

REFERENCES

REFERENCES

- 1) http://en.wikipedia.org/wiki/Thin_film_solar_cell
- 2) http://www.solarnovus.com/index.php?Option=com_content&view=article&id=890:thin-film-photovoltaic-cells-when-less-is-more&catid=38:application-tech-features&Itemid=246
- 3) Kelvin Alaba Aduloju and Fabian Ezema, Effect of natural dye extracting temperature on the performance of dye sensitized solar cells using petrocarpus erinaceus, archives of physics research, 2011, 2(3):191-196.
- 4) Chang, H.M. Wu, T.L. Chen, K.D. Huang, C.S. Jwo, Y.J. Lo, Dye-sensitized solar cell using natural dyes extracted from spinach and ipomoea, Journal of Alloys and Compounds 495 (2010) 606–610.
- 5) Antonio Ota´vio T. Patrocinio , Eucler B. Paniago , Roberto M. Paniago , Neyde Y. Murakami Iha, XPS characterization of sensitized n-TiO₂ thin films for dye-sensitized solar cell applications, , Applied Surface Science 254 (2008) 1874–1879.
- 6) <http://samsungdi.com/nextenergy/dssc-solar-cell-battery.jsp>
- 7) Riyaz Ahmad Mohamed Ali and Nafarizal Nayan, fabrication and aanalysis of dye sensitized solar cell using natural dye extracted from dragon fruit, international journal of integrated (issue on electrical and electronic engineering)
- 8) A.R. Hernandez Martinez, M. Estevez, S. Vargas, F. Quintanilla, R. Rodríguez Natural Pigment-Based Dye-Sensitized Solar Cells, Journal of Applied Research and Technology, Vol. 10 No.1, February 2012
- 9) Giuseppe Calogero , Gaetano Di Marco, Red Sicilian orange and purple eggplant fruits as natural sensitizers for dye-sensitized solar cells, Solar Energy Materials & Solar Cells 92 (2008) 1341– 1346.
- 10) Huizhi Zhou, Liqiong Wu, Yurong Gao, Tingli Ma, Dye-sensitized solar cells using 20 natural dyes as sensitizers, Journal of Photochemistry and Photobiology A: Chemistry 219 (2011) 188–194.
- 11) Christian G. Garcia, André S. Polo and Neyde Y. Murakami Iha Photoelectrochemical solar cell using extract of *Eugenia jambolana* Lam as a natural sensitizer, Anais da Academia Brasileira de Ciências (2003) 75(2): 163-165.

- 12) <http://en.wikipedia.org/wiki/Jambul>
- 13) http://www.herbcyclopedia.com/index.php?option=com_zoo&task=item&item_id=224&Itemid=171.
- 14) A. Dakka, J. Lafait, M. Abd-Lefdil and C. Sella, Optical study of titanium dioxide thin film prepared by R.F. sputtering, *M.J. Condensed matter*, Volume 2, number 1, December 1999
- 15) El Goresy; Chen, M; Dubrovinsky, L; Gillet, P; Graup, G (2001). "An ultradense polymorph of rutile with seven-coordinated titanium from the Ries crater.". *Science* 293 (5534): 1467–70.
- 16) El Goresy, Ahmed; Chen, Ming; Gillet, Philippe; Dubrovinsky, Leonid; Graup, Günther; Ahuja, Rajeev (2001). "A natural shock-induced dense polymorph of rutile with α -PbO₂ structure in the suevite from the Ries crater in Germany". *Earth and Planetary Science Letters* 192 (4): 485.
- 17) Reg.P.Smestad, *Solar Energy Material Solar Cells* 55(1998), pg: 157-178.
- 18) Lewis, Nathan, "Nanocrystalline TiO₂". *Research*. California Institute of Technology. <http://nsl.caltech.edu/research.nt.html>. Retrieved October 9, 2009.
- 19) <http://cleantechnica.com/2012/06/09/titanium-dioxide-could-lead-to-low-cost-solar-and-fuel-cells/>
- 20) Paschotta, Rüdiger. "Bragg Mirrors". *Encyclopedia of Laser Physics and Technology*. RP Photonics. http://www.rp-photonics.com/bragg_mirrors.html. Retrieved May 1, 2009.
- 21) L.I.Maissel, R.Glang, *Hand Book of Thin film Techonology*, Mc-Graw Hill Book Company, Newyork (1970), pg: 1-3.
- 22) L.Holland, *Vacuum Deposition Of Thin film*, John Wiley, Newyork (1956), Pg: 1-5.
- 23) K.L.Chopra, S.Pandya, *Thin Solid Film*, Mc-Graw Hill Book Company, Newyork(1983).
- 24) A.Vancalster, F.Vanfleteren., et., al, *Journal of Applied Physics*, 64(1998)pg:3282.
- 25) http://en.wikipedia.org/wiki/Physical_vapor_deposition

