Experimental band structure of ZnO, *Solid State Commun*., 54, 701-704, 1985.

Fabricius, H., Skettrup, T., and Bisgaard, P., Ultraviolet detectors in thin sputtered ZnO films, *Appl. Opt.*, 25, 2764-2767,1986.

Cheung, S. K., and Cheung, N. W., Extraction of Schottky diode parameters from forward current-voltage characteristics, *Appl. Phys. Lett.,* 49, 85-87, 1986.

Rhoderick, E. H., and Williams, R. H., Metal-Semiconductor Contacts, Oxford, Clerendon, 1988.

Bhuiyan, A. S., Martinez, A., and Esteve, D., A new Richardson plot for non-ideal Schottky diodes, *Thin Solid Films,*161*,* 93-100, 1988.

Werner, J., Levi, A. F. J., Tung, R. T., Anzlowar, M., and Pinto, M., Origin of the excess Capacitance at intimate Schottky contacts, *Phys. Rev. Lett.* 60, 53-56, 1988.

Mönch, W., On the physics of metal-semiconductor interfaces, *Rep. Prog. Phys*. 53, 221-278, 1990.

Nixon, J. A., and Davies, J. H., Potential fluctuations in heterostructure devices, *Phys. Review B,* 41, 7929-7932, 1990.

Sullivan, J. P., Tung, R. T., Pinto, and M. R., Graham, W. R., Electron transport of inhomogeneous Schottky barriers: A numerical study, *J. Appl. Phys*., 70, 7403-7424, 1991.

Werner, J. H., and Güttler, H. H., Barrier inhomogeneities at Schottky contacts, *J. Appl. Phys.*, 69, 1522-1533, 1991.

Horvath, Zs. J., Effect of near-interface concentration change on barrier height in ion-bombarded and heat-treated GaAs Schottky contacts, *Mater. Res. Soc. Symp. Proc*., 260, 260-441, 1992.

Tung, R. T., Electron transport at metal-semiconductor interfaces: general theory, *Phys. Review B*, 45, 13509-13523, 1992.

Smith, D. L., Thin Film Deposition: Principles and Practice, 1st Ed. McGraw-Hill, USA 1994.

Jenkins, R., and Snyder, R. L., Introduction to X-ray Powder Diffractometry, John Wiley & Sons Inc., 89-91, ISBN 0-471-51339-3,1996.

Razeghi, M., and Rogalski, A., Semiconductor ultraviolet detectors. *J. Appl. Phys.*, 79, 7433-7473, 1996.

Reynolds, D. C., Look, D. C., and Jogai, B., Optically pumped ultraviolet lasing from ZnO, *Solid State Commun*., 99, 873-875, 1996.

Chand, S., and Kumar, J., Effects of barrier height distribution on the behavior of a Schottky diode, *J. Appl. Phys.,* 82, 5005-5010, 1997.

Schmitsdorf, R. F., Kampen, T. U., and Mönch, W., Explanation of the linear correlation between barrier heights and ideality factors of real metal-semiconductor contacts by laterally nonuniform Schottky barriers, *J. Vac. Sci. Technol. B*, 15, 1221-1226, 1997.

Fu, Z., Lin, B., Liao, G., and Wu, Z., The effect of Zn buffer layer on growth and luminescence of ZnO flms deposited on Si substrates, *J. Cryst. Growth,* 193, 316-321, 1998.

Mönch, W., Barrier heights of real Schottky contacts explained by metal-induced gap states and lateral inhomogeneities, *J. Vac. Sci. Technol. B*, 17, 1867-1876, 1999.

Sun, X. W., and Kwok, H. S., Optical properties of epitaxially grown zinc oxide films on sapphire by pulsed laser deposition, *J. Appl. Phys.,* 86, 409-411,1999.

Akane, T., Sugioka, K., and Midorikawa, K., Non alloyed ohmic contact fabrication in a hydrothermally grown *n*-ZnO (0001) substrate by KrF excimer laser irradiation, *J. Vac. Sci. Technol. B*., 18, 1406-1408 , 2000.

Liu, Y., Gorla, C.R., Liang, S., Emanetoglu, N., Lu, Y., Shen, H., and Wraback, M., Ultraviolet detectors based on epitaxial ZnO films Grown by MOCVD., *J. Electronic Materials,* 29, 69-74, 2000.

Solomon, P. M., Device innovation and material challenges at the limits of CMOS technology, *Annu. Rev. Mater. Sci.,* 30, 681-697, 2000.

Zhu, S., Van Meirhaeghe R. L., Detavernier, C., Cardon, F., Rub, G.-P., Qub, X.-P., Lib, B.-Z., Barrier height inhomogeneities of epitaxial $CoSi_2$ Schottky contacts on n-Si (100) and (111), *Solid-State Electron.*, 44, 663-671, 2000.

Chattopadhyay, P., and Haldar, D. P., Capacitance ± voltage characteristic of anisotype heterojunction in the presence of interface states and series resistance, *Appl. Surf. Sci.,* 171, 207-212, 2001.

Kim, H. Y., Kim, J. H., Kim, Y. J., Chae, K. H., Whang C. N., Song, J. H. and Im, S., Photoresponse of Si detector based on n-ZnO/p-Si and n-ZnO/n-Si structures, *Opt. Mater.,* 17, 141-144, 2001.

Lee, J, Kim, K., Park, S., and Choi, W. -K., Low-resistance and non alloyed ohmic contacts to plasma treated ZnO, *Appl. Phys. Lett.*, 78, 3842-3844, 2001.

Liang, S., Sheng, H., Liu, Y., Huo, Z., Lu, Y., and Shen, H., ZnO Schottky ultraviolet photodetectors, *J. Crystal Growth*, 225, 110-113, 2001.

Moriarty, P., Nanostructured materials, *Rep. Prog. Phys.,* 64, 297, 2001.

Tang, B. -T., Yu, Q. -X., Lee, H. -Y., Lee, C. -T., Ohmic performance of ZnO and ITO/ZnO contacted with *n*-type GaN layer, *Mater. Sci. Eng. B,* 82, 259-261, 2001.

Tung, R. T., Recent advances in Schottky barrier concepts, *Mater. Sci. Eng. R*, 35, 1-138, 2001.

Van de Walle, C. G., Defect analysis and engineering in ZnO, *Physica B*, 308–310, 899-903, 2001.

Zhang, S. B., Wei, S. -H., and Zunger, A., Intrinsic *n*-type versus *p*-type doping asymmetry and the defect physics of ZnO, *Phys. Review B*, 63, 075205-01-075205-07, 2001.

Garces, N. Y., Giles, N. C., Halliburton, L. E., Cantwell, G., Eason, D. B., Reynolds, D. C., and Look, D. C., Production of nitrogen acceptors in ZnO by thermal annealing, *Appl. Phys. Lett.,* 80,1334-1336, 2002.

Kim, H. -K., Kim, K. -K., Park, S. -J., Seong, T. -Y., and Yoon, Y. S., Thermally Stable and Low Resistance Ru Ohmic Contacts to *n*-ZnO, *Jpn. J. Appl. Phys*., 41, L546-L548, 2002.

