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1.	Authors:	Mehedi Hasan, Md. Fakhru Islam	
	Paper Title:	Enhancement of Magnetic Properties of Nanocrystalline BiFeO₃ Synthesized by a Facile Sol-Gel Auto-Combustion Process	
	<p>Abstract: In this study a facile sol-gel auto-combustion methodology has been used to synthesize nearly pure BiFeO₃ (BFO) nanocrystals at relatively low temperature. An optimum synthesis condition has been established to obtain particles with spherical shape and uniform size distribution. Well crystallized BFO nanoparticles of average particle size 26 nm have been confirmed by X-ray diffraction analysis. Size and morphology of the synthesized materials are observed using Field emission scanning electron microscope (FESEM). Magnetic hysteresis loop measurement of BFO nanoparticles shows substantial improvement in saturation magnetization with a value of \square 6.5 emu/g compared to 0.1 emu/g for the bulk antiferromagnetic sample. The origin of the magnetic property can be attributed to the size confinement effect for the particles with size less than 62 nm, period of the spiral modulated spin structure.</p>		1-4
<p>Keywords: BiFeO₃, ferromagnetism, nanoparticles, sol-gel auto-combustion.</p>	<p>References:</p>	<ol style="list-style-type: none"> 1. W. Eerenstein, N. D. Mathur, J. F. Scott, 'Multiferroic and magnetoelectric materials' Nature, Vol. 442, 2006, pp 759-765. 2. Nicola A. Hill 'Why are there so few magnetic ferroelectrics?' Journal of Physical Chemistry B, Vol. 104, 2000, pp 6694-6709. 3. Gustau Catalan, James F. Scott 'Physics and applications of bismuth ferrite' Advanced Materials, Vol. 21, 2009, pp 2463-2485. 4. A. Mukherjee, S. Basu, P.K. Manna, S.M. Yusuf, M. Pal 'Enhancement of multiferroic properties of nanocrystalline BiFeO₃ powder by Gd-doping' Journal of Alloys and Compounds, Vol. 598, 2014, pp 142-150. 5. Tae-Jin Park, C. Georgia Papaefthymiou, J. Arthur Viescas, R. Arnold Moodenbaugh, S. Stanislaus Wong 'Size-dependent magnetic properties of single-crystalline multiferroic BiFeO₃ nanoparticles' Nano Letters, Vol. 7, 2007, pp 766-772. 6. Fengzhen Huang, Zhijun Wang, Xiaomei Lu, Junting Zhang, Kangli Min, Weiwei Lin, Ruixia Ti, TingTing Xu, Ju He, Chen Yue, Jinsong Zhu 'Peculiar magnetism of BiFeO₃ nanoparticles with size approaching the period of the spiral spin structure' Scientific Reports, Vol. 3, 2013, pp 2907. 7. Gurmeet Singh Lotey, N. K. Verma 'Structural, magnetic, and electrical properties of Gd-doped BiFeO₃ nanoparticles with reduced particle size' Journal of Nanoparticle Research, Vol. 14, 2012, pp 742. 8. D. H. Wang, W. C. Goh, M. Ning, C. K. Ong 'Effect of Ba doping on magnetic, ferroelectric, and magnetoelectric properties in multiferroic BiFeO₃ at room temperature' Applied Physics Letters, Vol. 88, 2006, pp. 212907. 9. Weiwei Hu, Yan Chen, Hongming Yuan, Guanghua Li, Yu Qiao, Yuanyuan Qin, Shouhua Feng 'Structure, Magnetic, and Ferroelectric Properties of Bi-xGdxFeO₃Nanoparticles' Journal of Physical Chemistry C Vol. 115, 2011, pp. 8869-8875. 10. Won-Sik Kim, Youn-Ki Jun, Kee Hoon Kim, Seong-Hyeon Hong 'Enhanced magnetization in Co and Ta-substituted BiFeO₃ ceramics' Journal of Magnetism and Magnetic Materials, Vol. 321, 2009, pp. 3262-3265 11. V. Annapu Reddy, N.P. Pathak, R. Nath 'Particle size dependent magnetic properties and phase transitions in multiferroic BiFeO₃ nano-particles' Journal of Alloys and Compounds, Vol. 543, 2012, pp. 206-212. 12. Gurmeet Singh Lotey, N. K. Verma 'Multiferroic properties of Tb-doped BiFeO₃ nanowires' Journal of Nanoparticle Research, Vol. 15, 2013, pp. 1553. 13. Fengzhen Huang, Xiaomei Lu, Weiwei Lin, Yi Kan, Junting Zhang, Qingdong Chen, Zhe Wang, Liben Li and Jinsong Zhu 'Thickness-dependent structural and magnetic properties of BiFeO₃ films prepared by metal organic decomposition method' Applied Physics Letters, Vol. 97, 2010, pp. 222901. 14. M. Yasin Shami, M.S. Awan, M. 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Archana Sagdeo, Puspun Mondal, Anuj Upadhyay, A.K. Sinha, A.K. Srivastava, S.M. Gupta, P. Chowdhury, Tapas Ganguli, S.K. Deb 'Correlation of microstructural and physical properties in bulk BiFeO₃ prepared by rapid liquid-phase sintering' Solid State Sciences, Vol. 18, 2013, pp. 1-9. 