- 26) S.M.Sze, *Physics and Semiconductor Devices*, Wiley, Newyork (1981), pg: 825.
- 27) Antony R.West, *Solid State Chemistry and Its Application*, Wiley Student Edition (1984) pg: 33-35.
- 28) ChemicalBathBruckman,http://en.wikipedia.org/wiki/Chemical_bath_deposition#cite_ref-0.
- 29) U.M. Patil , K.V. Gurav, Oh-Shim Joo, C.D. Lokhande Synthesis of photosensitive nanograined TiO₂ thin films by SILAR method,*Journal of Alloys and Compounds* 478 (2009) 711–715.
- 30) Sangmoon Park Elaine DiMasi, Young-Il Kim, Weiqiang Han, Patrick M. Woodward, Thomas Vogt ,The preparation and characterization of photocatalytically active TiO₂ thin films and nanoparticles using Successive-Ionic-Layer-Adsorption-and-Reaction, *Thin Solid Films* 515 (2006) 1250–1254.
- 31) H.M. Pathan, Sun-Ki Min, J.D. Desai, Kwang-Deog Jung, Oh-Shim Joo,Preparation and characterization of titanium dioxide thin films by SILAR method, *Materials Chemistry and Physics* 97 (2006) 5–9.
- 32) A.M. More, J.L. Gunjekar, C.D. Lokhande, Oh Shim Joo Fabrication of hydrophobic surface of titanium dioxide films by successive ionic layer adsorption and reaction (SILAR) method, *Applied Surface Science* 255 (2009) 6067–6072.
- 33) M. Stamate, I. Vascan, I. Lazar, G. Lazar, I. Caraman, M. Caraman,Bacau ,Optical and surface properties TiO₂ thin films deposited by dc magnetron sputtering method, University, Calea Marasesti nr.157, Bacau, 5500, Romania,*Journal of Optoelectronics and Advanced Materials* Vol. 7, No. 2, April 2005, p. 771 - 774
- 34) M.M.Hasan, A.S.M.A.Haseeb, R. Saidur, and H. H. Masjuki,Effects of Annealing Treatment on Optical Properties of Anatase TiO₂ Thin Films, *International Journal of Chemical and Biological Engineering* 1:2 2008.
- 35) Satyen K. Deb, Solar Dye-sensitized TiO₂ thin-film solar cell research at the National Renewable EnergyLaboratory *Energy Materials & Solar Cells* 88 (2005), 1–10.

- 36) K. Prabakar, Min-kyu Son, Daniel Ludeman, Hee-je Kim, Visible light enhanced TiO₂ thin film bilayer dye sensitized solar cells, *Thin Solid Films* 519 (2010) 894–899.
- 37) Hai Wang, Yong Liu , Hong Huang , Minyi Zhong , Hui Shen , Yuanhao Wang , Hongxing Yang, Low resistance dye-sensitized solar cells based on all-titanium substrates using wires and sheets, *Applied Surface Science* 255 (2009) 9020–9025.
- 38) Antonio Ota'v'io T. Patrocínio , Eucler B. Paniago , Roberto M. Paniago , Neyde Y. Murakami Iha, XPS characterization of sensitized n-TiO₂ thin films for dye-sensitized solar cell applications, *Applied Surface Science* 254 (2008) 1874–1879.
- 39) Masayuki Okuya, Koji Nakade, Shoji Kaneko, Porous TiO₂ thin films synthesized by a spray pyrolysis deposition (SPD) technique and their application to dye-sensitized solar cells, *Solar Energy Materials & Solar Cells* 70 (2002) 425–435
- 40) Jia Liu, Haotian Yang, Weiwei Tan, Xiaowen Zhou, Yuan Lin, Photovoltaic performance improvement of dye-sensitized solar cells based on tantalum-doped TiO₂ thin films, *Electrochimica Acta* 56 (2010) 396–400
- 41) Chuen-Shii Chou, Ru-Yuan Yang, Min-Hang Weng, Chun-Hung Yeh, Preparation of TiO₂/dye composite particles and their applications in dye-sensitized solar cell, *Powder Technology* 187 (2008) 181–189.
- 42) M.F. Hossain , S. Biswas , T. Takahashi , Y. Kubota , A. Fujishima, Investigation of sputter-deposited TiO₂ thin film for the fabrication of dye-sensitized solar cells, *Thin Solid Films* 516 (2008) 7149–715.
- 43) Huizhi Zhou, Liqiong Wu, Yurong Gao, Tingli Ma, Dye-sensitized solar cells using 20 natural dyes as sensitizers, *Journal of Photochemistry and Photobiology A: Chemistry* 219 (2011) 188–194
- 44) M. H. Buraidah, L. P. Teo, S. N. F. Yusuf, M. M. Noor, M. Z. Kufian, M. A. Careem, S. R. Majid, R. M. Taha, and A. K. Arof, TiO₂/Chitosan-NH₄I(+I₂)-BMII-Based Dye-Sensitized Solar Cells with Anthocyanin Dyes Extracted from Black Rice and Red Cabbage, *International Journal of Photoenergy*, Volume 2011, Article ID 273683, 11 pages
- 45) Nerine J. Cherepy, Greg P. Smestad, Michael Graetzel, and Jin Z. Zhang, Ultrafast Electron Injection: Implications for a Photoelectrochemical Cell Utilizing an