Nalwa, H. S., Nanostructured Materials and Nanotechnology, Academic Press, London, 2002.

Sheng, H., Muthukumar, S., Emanetoglu, N. W., and Lu, Y., Schottky diode with Ag on .112¯ 0 epitaxial ZnO film, *Appl. Phys. Lett.,* 80, 2132-2134, 2002.

Yao, B. D., Chan, Y. F., and Wang, N., Formation of ZnO nanostructures by a simple way of thermal evaporation, *Appl. Phys. Lett.,* 81, 757-759, 2002.

Basak, D., Amin, G., Mallik, B., Paul, G. K., and Sen, S. K., Photoconductive UV detectors on sol-gel-synthesized ZnO films. *J. Crystal Growth*, 256, 73-77, 2003.

Coppa, B. J., Davis, R. F., and Nemanich, R. J., Gold Schottky contacts on oxygen plasma-treated, n-type ZnO (0001), *Appl. Phys. Lett.,* 82, 400-402, 2003.

Hoffman, R. L., Norris, B. J. and Wager, J. F., ZnO-based transparent thin-film transistors, *Appl. Phys. Lett*., 82, 733-735, 2003.

Nomura, K., Ohta, H., Ueda, K., Kamiya, T., Hirano, M., and Hosono, H., Thin-film transistor fabricated in single-crystalline transparent oxide semiconductor, *Science,* 300, 1269-1272, 2003.

Park, C. H., Jeong, I. S., Kim, J. H., and Im, S., Spectral responsivity and quantum efficiency of n-ZnO/p-Si photodiode fully isolated by ion-beam treatment., *Appl. Phys. Lett., 82*, 3973-3975, 2003.

Alivov, Y. I., Kalinina, E. V., Cherenkov, A. E., Look, D. C, Ataev, B. M., Omaev, A. K., Chukichev, M. V., and Bagnall, D. M., Fabrication and characterization of n-ZnO/p-AlGaN heterojunction light emitting diodes on 6H-SiC substrates, *Appl. Phys. Lett.,* 83, 4719-01-4719-03, 2003.

Chakrabarti, P., Krier, A., and Morgan, A. F., Analysis and simulation of a mid-infrared P+-InAs0.55Sb0.15P0.30/n0-InAs0.89Sb0.11/N+-InAs0.55Sb0.15P0.30 double heterojunction photodetector grown by LPE, *IEEE Trans. Electron Device*, 50, 2049-2058, 2003.

Chopra, K. L., Paulson, P. D., and Dutta, V., Thin-Film Solar Cells: An Overview, *Prog. Photovolt: Res. Appl,* 12, 69–92, 2004.

Ding, Y., Gao, P. X., and Wang, Z. L., Catalyst-nanostructure interfacial lattice mismatch in determining the shape of VLS grown nanowires and nanobelts: A case of Sn/ZnO, *J. Amer. Chem. Soc*., 126, 2066-2072, 2004.

Ip, K., Gila, B. P., Onstine, A. H., Lambers, E. S., Heo, Y. W., Baik, K. H., Norton, D. P., Pearton, S. J., Kim, S., LaRoche, J. R., and Ren, F., Effect of ozone cleaning on Pt/Au and W/Pt/Au Schottky contacts to n-type ZnO, *Appl. Surf. Sci*., 236, 387-393, 2004.

Lee, J. -B., Lee, M. -H., Park, C. -K., and Park, J. -S., Effects of lattice mismatches in ZnO substrate structures on the orientations of ZnO films and characteristics of SAW devices, *Thin Solid Films*, 447-448, 296-301, 2004.

Look, D. C., and Claflin, B., P-type doping and devices based on ZnO, *Phys. Stat Sol. B*, 241, 624-630, 2004.

Park, W. II., Kim, J. S., Yi, G. -C., Bae, M. H. and Lee, H. -J., Fabrication and electrical characteristics of high-performance ZnO nanorod field-effect transistors, *Appl. Phys. Lett.,* 85, 5022-5054, 2004.

Rollett, A., Humphreys, F. J., Rohrer, G. S., and Hatherly, M., Recrystallization and related annealing phenomena, Elsevier- Technology & Engineering, 2004.

Romero, R., López, M. C., Leinen, D., Martin, F. F., and Ramos-Barrado, J. R., Electrical properties of the n-ZnO/c-Si heterojunction prepared by chemical spray pyrolysis, *Mater. Sci. Eng. B*, 110, 87-93, 2004.

Ronning, C., Gao, P. X., Ding, Y., and Wang, Z. L., Manganese-doped ZnO nanobelts for spintronics, *Appl. Phys. Lett.,* 84, 783-785, 2004.

Wang, Z. L., Nanostructures of ZnO, *Mater Today*, 7, 26-33, 2004.

Zhang, B. P., Binh, N. T., Segawa, Y., Kashiwaba, Y., and Haga, K., Photoluminescence study of ZnO nanorods epitaxially grown on sapphire (1120) substrates, *Appl. Phys. Lett.,* 84, 586-588, 2004.

Alivov, Ya. I., Özgür, Ü., Dogan, S., Johnstone, D., Avrutin, V., Onojima, N., Liu, C., Xie, J., Fan, Q., and Morkoç, H., Photoresponse of n-ZnO/p-SiC Heterojunction Diodes Grown by Plasma-Assisted Molecular-Beam Epitaxy, *Appl. Phys. Lett.*, *86*, 241108-01-241108-03, 2005.

Fortunato, E., Barquinha, P., Pimentel, A., Gonçalves, A., Marques, A., Pereira, L., and Martins, R., Recent advances in ZnO transparent thin film transistors, *Thin Solid Films,* 487, 205-211, 2005.

Kim, S. -H., Jeong, S. -W., Hwang, D. -K., Park, S. -J., and Seong, T. -Y., Zn/Au ohmic contacts on n-Type ZnO epitaxial layers for light-emitting devices, *Electrochemical and Solid-State Letters,* 8, G198-G200, 2005.

Kim, S. -H., Kim, H. -K., and Seong, T. -Y., Effect of hydrogen peroxide treatment on the characteristics of Pt Schottky contact on n-type ZnO, *Appl. Phys. Lett.,* 86, 112101-01-112101-03, 2005.

Lin, T. K., Chang, S. J., Su, Y. K., Huang, B. R., Fujita, M., and Horikoshi, Y., ZnO MSM photodetectors with Ru contact electrodes. *J. Crystal Growth,* 281, 513-517, 2005.

Ma, Y., Du, G., Yin, J., Yang, T., and Zhang, Y., Structural and optoelectrical properties of ZnO thin films deposited on GaAs substrate by metal-organic chemical vapour deposition (MOCVD), *Semicond. Sci. Technol.*, 20, 1198-1202, 2005.

Mönch, W., On the band structure lineup of ZnO heterostructures, *Appl. Phys. Lett.,* 86, 162101-01-162101-01, 2005.