20. Yijun Chen, Qingsheng Wu, Jing Zhao 'Selective synthesis on structures and morphologies of Bi_xFe_yO_z nanomaterials with disparate magnetism through time control' Journal of Alloys and Compounds, Vol. 487, 2009, pp. 599-604. 21. H. Yang, T. Xian, Z. Q. Wei, J. F. Dai, J. L. Jiang, W. J. Feng 'Size-controlled synthesis of BiFeO₃ nanoparticles by a soft-chemistry route' Journal of Sol-Gel Science and Technology, Vol. 58, 2011, pp. 238-243. 22. Jian-Ping Zhou, Ruo-Lin Yang, Rui-Juan Xiao, Xiao-Ming Chen, Chao-Yong Deng 'Structure and phase transition of BiFeO₃ cubic micro-particles prepared by hydrothermal method' Materials Research Bulletin, Vol. 47, 2012, pp.3630-3636. 23. Shuai Dong, Kunihiko Yamauchi, Seiji Yunoki, Rong Yu, Shuhua Liang, Adriana Moreo, J.-M. Liu, Silvia Picozzi, Elbio Dagotto 'Exchange Bias Driven by the Dzyaloshinskii-Moriya Interaction and Ferroelectric Polarization at G-Type Antiferromagnetic Perovskite Interfaces' Physical Review Letters, Vol. 103, 2009, pp. 127201. 	
2.	Authors:	Nasim Khan, Saurav Barua, Anik Das	
	Paper Title:	A Study on Students' Travel Behavior in Perspectives of School Bus Service	
	<p>Abstract: Many areas within Dhaka city have been experiencing the rapid development of private schools over the past twenty years. Dhanmondi is one of them. The roadways near the schools consistently get congested during peak hour. School-related traffic congestion poses to the safety of the students, teachers, parents, residents, and motorists in and around school locations is a significant problem in Dhaka. The main purpose of this research work is to provide valuable information regarding traffic congestion and safety around schools in Dhanmondi area. This study is mainly based on questionnaire</p>		5-10

	<p>survey. Ten schools were selected and three hundred students were interviewed based on random sampling. Students were provided with close ended questionnaire and analysis was performed based on their feedback. Analyzed data show that various reasons contribute to traffic congestion near schools during peak period. Among these reasons, use of private car is one of the main reasons of congestion near the schools of Dhanmondi area. Significant portion of student thinks school buses are too crowded, school buses are not safe enough and bus do not arrive or leave in time. Car users can be attracted to the school buses by providing proper service and safety. Along with door-to-door peak up and least travel time; majority of student also suggested for air condition and GPS tracking in school bus. Most of the students have residence along some particular routes. If bus routes are introduced equipped with necessary facilities and services according to the demand of the students, then it will attract a large amount of students to use this service which will ultimately reduce congestion near the schools during peak period.</p> <p>Keywords: congestion, questionnaire survey, School bus, traffic.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Aftabuzzaman Md. Measuring Traffic Congestion-A Critical Review. 30th Australasian Transport Research Forum. 2009, 1-29. 2. Chowdhury, T. A., Alam, S. A., Hasan, M. I. and Ahmed. Pattern of Traffic Generation by Non-Residential Uses in Dhanmondi Residential Area. B.Sc. Thesis, BUET, Dhaka. 2008, 1-59. 3. Douglas M. Wiegand, Darrell Bowman, Richard J. Hanowski. Special Safety Concerns of the School Bus Industry.2009, 29-52. 4. Khan Mobashwir, Little Dr. Ptrick, F. Chowdhury Dr. Charisma. 'Feasibility of School Buses in Dhanmondi, Dhaka'.Report for the Harvey Mudd College Center for Environmental Studies.2009:1-29. 5. Martin Mr. Keli. Intergating School Bus And Public Transportation Service In Non Urban Communities. Report of transit Transit Cooperative Research Program. 1999. 7-45. 6. Nancy G. La Vigne. 'Traffic Congestion Around School'. Problem-Oriented Guides for Police Problem-Specific Guides Series No. 50. 2007: 3-50. 					