- Anthocyanin Dye-Sensitized TiO₂ Nanocrystalline Electrode, *J. Phys. Chem. B* 1997, *101*, 9342-9351
- 46) Christian G. Garcia, André S. Polo and Neyde Y. Murakami Iha, Photoelectrochemical solar cell using extract of *Eugenia jambolana* Lam as a natural sensitizer, *Anais da Academia Brasileira de Ciências* (2003) *75*(2): 163-165
- 47) V.Senthilnathan, S.Ganesan, S. Senthilnathan, V. Vijayakumar Gandhi, Novel automated inclined rotating substrate for DSSC Fabrication, *journal of optoelectronics and advanced materials* Vol. 12, No. 9, November 2010, p. 2272 – 2277
- 48) Kelvin Alaba Aduloju, and Fabian Ezema, Effect of natural dye extracting temperature on the performances of dye sensitized solar cells using *Petrocarpus Erinaceus*, *Archives of Physics Research*, 2011, *2* (3): 191-196
- 49) M. Malekshahi byranvand, M. H. bazargana, A. Nemati kharat, Fabrication and investigation of flexible dye sensitized nanocrystalline solar cell utilizing natural sensitizer operated with gold coated counter electrode, *Digest Journal of Nanomaterials and Biostructures* Vol. 5, No 3, July-September 2010, p. 645-650
- 50) A.R. Hernández-Martínez, M. Estevez, S. Vargas, F. Quintanilla, R. Rodríguez, Natural Pigment-Based Dye-Sensitized Solar Cells, *Journal of Applied Research and Technology*, Vol. 10 No.1, February 2012
- 51) Giuseppe Calogero, Gaetano Di Marco, Red Sicilian orange and purple eggplant fruits as natural sensitizers for dye-sensitized solar cells, *Solar Energy Materials & Solar Cells* *92* (2008) 1341– 1346
- 52) Giuseppe Calogero, Gaetano Di Marco, Silvia Cazzanti, Stefano Caramori, Roberto Argazzi, Aldo Di Carlo and Carlo Alberto Bignozzi, Efficient Dye-Sensitized Solar Cells Using Red Turnip and Purple Wild Sicilian Prickly Pear Fruits, *International Journal of Molecular Sciences* *2010*, *11*, 254-267;
- 53) Kartika Sari, Sunardi, Characterization of optical properties of the *sansevieria trifasciata* extract as dye sensitized solar cells (dssc), *International Journal of Basic & Applied Sciences IJBAS-IJENS* Vol: 11 No: 04 9,(2011)