Moon, T. H., Jeong, M. C., Lee, W., and Myoung, J. M., The fabrication and characterization of ZnO UV detector, *Appl. Surf. Sci.*, *240*, 280-285, 2005.

Özgür, Ü., Alivov, Ya. I., Liu, C., Teke, A., Reshchikov, M. A., Doğan, S., Avrutin, V., Cho, S. -J., and Morkoç, H., A comprehensive review of ZnO materials and devices, *J. Appl. Phys,* 98, 041301-01-041301-103, 2005.

Şahin, B., Çetin, H., and Ayyildiz, E., The effect of series resistance on capacitance–voltage characteristics of Schottky barrier diodes, *Solid State Commun.*, 135, 490–495, 2005.

Weichsel, C., Pagni, O., and Leitch, A. W. R., Electrical and hydrogen sensing characteristics of Pd/ZnO Schottky diodes grown on GaAs, *Semicond. Sci. Technol.*, 20, 840-843, 2005.

Xiao, M., and Kuwabara, M., Effect of seed layer on the orientation of zinc oxide film on silicon substrate, *J. Mater. Sci. Technol*., 21, 887-890, 2005.

Yi, G.-C., Wang, C., and Park, W. I., ZnO nanorods: synthesis, characterization and applications, *Semicond. Sci. Technol*., 20, 22-34, 2005.

El-Shaer, A., Mofor, A. C., Bakin, A., Kreye, M., and Waag, A., High-quality ZnO layers grown by MBE on sapphire, *Superlattices Microstruct.,* 38, 265-27, 2005.

Chen, X. D., Ling, C. C., Fung S., Beling, C. D., Mei, Y. F., Ricky, K. Y., Fu, G., Siu, G., and Chu, P. K., Current transport studies of ZnO/p-Si heterostructures grown by plasma immersion ion implantation and deposition, *Appl. Phys. Lett.,* 88, 13210-01-13210-03, 2006.

Djurišić A. B. and Leung, Y. H., Optical properties of ZnO nanostructures, *Small*, 2, 944-961, 2006.

Dökme, İ., Altindal, Ş., and Bülbül, M. M., The barrier height inhomogeneity in Al/p-Si Schottky barrier diodes with native insulator layer, *Appl. Surf. Sci.,* 252, 7749-7754, 2006.

Fan, H. J., Werner, P., and Zacharias, M., Semiconductor nanowires: from self-organization to patterned growth, *Small*, 2, 700-717, 2006.

Fan, Z., and Lu, J. G., Chemical Sensing With ZnO nanowire field-effect transistor, *IEEE Trans. Nanotec.*, 5, 393-396, 2006.

Jagadish, C., and Pearton, S. J., Zinc oxide bulk, thin films, and nanostructures, Elsevier, New York, 2006.

Li, M. Y., Anderson, W., Chokshi, N., Deleon, R. L., and Tompa, G., Laser annealing of laser assisted molecular beam deposited ZnO thin films with application to metal-semiconductor-metal photodetectors. *J. Appl. Phys.*, *100*, 053106-01-053106-04, 2006.

Look, D. C. Progress in ZnO materials and devices, *J. Electron. Mater*, 35, 1299-1305, 2006.

Lopatiuk-Tirpak, O., Chernyak, L., Mandalapu, L. J., Yang, Z., Liu, J. L., Gartsman, K., Feldman, Y., and Dashevsky, Z., Influence of electron injection on the photoresponse of ZnO homojuction diodes, *Appl. Phys. Lett.*, 89, 142114-01-142114-03, 2006.

Lu, J. G., Chang, P. and Fan, Z., Quasi-one-dimensional metal oxide materials-synthesis, properties and applications, *Mater. Sci. Eng. R*, 52, 49-91, 2006.

Oh, D. C., Suzuki, T.; Hanada, T.; Yao, T.; Makino, H.; and Ko, H. J., Photoresponsivity of ZnO Schottky barrier diodes, *J. Vac. Sci. Technol. B,* 24, 1595-1598, 2006.

Pearton, S. J., Norton, D. P., Heo, Y. W., Tien, L. C., Ivill , M. P., Li, Y., Kang, B. S., Ren, F., Elly, J., and Hebard, A. F., ZnO spintronics and nanowire devices, *J. Electron. Mater.,* 35, 862-868, 2006.

Shen, W. J., Wang, J., Wang, Q. Y., Duan, Y. and Zeng, Y. P., Structural and optical properties of Zn films on Si substrates using a γ-Al_2O_3 buffer layer, *J. Phys. D: Appl. Phys*., 39, 269-273, 2006.

Teng, X. M., Fan, H. T, Pan, S. S, Ye, C., and Li, G. H., Photoluminescence of ZnO thin films on Si substrate with and without ITO buffer layer, *J. Phys. D: Appl. Phys*., 39, 471–476, 2006.

Wang, Z. L., and Song, J., Piezoelectric nanogenerators based on zinc oxide nanowire arrays, *Science,* 312, 242-245, 2006.

Wenckstern, H. v., Biehne, G. R., Rahman, A., Hochmuth, H., Lorenz, M., and Grundmann, M., Mean barrier height of Pd Schottky contacts on ZnO thin films, *Appl. Phys. Lett.*, 88, 092102-010092102-03, 2006.

Young, S. J., Ji, L. W., Chang, S. J., and Su, Y. K., ZnO Metal-Semiconductor-Metal Ultraviolet Sensors with Various Contact Electrodes. *J. Crystal Growth*, *293*, 43-47, 2006.

Allen, M. W., and Durbin, S. M., Metson, J. B., Silver oxide Schottky contacts on n-type ZnO, *Appl. Phys. Lett.,* 91, 053512-01-053512-03, 2007.

Angadi, B., Park, H. C., Choi, H. W., Choi, J. W., and Choi, W. K., Oxygen plasma treated epitaxial ZnO thin films for Schottky ultraviolet detection, *J. Phys. D: Appl. Phys.,* 40, 1422-1425, 2007.

Brillson, L. J., Mosbacker, H. L., Hetzer, M. J., Strzhemechny, Y., and Jessen, G. H., Dominant effect of near-interface native point defects on ZnO Schottky barriers, *Appl. Phys. Lett.,* 90, 102116-01-10216-03, 2007.

Cao, B., Teng, X., Heo, S. H., Li, Y., Cho, S. O., Li, G., and Cai, W., Different ZnO nanostructures fabricated by a seed-layer assisted electrochemical route and their photoluminescence and field emission properties, *J. Phys. Chem. C,* 111, 2470-2476, 2007.

Dhananjay, Nagaraju, J., and Krupanidhi, S. B., Investigations on zinc oxide thin films grown on Si (1 0 0) by thermal oxidation, *Mater. Sci. Eng. B*, 137, 126-130, 2007.

Djuriˇsi´c, A. B., Leung, Y. H., Tam, K. H., Hsu, Y. F., Ding, L., Ge, W. K., Zhong, Y. C., Wong, K. S., Chan, W. K., Tam, H. L., Cheah, K. W., Kwok, W. M., and Phillips, D. L., Defect emissions in ZnO Nanostructures, *Nanotechnology*, 18, 095702-01-095702-08, 2007.