3.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Authors:</td> <td>Aravapalli Vanaja, Karumuri Srinivasa Rao</td> </tr> <tr> <td>Paper Title:</td> <td>Sol-Gel Synthesis and Characterization of Pure and Silver Doped Zinc Oxide Nanoparticles</td> </tr> </table> <p>Abstract: ZnO is a fast maturing semiconductor with significant research effort invested in it over the past decade. The emerging novel optical and electronic properties of ZnO semiconductor nanoparticles have been a focusing issue among researchers due to the great prospective in optoelectronic applications including transparent thin-film transistors, photo detectors, light-emitting diodes and laser diodes that operate in the blue and ultraviolet region of the spectrum. To enhance the properties of ZnO, researchers concentrate on doping ZnO with transition metal ions (Al, Cu, Ni).In this paper Influence of Ag doping on structure, morphology and optical properties were investigated. Pure and silver doped ZnO nanoparticles were synthesized by simple, inexpensive Sol–gel process. The powders were investigated using X Ray Diffraction (XRD), Scanning electron Microscopy (SEM) and Fourier transform infrared (FTIR) Spectroscopic characterizations. XRD reveals hexagonal wurtzite structure of nanoparicles with high purity. The incorporation of Ag⁺ in the place of Zn²⁺ provoked an increase in the size of nanoparticles as compared to undoped or pure ZnO nanoparticles. SEM images showed that Ag doping has great influence on morphology of ZnO. The presence of functional groups analyzed using FTIR spectra. Ag doped ZnO nanoparticles in the present study have played a vital role in surface morphology, structural and optical properties of ZnO nanoparticles.</p> <p>Keywords: FTIR, Nanoparticles, SEM, XRD, Zinc oxide</p> <p>References:</p> <ol style="list-style-type: none"> 1. Ruby Chauhana ,”Synthesis and characterization of silver doped ZnO nanoparticles Scholars Research Library Archives of Applied Science Research” 2 (5):378-385 2010 2. Nguyen Van Nghia),” Preparation and Characterization of Silver Doped ZnO Nanostructures Open Journal of Synthesis Theory and Applications” 1, 18-22. (2012 3. Xiao -Yun Ye ,”Preparation and characterization of Ag/ZnO composites via a simple hydrothermal route “- Nanopart Res 11:1159–1166 J (2006) 4. Sethuraman Gayathri) ,”Investigation of physicochemical properties of Ag doped ZnO nanoparticles prepared by chemical route Appl. Sci. Lett.1(1) 2015” 8-13 (2013) 5. Shah, A. H,”Nano Ag-doped ZnO particles magnetic, optical and structural studies” AIP Conference Proceedings;Feb2013, Vol. 1512 Issue 1, p430(2013) 6. M. Shayani Rad, “Microleakage and antibacterial properties of ZnO and ZnO:Ag nanopowders prepared via a sol–gel method for endodontic sealer application” J Nanopart Res (2013) 15:1925 DOI 10.1007/s11051-013-1925-6 7. K. Ravichandra,” Synthesis, Characterization And Antibacterial Activity Of ZnO Nanoparticles” International Journal of Pharmacy and Pharmaceutical Sciences ISSN- 0975-1491 Vol 4, Issue 4, 2012 8. Xiao-Yun Ye Æ” Preparation and characterization of Ag/ZnO composites via a simple hydrothermal route” J Nanopart Res (2009) 11:1159–1166 DOI 10.1007/s11051-008-9511-z 9. Panacek A,” Silver colloid nanoparticles: synthesis, characterization, and their antibacterial activity”. J Phys Chem B 110:16248– 16253 10. Shanmugam Saravanan1,2, Murugesan Silambarasan1 and Tetsuo Soga2 “Structural, morphological and optical studies of Ag-doped ZnO nanoparticles synthesized by simple solution combustion method” Jpn. J. Appl. Phys. 53 11RF01 doi:10.7567/JJAP.53.11RF01 11. Nanotechnology and Nanoparticles Safe Working Practices Information PAGE (Revised: 7/17/09) 12. Stephen J. Pearton, Fellow, IEEE, David P. Norton, Matt P. Ivill, Art F. Hebard,John M. Zavada, Weimin M. Chen, and Irina A. Buyanova,”ZnO Doped With Transition Metal Ions “IEEE Transactions On Electron Devices, Vol. 54, NO. 5, MAY 2007 	Authors:	Aravapalli Vanaja, Karumuri Srinivasa Rao	Paper Title:	Sol-Gel Synthesis and Characterization of Pure and Silver Doped Zinc Oxide Nanoparticles	11-14