- 54) H. Chang, H.M. Wu, T.L. Chen, K.D. Huang, C.S. Jwo, Y.J. Lo, Dye-sensitized solar cell using natural dyes extracted from spinach and ipomoea, *Journal of Alloys and Compounds* 495 (2010) 606–610
- 55) Khwanchit Wongchareea, Vissanu Meeyooa, Sumaeth Chavadej, Dye-sensitized solar cell using natural dyes extracted from rosella and blue pea flowers, *Solar Energy Materials & Solar Cells* 91 (2007) 566–571
- 56) Emerson Henrique de Faria, Alex Lemes Marçal, Eduardo José Nassar, Katia Jorge Ciuffi, Paulo Sergio Calefi, Sol-Gel TiO₂ Thin Films Sensitized with the Mulberry Pigment Cyanidin, *Materials Research*, Vol. 10, No. 4, 413-417, 2007
- 57) Riyaz Ahmad Mohamed Ali* and Nafarizal Nayan, Fabrication and analysis of dye-sensitized solar cell using natural dye extracted from dragon fruit, *International Journal of Integrated Engineering (Issue on Electrical and Electronic Engineering)*,
- 58) P.D. More, G.S. Shahan, H.P. Deshmukh, *Material science and physics* 80(2003) 48.
- 59) Ludmila Eckertova, *Physics of thin film*, Plenum press, Newyork (1986).
- 60) H.M. Pathan, Sun-Ki Min, J.D. Desai, Kwang-Deog Jung, Oh-Shim Joo, Preparation and characterization of titanium dioxide thin film by SILAR Method, *Material chemistry and physics* 97(2006)5
- 61) A.V. Nabok, *thin solid films*, 327 (1998), pg 510-540.
- 62) Skoog, et al. *Principles of Instrumental Analysis*. 6th ed. Thomson Brooks/Cole. 2007, 169-173, 349-351
- 63) D. Patidar, K. S. Rathore, N. S. Saxena, Kananbala Sharma, T. P. Sharma, Energy band gap and conductivity measurement of CdSe thin films, *Semiconductor and Polymer Science Laboratory*, 5-6, Vigyan Bhawan, Department of Physics, University of Rajasthan, Jaipur-302004 (India), Ph./Fax: +91-141-2704056.
- 64) http://en.wikipedia.org/wiki/Direct_and_indirect_band_gaps
- 65) *X-ray Diffraction*, by B.E. Warren, General Publishing Company, 1969, 1990 (Classic x-ray physics book)
- 66) *Elements of X-ray Diffraction*, 2nd Ed., by B.D. Cullity, Addison-Wesley, 1978
- 67) W.I.F. David, K. Shankland, L.P. Cusker, C.H. Baeslochu, *Structural determination from power diffraction data*.

- 68) Suzuki, E. (2002). "High-resolution scanning electron microscopy of immunogold-labelled cells by the use of thin plasma coating of osmium". *Journal of Microscopy*, 208 (3): 153–157. doi:10.1046/j.1365-2818.2002.01082.x.
- 69) Danilatos, G.D (1988). "Foundations of environmental scanning electron microscopy". *Advances in Electronics and Electron Physics* 71: 109–250.
- 70) <http://www.siliconfareast.com/edxwdx.htm>
- 71) <http://inventors.about.com/od/pstartinventions/a/Photoluminescen.html>.
- 72) <http://www.wcaslab.com/tech/tbftir.htm>.
- 73) <http://www.eaglabs.com/mc/fourier-transform-infrared-spectroscopy.html>
- 74) A.Goswami, *Thin film Fundamentals*, New age International Publishers, (1996) pg: 1-5.
- 75) Toshihiro Miyata, Satoshi Tsukada, Tadatsugu Minami, Preparation of anatase TiO₂ thin films by vacuum arc plasma evaporation, *Thin Solid Films* 496 (2006) 136–140.
- 76) Yanfeng Gao, Yoshitake Masuda, Zifei Peng, Tetsu Yonezawa and Kunihito Koumoto, Room temperature deposition of a TiO₂ thin film from aqueous peroxotitanate solution, *Journal of material chemistry* 14th January 2003.
- 77) V. Senthilkumar, M. Jayachandran, C. Sanjeeviraja, Preparation of anatase TiO₂ thin films for dye-sensitized solar cells by DC reactive magnetron sputtering technique, *Thin Solid Films* 519 (2010) 991–994.
- 78) R.S. Mane, Seung Jae Roh, Oh-Shim Joo, C.D. Lokhande, Sung-Hwan Han Improved performance of dense TiO₂/CdSe coupled thin films by low temperature process *Electrochimica Acta* 50 (2005) 2453–2459.
- 79) Tran Chien Dang, Duy Long Pham, Ha Chi Le and Van Hoi Pham, TiO₂/CdS nanocomposite films: fabrication, characterization, electronic and optical properties, *Adv. Nat. Sci.: Nanosci. Nanotechnol.* 1 (2010) 015002 (5pp).
- 80) Yunxia Jin, Guanghai Li, Yong Zhang, Yunxia Zhang and Lide Zhang, Fine structures of photoluminescence spectra of TiO₂ thin films with the addition of ZnFe₂O₄, *Journal of Physics. D: Applied. Phys.* 35 (2002) L37–L40.
- 81) T. S. Senthil, N. Muthukumarasamy, S. Agilan, M. Thambidurai, K. V. R. Murthy, R. Balasundaraprabh, Structural investigations on nanocrystalline TiO₂ thin films

prepared by sol-gel spin coating technique, journal of optoelectronics and advanced materials, Vol. 11, No. 6, June 2009, pg. 831 – 833.

82) Gray Hodes, Chemical Solution Deposition Of Semiconductor Films, Mareel Dekker Inc., Newyork(2009).