Endo, H., Sugibuchi, M., Takahashi, K., Goto, S., Sugimura, S., Hane, K., and Kashiwaba, Y., Schottky ultraviolet photodiode using a ZnO hydrothermally grown single crystal substrate, *Appl. Phys. Lett.*, 90, 121906-010121906-03, 2007.

Gong, Y., Andelman, G., Neumark, G. F., O'Brien, S., Kuskovsky, I. L., Origin of defect-related green emission from ZnO nanoparticles: effect of surface modification, *Nanoscale Res. Lett.*, 2, 297-302, 2007.

Gu, Q. L., Ling, C. C., Chen, X. D., Cheng, C. K., Ng, A. M. C., Beling, C. D., Fung, S., Djurišić, A. B., Lu, L. W., Brauer, G., and Ong, H. C., Hydrogen peroxide treatment induced rectifying behavior of Au/n-ZnO contact, *Appl. Phys. Lett.,* 90, 122101-01-0122101-03, 2007.

Gür, E., Tüzemen, Kihç, S. B., and Coşkun, C., High-temperature Schottky diode characteristics of bulk ZnO, *J. Phys., Condens. Matter,* 19, 196206-01-196206-08, 2007.

Huang, X. J. and Choi, Y. K., Chemical sensors based on nanostructured materials, *Sens. Actuators B,* 122, 659-671, 2007.

Klingshirn, C., ZnO: From basics towards applications, *Phys. Status Solidi B -Basic Solid State Phys.,* 244, 3027-3073, 2007.

Liu, K. W., Ma, J. G., Zhang, J. Y., Lu, Y. M., Jiang, D. Y., Li, B. H., Zhao, D. X., Zhang, Z. Z., Yao, B., and Shen, D. Z., Ultraviolet photoconductive detector with high visible rejection and fast photoresponse based on ZnO thin film. *Solid State Electron,*51, 757-761, 2007.

Mandalapu, L. J., Xiu, F. X., Yang, Z., and Liu, J. L., Ultraviolet photoconductive detectors based on Ga-doped ZnO films grown by molecular beam epitaxy, *Solid-State Electron.*, 51, 1014-1017, 2007.

Mosbacker, H. L., El Hage, S., Gonzalez, M., Ringel, S. A., Hetzer, M., Look, D. C., Cantwell, G., Zhang, J., and Song, J. J., Brillson L. J., Role of subsurface defects in metal-ZnO,0001¯ Schottky barrier formation, *J. Vac. Sci. Technol. B*, 25, 1405-1411, 2007.

Nakano, M., Tsukazaki, A., Gunji, R. Y., Ueno, K., Ohtomo, A., Fukumura, T., and Kawasaki, M., Schottky contact on a ZnO (0001) single crystal with conducting polymer, *Appl. Phys. Lett*., 91, 142113-01-142113-03, 2007.

Reddy, N. K., Ahsanulhaq, Q., Kim, J. H., Devika, M., and Hahn, Y B., Selection of non-alloyed ohmic contacts for ZnO nanostructure based devices, *Nanotechnology*, 18,445710-01-445710-07, 2007.

Sadek, A. Z., Choopun, S., Wlodarski, W., Ippolito, S. J., and Kalantar-zadeh, K., Characterization of ZnO nanobelt-based gas sensor for H_2, NO_2, and hydrocarbon sensing, *IEEE Sens.*, 7, 919-924, 2007.

Schifano, R., Monakhov, E. V., Grossner, U., and Svensson, B. G., Electrical characteristics of palladium Schottky contacts to hydrogen peroxide treated hydrothermally grown ZnO, *Appl. Phys. Lett.*, 91, 193507-01-193507-03, 2007.

Schmidt-Mende, L., and Judith, L. MacManus-Driscoll, ZnO nanostructures, defects and devices, *Materials today*, 10, 40-48, 2007.

Selim, F. A., Weber, M. H., Solodovnikov, D., and Lynn, K. G., Nature of native defects in ZnO, *Phys. Rev. Lett.*, 99, 085502-01-085502-04, 2007.

Soci, C., Zhang, A., Xiang, B. Dayeh, S. A., Aplin, D. P. R., Park, J., Bao, X. Y., Lo, Y. H., and Wang, D., ZnO nanowire UV photodetectors with high internal gain, *Nano Lett.*, *7*, 1003-1009, 2007.

Sokol A. A., French, S. A., Bromley, S. T., Catlow, A. Richard C., Dam, Huub J. J. van and Sherwood, P., Point defects in ZnO, *Faraday Discuss*., 134, 267-282, 2007.

Song, J., and Lim, S., Effect of seed layer on the growth of ZnO nanorods, *J. Phys. Chem. C*, 111, 596-600, 2007.

Tang, Y., Luo, L., Chen, Z., Jiang, Y., Li, B., Jia, Z., and Xu, L., Electrodeposition of ZnO nanotube arrays on TCO glass substrates, *Electrochem. Commun.*, 9, 289-292, 2007.

Wang, K., Vygranenko, Y., and Nathan, A., ZnO-Based p-i-n and n-i-p Heterostructure Ultraviolet Sensors: A Comparative Study, *J. Appl. Phys*., 101, 114508-01-114508-05, 2007.

Wang, X. N., Wang, Y., Mei, Z. X., Dong, J., Zeng, Z. Q., Yuan, H. T., Zhang, T. C., Dua, X. L., Jia, J. F., Xueb, Q. K., Zhang, X. N., Zhang, Z., Li, Z. F. and Lu, W., Low-temperature interface engineering for high-quality ZnO epitaxy on Si (111) substrate, *Appl. Phys. Lett*., 90, 151912-01-151912-03, 2007.

Young, S. J., Ji, L. W., Chang, S. J., Liang, S. H., Lam, K. T., Fang, T. H., Chen, K. J., Du, X. L., and Xue, Q. K., ZnO-based MIS photodetectors, *Sens. Actuators. A*, 135, 529-533, 2007.

Ajimsha, R. S., Jayaraj, M. K., and L. M. Kukreja, Electrical Characteristics of n-ZnO/p-Si Heterojunction Diodes Grown by Pulsed Laser Deposition at Different Oxygen Pressures, *J. Electron. Mater.,* 37, 770-775, 2008.

Ajimsha, R. S., Growth and characterization of ZnO based heterojunction diodes and ZnO nanostructures by pulsed laser ablation, Ph.D thesis, Department of Physics, Cochin University of Science and Technology India , 2008.

Allen, M. W., and Durbin, S. M., Influence of oxygen vacancies on Schottky contacts to ZnO, *Appl. Phys. Lett.,* 92, 122110-01-122110-03, 2008.

Allen, M. W., Schottky contact formation on bulk Zinc oxide, Ph. D thesis, University of Canterbury, Christchurch, New Zealand, 2008.