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Authors:	Wasim Akram Mandal, Sahidul Islam					

	Paper Title: A Fuzzy Two-Warehouse Inventory Model for Power Demand Pattern, Shortages with Partially Backlogged	<p>Abstract: In this paper deals with fuzzy inventory model for non deteriorating item, power demand pattern, shortage under partially backlogged with two warehouse, is formulated and solved. After illustrate the model it test validity of the same, one numerical example have been solved then test sensitivity analyses. Fuzziness is applying by allowing the cost components (holding cost, shortage cost, etc). In fuzzy environment it considered all required parameter to be pentagonal fuzzy numbers. The purpose of the model is to minimize total cost function.</p> <p>Keywords: Inventory, Two Ware-House, Power demand, Fuzzy number, Shortages, Pentagonal fuzzy number.</p> <p>References:</p> <ol style="list-style-type: none"> BELLMAN, R.E, AND ZADEH (1970), Decision making in a fuzzy environment, Management Science 17, B141-B164 CARLSSON, C. AND P. KORHONEN (1986), A parametric approach to fuzzy linear programming, Fuzzy sets and systems, 17-30. CLARK, A.J, (1992), An informal survey of multy-echelon inventory theory , naval research logistics Quarterly 19, 621-650. DUTTA, D.J.R. RAO, AND R.N TIWARY (1993), Effect of tolerance in fuzzy linear fractional programming, fuzzy sets and systems 55, 133-142. HAMACHER, H.LLEBERLING AND H.J.ZIMMERMANN (1978), Sensitivity Analysis in fuzzy linear Programming Fuzzy sets and systems 1, 269-281. HADLEY, G. AND T.M. WHITE (1963),Analysis of inventory system, Prentice-Hall, ENGLEWOOD Cliffs, NJ. KHUN, H.W AND A.W. TUCKER (1951), Non-linear programming, proceeding second Berkeley symposium Mathematical Statistic and probability (ed) Nyman J.University of California press 481-492. RAYMOND, F.E (1931), Quantity and Economic in manufacturing, McGraw-Hill, New York. ZADEH, L.A (1965), Fuzzy sets, Information and Control, 8, 338-353. ZIMMERMANN, H.J.(1985),Application of fuzzy set theory to mathematical programming, Information Science, 36, 29-58. M.K.Maity (2008), Fuzzy inventory model with two ware house under possibility measure in fuzzy goal, Euro.J.Oper. Res 188746-774. Y.Liang, F.Zhou (2011), A two warehouse inventory model for deteriorating items under conditionally permissible delay in Payment, Appl. Math. Model.35, 2221-2231. D.Dutta and Pavan Kumar (2012), Fuzzy inventory without shortages using trapezoidal fuzzy number with sensitivity analysis IOSR Journal of mathematics , Vol. 4(3), 32-37. 	<p style="text-align: right;">15-19</p>
Authors:	Shoumya Nandy Shuvo, Kazi Md. Shorowordi, M. A. Islam		
Paper Title:	Effect of Nanoclay on Jute Fiber Reinforced Polyester Composites	<p>Abstract: This research focus on the development of nano-structured composites and to investigate the effect of nanoclay on the mechanical and thermal properties of jute fiber reinforced polyester composite. 1wt.% nanoclay was reinforced in polyester with 5 vol.% jute fibre of size 5 mm. For comparison 5 vol.