Cha, S. N., Song, B. G., Jang, J. E., Jung, J. E., Han, I. T., Ha, J. H., Hong, J. P., Kang, D. J., and Kim, J. M., Controlled growth of vertically aligned ZnO nanowires with different crystal orientation of the ZnO seed layer, *Nanotechnology*, 19, 235601-01-235601-03, 2008.

Chen, L. C., Pan, C. N., Photoresponsivity enhancement of ZnO/Si Photodiodes through use of an ultrathin oxide interlayer, *Eur. Phys. J. Appl. Phys*., 44, 43-46, 2008.

Duan, X., Nanowire Thin-Film Transistors: A new avenue to high-performance macroelectronics, *IEEE Tran. Elect. Devices*, 5, 3056-3062, 2008.

Dutta, M. and Basak, D., p-ZnO/n-Si heterojunction: Sol-gel fabrication, photoresponse properties, and transport mechanism, *Appl. Phys. Lett.,* 92, 212112-01-212112-03, 2008.

Ismail, A. R., Al-Naimi, A., and Al-Ani, A. A., Studies on fabrication and characterization of a high-performance Al-doped ZnO/n-Si(111) heterojunction photodetector, *Semicond. Sci. Technol.,* 23, 075030-01-075030-06, 2008.

Klason, P., Nur, O., and Willander, M., Electrical characteristics and stability of gold and palladium Schottky contacts on ZnO nanorods, *Nanotechnology*, 19, 475202-01-475202-05, 2008.

Lee, C. T. W., Harvesting Philosopher's Wool: A study in the growth, structure and optoelectrical behaviour of epitaxial ZnO, Ph.D thesis, University of Canterbury, Christchurch, New Zealand, 2008.

Lee, C., Park, A., Cho, Y. J., Lee, W. I., Kim, H. W., The role of the Zn buffer layers in the structural and photoluminescence properties of ZnO films on Zn buffer layers deposited by RF magnetron sputtering, *Vacuum*, 82, 1364-1366, 2008.

Li, C., Fang, G., Li, J., Ai, L., Dong, B., and Zhao, X., Effect of seed layer on structural properties of ZnO nanorod arrays grown by vapor-phase transport, *J. Phys. Chem. C*, 112, 990-995, 2008.

Lin, Y. -Y., Chen, C. -W., Yen, W. -C., Su, W. -F., Ku, C. -H., and Wu, J. -J., Near- ultraviolet photodetector based on hybrid polymer/Zinc oxide nanorods by low temperature solution process, *Appl. Phys. Lett.,* 92, 233301-01-233301-03, 2008.

Lv, Y., and Wan, L., Recent progress of ohmic contact on ZnO, International conference on electronic packaging technology & high density packaging (ICEPT-HDP 2008) Shanghai, China, 1-4, 2008.

Nakano, M., Makino, T., Tsukazaki, A., Ueno, K., Ohtomo, A., Fukumura, T., Yuji, H., Akasaka, S., Tamura, K., Nakahara, K., Tanabe, T., Kamisawa, A., and Kawasaki, M., Transparent polymer Schottky contact for a high performance visible-blind ultraviolet photodiode based on ZnO. *Appl. Phys. Lett.,* 93, 123309-01-123309-03, 2008.

Reddy, N. K., Ahsanulhaq, Q., Kim, J. H., and Hahn, Y. B., Well-aligned ZnO nanorods for device applications: synthesis and characterisation of ZnO nanorods and n-ZnO/p-Si heterojunction diodes, *Europhys. Lett.,* 81, 38001-01-38001-06, 2008.

Sun, H., Luo, M., Weng, W., Cheng, K., Du, P., Shen, G., and Han, G., Room-temperature preparation of ZnO nanosheets grown on Si substrates by a seed-layer assisted solution route, *Nanotechnology*, 19, 125603-01-125603-06, 2008.

Wang, N., Cai, Y., and Zhang, R.Q., Growth of nanowires, *Mater. Sci. Eng. R,* 60, 1-51, 2008.

Xu, Z., Hwang, J. -Y., Li, B., Huang, X., and Wang, H., The characterization of various ZnO nanostructures using field-emission SEM, *JOM*, 60, 29-32, 2008.

Yıldız, D. E., Altındal, Ş., and Kanbur, H., Gaussian distribution of inhomogeneous barrier height in Al/SiO2/p-Si Schottky diodes, *J. Appl. Phys*., 103, 124502-01-124502-07, 2008.

Young, S. J., Ji, L. -W., Chang, S. J., Chen, Y. P., and Peng, S. -M., ZnO Schottky diodes with iridium contact electrodes, *Semicond. Sci. Technol.,* 23, 085016-01-085016-05, 2008.

Zhao, J. Z., Liang, H. W., Sun, J. C., Bian, J. M., Feng, Q. J., Hu, L. Z., Zhang, H. Q., Liang, X. P., Luo, Y. M., and Du, G. T., Electroluminescence from n-ZnO/p-ZnO : Sb homojunction light emitting diode on sapphire substrate with metal–organic precursors doped p-type ZnO layer grown by MOCVD technology, *J. Phys. D: Appl. Phys.,* 41, 195110-01-195110-04, 2008.

Zhu, H., Shan, C. X., Yao, B., Li, B. H., Zhang, J. Y., Zhao, D. X., Shen, D. Z., and Fan, X. W., High spectrum selectivity ultraviolet photodetector fabricated from an n-ZnO/p-GaN heterojunction. *J. Phys. Chem. C*, 112, 20546–20548, 2008.

Allen, M. W., Weng, X., Redwing, J. M., Sarpatwari, K., Mohney, S. E., Wenckstern, H. v., Grundmann, M., and Durbin, S. M., Temperature-dependent properties of nearly ideal ZnO Schottky diodes, *IEEE Trans. Electron. Device,* 56, 2160-2164, 2009.

Aydoğan, Ş., Çınar, K., Asıl, H., Coşkun, C., and Türüt, A., Electrical characterization of Au/n-ZnO Schottky contacts on n-Si, *J. Alloy Compd.*, 476, 913–918, 2009.

Chang, S. P., Chuang, R. W., Chang, S. J., Lu, C.Y., Chiou, Y.Z., and Hsieh, S.F., Surface HCl treatment in ZnO photoconductive sensors, *Thin Solid Films*, 517, 5050-5053, 2009.

Chen, Z. H., Tang, Y. B., Liu, Y., Yuan, G. D., Zhang, W. F., Zapien, J. A., Bello, I., Zhang, W. J., Lee, C. S., and Lee, S. T., ZnO nanowire arrays grown on Al:ZnO buffer layers and their enhanced electron field emission, *J. Appl. Phys*., 106, 064303-01-064303-06, 2009.

Fang. M., Zeisberg W. M., Condon, C., Ogryzko, V., Danchin, A., and Mechold, U., Degradation of nanoRNA is performed by multiple redundant RNases in Bacillus subtilis, *Nucl Acids Res,* 37, 5114-51125, 2009.

Janotti, A. and Walle, C. G. V., Fundamentals of zinc oxide as a semiconductor, *Rep. Prog. Phys.*, 72, 126501-01-126501-29, 2009.

Kim, J. H., Moon, J. Y., Lee, H. S., Han, W. S., Cho, H. K., Lee, J. Y., and Kim, H. S., Al/Au ohmic contact to n-ZnO by dc sputtering, *Mat. Sci. Eng. B*, 165, 77-79, 2009.

Lajn, A., Wenckstern, H. v., Zhang, Z., Czekalla, C., Biehne, G., Lenzner, J., Hochmuth, H., Lorenz, M., Grundmann, M., Wickert, S., Vogt, C., and Denecke, R., Properties of reactively sputtered Ag, Au, Pd, and Pt Schottky contacts on *n*-type ZnO, *J. Vac. Sci. Technol. B*, 27,1769-1773, 2009.

Majumdar, S., and Banerji, P., Temperature dependent electrical transport in p-ZnO/n-Si heterojunction formed by pulsed laser deposition, *J. Appl. Phys.,* 105, 043704-01-043704-04, 2009.

Majumdar, S., Chattopadhyay, S., and Banerji, P., Electrical characterization of p-ZnO/p-Si heterojunction, *Appl. Surf. Sci.*, 254, 6141- 6144, 2009.

Mtangi, W., Auret, F. D., Nyamhere, C. P., Janse, v. R. J., Diale, M., and Chawanda, A., Analysis of temperature dependent I-V measurements on Pd/ZnO Schottky barrier diodes and the determination of the Richardson constant, *Physica B*, 404, 1092-1096, 2009.

Mtangi, W., Electrical characterization of ZnO and metal/ZnO contacts, Ph.D thesis, University of Pretoria, 2009.

Periasamy, C., and Chakrabarti, P., Structural and electrical properties of metal contacts on *n*-type ZnO thin film deposited by vacuum coating technique, *J. Vac. Sci. Technol. B,* 275, 2124-2127, 2009.

Sarpatwari, K., Awadelkarim, O. O., Allen, M. W., Durbin S. M., and Mohney, S. E., Extracting the Richardson constant: IrOx/n-ZnO Schottky diodes, *Appl. Phys. Lett*., 94, 242110-01-242110-03, 2009.

Sarpatwari, K., Toward understanding the electrical properties of metal/semiconductor Schottky contacts: the effects of barrier inhomogeneities and geometry in bulk and nanoscale structures, Ph.D thesis, The Pennsylvania State University, USA, 2009.

Schifano, R., Monakhov, E. V., Svensson, B. G., and Diplas, S., Surface passivation and interface reactions induced by hydrogen peroxide treatment of n-type ZnO (000), *Appl. Phys. Lett***.,** 94, 132101-01-132101-03, 2009.

Schifano, R.**,** Schottky contacts and electrical characterization of *n*-type hydrothermally grown ZnO, Ph.D thesis, University of Oslo, 2009.

Shan, C. X., Zhang, J. Y., Yao, B., Shen, D. Z., Fan, X. W., and Choy, K. L., Ultraviolet photodetector fabricated from atomic-layer-deposited ZnO films. *J. Vac. Sci. Technol. B,* 27, 1765-1768, 2009.

Zhai, T., Fang, X., Liao, M., Xu, X., Zeng, H., Yoshio, B., and Golberg, D., A comprehensive review of one-dimensional metal-oxide nanostructure photodetectors, *Sensors*, 9, 6504-6529, 2009.

Zhao, J., and Hu, L., Improvement in crystal quality of ZnO film on Si substrate by using a homo-buffer layer*, Mat Sci. Semicon. Proc,* 12, 233–237, 2009.

Ali, G. M., and Chakrabarti, P., ZnO-based inter-digitated MSM and MISIM ultraviolet photodetectors, *J. Phys. D: Appl. Phys.*, 43, 415103-010415103-08, 2010.

Ali, G. M., Dwivedi, A. D. D., Singh, S., and Chakrabarti, P., Interface properties and junction behavior of Pd contact on ZnO thin film grown by vacuum deposition technique, *Phys. Status Solidi C*, 7, 252– 255, 2010.

Bacaksiz, E., Ankayab, G. C., Polata, I., Yılmaza, S., Duranc C., and Altunbas, M., Structural and electrical characterization of ZnO-based homojunctions, *J. Alloy Compd*., 496, 560-565, 2010.

Biswas, M., Growth and characterization of ZnO nanostructures: excitonic properties and morphology, Ph.D thesis, Dublin City University, 2010.

Chae, K. -W., Zhang, Q., Kim, J. S., Jeong, Y. -H., and Cao, G., Low-temperature solution growth of ZnO nanotube arrays, *Beilstein J. Nanotechnol.*, *1,* 128–134, 2010.

Choi, J. -H., Das, S. N., Moon, K. -J., Kar, J. P., Myoung, J. -M., Fabrication and characterization of p-Si nanowires/ZnO film heterojunction diode, *Solid-State Electron*., 54, 1582-1585, 2010.

Choi, Y.-S., Kang, J.-W., Hwang, D.-K., and Park, S.-J., Recent advances in ZnO-based light-emitting diodes, *IEEE Trans. Electron Devices*, 57, 26-41, 2010.

Das, S. N., Choi, J. -H., Kar, J. P., Moon, K. -J., Lee, T. I., and Myoung, J. -M., Junction properties of Au/ZnO single nanowire Schottky diode, *Appl. Phys. Lett.,* 96, 092111-01-092111-03, 2010. **(a)**

Das, S. N., Moon, K. -J, Kar, J. P., Choi, J. -H., Xiong, J., Lee, T. I., and Myoung, J. -M, ZnO single nanowire-based UV detectors, *Appl. Phys. Lett.,* 97, 022103-01- 022103-013, 2010. **(b)**

Fang, Y., Wang, Y., Wan, Y., Wang, Z., and Sha, J., Detailed study on photoluminescence property and growth mechanism of ZnO nanowire arrays grown by thermal evaporation, *J. Phys. Chem. C*, 114, 12469–12476, 2010.

Kim, H., Kim, H., and Kim, D. -W., Silver Schottky contacts to a-plane bulk ZnO, *J. Appl. Phys.,*108, 074514-01-074514-05, 2010.

Kim, J., Yun, J. -H., Kim, C. H., Park, Y. C., Woo, J. Y., Park, J., Lee, J. -H., Yi, J., and Han, C. -S., ZnO nanowire-embedded Schottky diode for effective UV detection by the barrier reduction effect, *Nanotechnology*, 21, 115205-01-115205-05, 2010.

Kyoung, J. C., and Jang H. W., One-dimensional oxide nanostructures as gas-sensing materials: review and issues, *Sensors,* 10, 4083-4099, 2010.

Lee, J. D., Park, C. Y., Kim, H. S., Lee J. J., and Choo, Y. G., A study of conduction of ZnO film/p-Si heterojunction fabricated by photoinduced electrodeposition under illumination, *J. Phys. D: Appl. Phys*., 43, 365403-01-365403-06, 2010.