% jute fiber composite without nanoclay was also prepared. Tensile and flexural strength of the produced samples were measured by using an Instron Universal Testing Machine. Hardness of the developed nanocomposites was measured by a Shore A Hardness Tester. The fracture surfaces were investigated by Scanning Electron Microscope (SEM). Thermal properties were evaluated using Thermo-gravimetric Analysis (TGA). It is found that modulus and strength of nanoclay reinforced polyester nanocomposite is higher than that of pure polyester, jute fiber reinforced polyester composite and nanoclay reinforced jute fiber composites. However, thermal stabilities of nanoclay reinforced jute fiber composites are found to be higher than that of pure polyester, nanoclay reinforced nanocomposite and jute fiber reinforced composite. In fractographic analyses, it is found that pure polyester undergoes ductile fracture, nanoclay reinforced nanocomposite undergoes brittle fracture and jute reinforced composite undergoes mixed fracture.</p> <p>Keywords: Nanocomposite, Nanoclay, Tensile property, Flexural strength, Fracture morphology.</p> <p>References:</p> <ol style="list-style-type: none"> Shaw, A., Sriramula, S., Gosling, P.D., and Chryssanthopoulo, M.K. 2010 Composites Part B, 41, 446–453. Mayer, C., Wang, X., and Neitzel, M. 1998 Composites Part A, 29, 783–793. Manias, Evangelos 2007 Nanocomposites: Siffer by design Nature Materials 6 (1): 9-11, doi: 10.1038/nmat1812, PMID 17199118. Mai, Y, Z. Yu, 2006. Y. Mai, Z. Yu, ed. Polymer Nanocomposites Woodhead Publ.ISBN 978-1-85573-969-7. T. J. Pinnavaia, G. W. Beall eds., Polymer-Clay Nanocomposites, Wiley, 2001;ISBN 978-0-471-63700-4. Zandiatashbar, Ardavan, Picu, Catalin R., Koratkar, Nikhil 2012 Control of Epoxy Creep Using Graphene Small 8 (11): 1676–1682. doi:10.1002/sml.201102686. Patil, N., Balzano, L, Portale, G. and Rastogi, S. 2010 Influence of shear in the crystallization of polyethylene in the presence of SWCNTs Carbon 48 (14) :4116. doi:10.1016/j.carbon.2010.07.022. Usuki, Arimitsu; Kojima, Yoshitsugu; Kawasumi, Masaya; Okada, Akane; Fukushima, Yoshiaki; Kurauchi, Toshio; Kamigaito, Osami 1993 Synthesis of nylon 6-clay hybrid Journal of Materials Research 8 (5):1179. doi:10.1557/JMR.1993.1179. Sotirou, Georgios A.; Blattmann, Christoph O.; Pratsinis, Sotiris E. 2013. "Flexible, multifunctional, Magnetically actuated nanocomposite films". Advanced Functional Materials 23: 1616–3028. doi:10.1002/adfm.201201371. A. B. Morgan, C. A. Wilkie eds., "Flame Retardant Polymer Nanocomposites" Wiley, 2007; ISBN 978-0-471-73426-0. Blandino A, Dravillas K, Cantero D, Pandiella S.S and Webb C Process Biochemistry 2001, 37, 497–503. FU Lei, TIAN Ji-chun, SUN Cai-ling, and LI Chun Agricultural Sciences in China 2008 7, 812-822. Ren, J, Yanxia, H, Yan L, Xiaozhen, T., 2005 Preparation, Characterization and Properties of Poly(vinyl chloride) / Compatibilizer / Organophilic-Montmorillonite Nanocomposites by Melt Intercalation, Polymer Testing, 24: 316-323. Mishra, J.K, Jin-Ho, R, Gue-Hyun, K, Kun-Jun, H, Kim, I, Chang-Sik, H, 2004 Preparation and Properties of A New Thermoplastic Vulcanizate / Organoclay Nanocomposites Using Maleic Anhydride Functionalized Polypropylene as A 	<p style="text-align: right;">20-26</p>
<p style="text-align: center;">5.</p>			

	<p>Compatibilizer, <i>Materials Letters</i>, 58 : 3481-3485.</p> <p>15. Kawasumi, M., N. Hasegawa, M. Kato, A. Usuki and A. Okada, 1997 Preparation and Mechanical Properties of Polypropylene-Clay, <i>Hybrids Macromolecules</i>, 30(20): 6333-6338.</p> <p>16. Ardhyana, H. and Ismail, H., 2007 Effects of Organoclay Loading and Ethylene Glycol on Mechanical Morphology and Thermal Properties of Ethylene Vinyl Acetate / Organoclay.</p> <p>17. Tserki, V., Marzinos, P., and Panayiotou, C. 2006, Novel biodegradable composites based on treated lignocellulosic waste flour as filler; Part II. Development of biodegradable composites using treated and compatibilized waste flour <i>Composites: Part A</i> (37), 1231-1238.</p> <p>18. Baiardo, M., Zini, E., and Scandola, M. 2004, Flax fibre-polyester composites, <i>Composites, Part A: Applied Science and Manufacturing</i>, 35: 703-710.</p>	
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