Lee, S., Lee, Y., Kim, D. Y., and Kang, T. W., Impact of defect distribution on transport properties for Au/ZnO Schottky contacts formed with H_2O_2-treated unintentionally doped n-type ZnO epilayers, *Appl. Phys. Lett*., 96, 142102-01-142102-03, 2010.

Liu, Kewei, Makoto, S., and Masakazu, A., ZnO-based ultraviolet photodetectors, *Sensors*, 10, 8604-8634, 2010.

Periasamy, C., Prakash, R., and Chakrabarti, P., Effect of post annealing on structural and optical properties of ZnO thin films deposited by vacuum coating technique, *J Mater Sci: Mater Electron*, 21, 309-315, 2010.

Su, Y. K., Peng, S. M., Ji, L. W., Wu, C. Z., Cheng, W. B., and Liu, C. H., Ultraviolet ZnO nanorod photosensors, *Langmuir*, 26, 603-606, 2010.

Wenckstern, H. V., Muller, S., Biehne, G., Hochmuth, H., Lorenz, M., and Grundmann, M., Dielectric passivation of ZnO-based Schottky diodes. *J. Electron. Mater., 39*, 559-562, 2010.

Al-Heniti, S., Badran, R. I., Al-Ghamedi, A. A., and Al-Age, F. A., Electrical properties of p-Si/n-ZnO nanowires heterojunction devices, *Adv. Sci. Lett*., 4, 1-5, 2011.

Bayan, S., and Mohanta, D., Defect mediated optical emission of randomly oriented ZnO nanorods and unusual rectifying behavior of Schottky nanojunctions, *J. Appl. Phys.,* 110, 054316-01-054316-06, 2011.

Brillson, L. J., and Y. Lu, ZnO Schottky barriers and ohmic contacts, *J. Appl. Phys.*, 109, 121301-01-121301-33, 2011

Dwivedi, A. D. D., Analytical modeling and numerical simulation of P+-Hg0.69 d0.31Te/n-Hg0.78Cd0.22Te/CdZnTe heterojunction photodetector for a long-wavelength infrared free space optical communication system, *J. Appl. Phys.*, 110, 043101-01-043101-10, 2011.

Ghayour, H., Rezaie, H. R., Mirdamadi, Sh., and Nourbakhsh, A. A., The effect of seed layer thickness on alignment and morphology of ZnO nanorods, *Vacuum*, 86, 101e105, 2011.

Guozhong, C., and Ying, W., Nanostructures and Nanomaterials: Synthesis, properties, and applications (2nd Edition) (World scientific series in nanoscience and nanotechnology), 2011.

Krajewski, T. A., Luka, G., Gieraltowska, S., Zakrzewski, A. J., Smertenko, P. S., Kruszewski, P., Wachnicki, L., Witkowski, B. S., Lusakowska, E., Jakiela, R., Godlewski, M., and Guziewicz, E., Hafnium dioxide as a passivating layer and diffusive barrier in ZnO/Ag Schottky junctions obtained by atomic layer deposition, *Appl. Phys. Lett.,* 98, 263502-01-263502-03, 2011.

Lee, H. K., Kim, M. S., and Yu, J. S., Effect of AZO seed layer on electrochemical growth and optical properties of ZnO nanorod arrays on ITO glass, *Nanotechnology,* 22, 445602-01-445602-08, 2011.

Logeeswaran, V. J., Jinyong, Oh, Avinash, P., Nayak, Aaron, M., Katzenmeyer, Kristin, H., Gilchrist, Sonia Grego, Nobuhiko, P., Kobayashi, Shih-Yuan Wang, A. Alec Talin, Nibir K. Dhar, and M. Saif Islam, A perspective on nanowire photodetectors: current status, future challenges, and opportunities, *IEEE J. Sel. Top. Quant. Electron.*, 17, 1002-1032, 2011

Periasamy, C., and Chakrabarti, P., Electrical and optical characterization of ZnO based nano and large-area Schottky contacts, *Curr. Appl. Phys.,* 11, 959-964, 2011.

Sarpatwari, K., Mohney, S. E., and Awadelkarim, O. O., Effects of barrier height inhomogeneities on the determination of the Richardson constant, *J. Appl. Phys.,* 109, 014510-01-014510-07, 2011.

Singh, S., Ali, G. M., and Chakrabarti, P., Fabrication and characterization of ZnO thin films prepared by thermal oxidation of vacuum deposited Zn, *Sci. Adv. Mater.*,3, 926–931, 2011.

Wu, J. M., Chen, Y. -R., and Lin, Y. -H., Rapidly synthesized ZnO nanowires by ultraviolet decomposition process in ambient air for flexible photodetector, *Nanoscale*, 3, 1053-1058, 2011.

Xu, F., and Sun, L., Solution-derived ZnO nanostructures for photoanodes of dye-sensitized solar cells, *Energy Environ. Sci.*, 4, 818-841, 2011.

Yıldırım, M. A., Güzeldir, B., Ates, A., and Sagˇlam, M., Temperature dependent current–voltage characteristics of the Zn/ZnO/n-Si/Au–Sb structure with ZnO interface layer grown on n-Si substrate by SILAR method, *Microelectron. Eng.,* 88, 3075–3079, 2011.

Abdulgafour, H. I., Hassan, Z., Ahmed, N. M., and Yam, F. K., Comparative study of ultraviolet detectors based on ZnO nanostructures grown on different substrates, *J. Appl. Phys.,* 112, 074510-01-074510-09, 2012.

Al-Heniti, S., Badran, R. I., Umar, A., Al-Ghamdi, A., Kim, S. H., Al-Marzouki, F., Al-Hajry, A., Al-Sayari, S. A., and Al-Harbi, T., Temperature dependant structural and electrical properties of ZnO nanowire networks, *J. Nanosci. Nanotechnol.* 12, 68-74, 2012.

Ali, G. M., and Chakrabarti, P., Fabrication and characterization of thin film ZnO Schottky contacts based UV photodetectors: A comparative study, *J. Vac. Sci. Technol. B,* 30, 031206-01-031206-07, 2012.

Anta J. A., Guillén, E. and T.-Z., Ramón, ZnO-based dye-sensitized solar cells, *J. Phys. Chem. C,* 116, 11413-11425, 2012.

Baydogan, N., Karacasu, O., and Cimenoglu, H., Effect of annealing temperature on ZnO:Al/p-Si heterojunctions, *Thin Solid Films*, 520, 5790–5796, 2012.

Chirakkara, S., and Krupanidhi, S. B., Study of n-ZnO/p-Si (100) thin film heterojunctions by pulsed laser deposition without buffer layer, *Thin Solid Films,* 520, 5894–5899, 2012.

Faraz, S. M., Willander, M., and Wahab, Q., Interface state density distribution in Au/n-ZnO nanorods Schottky diodes, *IOP Conf. Ser.: Mater. Sci. Eng.,* 34, 012006-01-012006-07, 2012.

Hussain, I., Soomro, M. Y., Bano, N., Nur, O., and Willander, M., Interface trap characterization and electrical properties of Au-ZnO nanorod Schottky diodes by conductance and capacitance methods, *J. Appl. Phys*, 112, 064506-01-064506-06, 2012.

Hwang, J. D., and Chen, Y. H., Carrier transport mechanism on ZnO nanorods/p-Si heterojunction diodes with various atmospheres annealing hydrothermal seed-layer, *Thin Solid Films*, 520, 5409-5412, 2012.

Khanlary, M. R., Vahedi, V., and Reyhani, A., Synthesis and characterization of ZnO nanowires by thermal oxidation of Zn thin films at various temperatures, *Molecules,* 17, 5021-5029, 2012.

Pür F. Z., and Tataroğlu, A., Analysis of the series resistance and interface states of Au/Si_3N_4/n-Si (metal–insulator–semiconductor) Schottky diodes using *I–V* characteristics in a wide temperature range, *Phys. Scr.,* 86, 035802-01-035802-07, 2012.

Sang, D. D., Li, H. D., Cheng, S. H., Wang, Q. L., Yu, Q., and Yang, Y. Z., Electrical transport behavior of n-ZnO nanorods/p-diamond heterojunction device at higher temperatures, *J. Appl. Phys.*, 112, 036101-01-036101-03, 2012.

Shao, D., Yu, M., Lian, J., and Sawyer, S., Heterojunction photodiode fabricated from hydrogen treated ZnO nanowires grown on p-silicon substrate, *Appl. Phys. Lett*. 101, 211103-01-211103-03, 2012.

Talam, S., Karumuri, S. R., and Gunnam, N., Synthesis, characterization, and spectroscopic properties of ZnO nanoparticles, *ISRN Nanotechnology*, 2012, 372505-01-372505-06, 2012.

Tam N.-D., Singh K., Meyyappan M. and Oye M. M., Vertical ZnO nanowire growth on metal substrates, *Nanotechnology*, 23, 194015-01-194015-05, 2012.

Tiwari, J. N., Tiwari, R. N., and Kim, K. S., Zero-dimensional, one-dimensional, two-dimensional and three-dimensional nanostructured materials for advanced electrochemical energy devices, *Prog. Mater. Sci.,* 57, 724-803, 2012.

Wang, X., Piezoelectric nanogenerators-Harvesting ambient mechanical energy at the nanometer scale, *Nano Energy*, 1, 13-24, 2012.

Wu, J. -H., Liu, S. -Y., Li, S., Jiang, Y.-l., Ru, G. -P., Qu, X. -P., The influence of ZnO seed layers on n-ZnO nanostructure/p-GaN LEDs, *Appl Phys. A*, 109, 489-495, 2012.

Yao, I. -C., Tseng, T. -Y., Lin, P., ZnO nanorods grown on polymer substrates as UV photodetectors, *Sens. and Actuat. A*, 178, 26- 31, 2012.

Abbasi, M. A., Ibupoto, Z. H., Hussain, M., Nur, O., and Willander, M., The fabrication of white light-emitting diodes using the n-ZnO/NiO/p-GaN heterojunction with enhanced luminescence, *Nanoscale Res Lett.,* 8:320, 2013.

Ghafouri, V., Ebrahimzad, A., and Shariati, M., The effect of annealing time and temperature on morphology and optical properties of ZnO nanostructures grown by a self-assembly method, *Scientia Iranica, Transactions F: Nanotechnology,* 20, 1039-1048, 2013.

Hazra, P., Singh, S. K., and Jit, S., Studies on ZnO/Si heterojunction diode grown by atomic layer deposition technique, *J. Nanoelectron. Optoelectron,* 8, 378-382, 2013.

Hussain, I., Soomro, M. Y., Bano, N., Nur, O., and Willander, M., Systematic study of interface trap and barrier inhomogeneities using I-V-T characteristics of Au/ZnO nanorods Schottky diode, *J. App. Phys.*, 113, 234509-01-234509-06, 2013.

Hwang, J. -D., Kung, C. -Y., and Lin, Y. -L., Non-surface-treated Au/ZnO Schottky diodes using pre-annealed hydrothermal or sol-gel seed layer, *IEEE Trans Nano.,*12, 35-39, 2013. **(a)**

Hwang, J. D., Lin, Y. L., and Kung, C. Y., Enhancement of the Schottky barrier height of Au/ZnO nanocrystal by zinc vacancies using a hydrothermal seed layer, *Nanotechnology*, 24, 115709-01-115709-05, 2013. **(b)**

Jin, X., Götz, M., Wille, S., Mishra, Y. K., Adelung, R., and Zollfrank, C., A novel concept for self-reporting materials: stress sensitive photoluminescence in ZnO tetrapod filled elastomers, 25, 1342-1347, 2013.

Korucu, D., Turut, A., and Efeoglu, H., Temperature dependent I–V characteristics of an Au/n-GaAs Schottky diode analyzed using Tung's model, *Physica B,* 414, 35-41, 2013.

Sharma, B. L., Purohit, R. K., Pamplin, B. R., Technology & Engineering, Semiconductor Heterojunctions, ISBN: 978-0-08-017747-2, 2013

Singh, A. K., and Nakate, U. T., Photocatalytic properties of microwave-synthesized TiO2 and ZnO nanoparticles using malachite green dye, *J. Nanopart.,* 2013, 310809-01-310809-07, 2013.

Wei, X., Zhao, R., Shao, M., Xu, X., and Huang, J., Fabrication and properties of ZnO/GaN heterostructure nanocolumnar thin film on Si (111) substrate, *Nanoscale Research Letters*, 8:112, 2013.

Xu C. X., Yang, C., Gu B X, *et al.* Nanostructured ZnO for biosensing applications, *Chin Sci Bull* , 58, 2563-2566, 2013

Zhang, Y., Nayak, T. R., Hong, H., and Cai, W., Biomedical applications of zinc oxide nanomaterials, *Curr. Mol. Med*. 13, 1633-1645, 2013.

Hazra, P., and Jit, S., *p*-Si Nanowires/*n*-ZnO thin film based core–shell heterojunction diodes with improved effective Richardson constant, *J. Nanosci. Nanotechnol.*,14, 5380-5385, 2014.

Ranwa, S., Kulriya, P. K., Dixit, V., and Kumar, M., Temperature dependent electrical transport studies of self-aligned ZnO nanorods/Si heterostructures deposited by sputtering**,** *J. App. Phys,* 115, 233706-01-233706-06, 2014.

Tsiarapas, C., Girginoudi, D., and Georgoulas, N., Electrical characteristics of Pd Schottky contacts on ZnO films, *Mater. Sci. Semicond. Process.,* 17, 199-206, 2014.

Xu J., Chen, Z., Zapien, J. A., Lee, C.-S., and Zhang, W., Surface engineering of ZnO nanostructures for semiconductor-sensitized solar cells, *Adv. Mater.,* 26, 5337-5367, 2014.

Yadav, A. B., Pandey, A., and Jit, S., Pd Schottky contacts on sol–gel derived ZnO thin films with nearly ideal Richardson constant, *IEEE Electron. Device Lett.,* 35, 729 -731, 2014.

http://www.phy.mtu.edu