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1.	Authors:	Nilesh P. Patil, V.A. Kulkarni	
	Paper Title:	Measurement Variation Analysis and Uncertainty Estimation in Single Cylinder Engine block using Coordinate Measuring Machine	
	<p>Abstract: Due to the measurement errors objectively existing, measurement result deviates from “true value” of the measurand. As measurement devices also shows measurement errors, a measurement result will never be exact. This means there will always be a measurement uncertainty that must be taken into account while evaluating conformance of products to tolerances. If the measurement uncertainty is neglected, this can result in false rejection or false acceptance of products, with possibly far-reaching consequences. Measurement uncertainty determination for coordinate measuring machines is difficult because of the many uncertainty contributors such as CMM hardware errors, temperature, measurement strategy etc. that are involved and these are affecting on the performance of the CMM which is nothing but the uncertainty involved in the process. This paper indicates what the uncertainty in the measurement is, standard types of uncertainty and how to calculate the budget for uncertainty with standard component i.e. single cylinder engine block assembly. With reference to the Guide to the expression for uncertainty in measurement (ISO GUM), the process is followed with Type-A and Type-B standard uncertainty by the statistical analysis of series of observations taken and by means other than the statistical analysis of series of observations. by analyzing the results, we had found that the max. Expanded uncertainty for bore diameter, concentricity & cylindricity is observed as $\pm 2.9331 \mu\text{m}$, $\pm 2.9721 \mu\text{m}$ & $\pm 2.9250 \mu\text{m}$ respectively.</p> <p>Keywords: Coordinate Measuring Machine (CMM), ISO GUM, Measurement uncertainty, required accuracy, Uncertainty Analysis</p> <p>References:</p> <ol style="list-style-type: none"> 1. International Organization for Standardization. (1998). Geometrical Product Specifications (GPS) –Inspection by measurement of workpieces and measuring equipment – Part 1: Decision rules for Proving conformance or non-conformance with specifications. ISO 14253-1. 2. Trapet, E., Savio, E., De Chiffre, L., New advances in traceability of CMMs for almost the entire range of industrial dimensional metrology needs. CIRP Annals - Manufacturing Technology, 2004, 53, 433–438. 3. Peng Heping, Jiang Xiangqian, Evaluation and management procedure of measurement uncertainty in new generation geometrical product specification(GPS),Elsevier- Measurement,42(2009), 653-660. 4. Stephanie Bell. “Measurement Good Practice Guide No. 11 (Issue 2)- A Beginner’s Guide to Uncertainty of Measurement” ISSN 1368-6550. 5. Yahya and Halaj, Uncertainty and Its Impact on the Quality Of measurement, American Journal of Engineering and Applied Sciences, 2012, 5 (2), 114-118. 6. James G. Salsbury, Edward P. Morse, “Measurement uncertainty in the performance verification of indicating measuring instruments”, Precision Engineering ,36,pp.218– 228, 2012. 7. Stephanie Bell. “Measurement Good Practice Guide No. 11 (Issue 2) - A Beginner’s Guide to Uncertainty of Measurement” ISSN 1368-6550. 8. Wladyslaw jakubiec, Analytical estimation of coordinate measurement uncertainty, Elsevier- Measurement, 45(2012), 2299-2308. 9. Evaluation of measurement data-The role of measurement uncertainty in conformity assessment, JCGM (Joint Committee for Guides in Metrology)-106, 2012. 10. Jean-Pierre Kruth, Uncertainty determination for CMMs by Monte Carlo simulation integrating feature form deviations, CIRP Annals - Manufacturing Technology ,58 (2009), 463–466. 11. Changcai Cui & Shiwei Fu & Fugui Huang, Research on the uncertainties from different form error evaluation methods by CMM sampling, Springer- Int J Adv Manuf Technol (2009) 43:136–145. 		1-5
2.	Authors:	Harsheeta Shah	
	Paper Title:	Quick Drying of Cement	
	<p>Abstract: Cement is a special blend of fast-setting cements, sand and gravel designed to set hard in approx. 20 to 40 minutes. Quick drying cement is useful for a number of jobs, including setting posts in the ground for fencing or for repairing cracks and holes in exterior walls. Several research projects have been carried out to investigate the moisture control process at the jobsite and the effect of moisture on cement while construction. The main goals of these projects have been how to avoid moisture problems during the building process on a jobsite, how to evaluate beforehand the drying time of cement and how to measure the moisture of structures. In the different countries, the moisture control of structures is done by using the relative humidity (RH) method.. Fast drying cement has been used for the floors of buildings and on different construction sites in Portland. By using high quality cement the risk of mould growth can be decreased not only during the building process but also during the occupancy of the building. The fast strength development of rapid drying cement can also be utilized especially during the winter in cast on site frames.</p> <p>Keywords: Cement, water content, concrete</p> <p>References:</p> <ol style="list-style-type: none"> 1. The QUIKRETE® Companies One Securities Centre 3490 Piedmont Rd., NE, Suite 1300, Atlanta, GA 2. Referred to www.quikrete.com for the most current technical data, MSDS, and guide specification. 3. matse1.matse.illinois.edu/concrete/ref.html 4. CEMENT ADDITIVES CROSS REFERENCE 5. www.dictionary.com/browse/cement 6. https://uk.answers.yahoo.com/question/index? 7. www.boral.com.au/Product/product.aspx?product/and ZapMeta.co.in/Quick Drying Cement 		6-8
3.	Authors:	Meenakshi Sharma, Suminder Kumar	
	Paper Title:	Distributed GA (Genetic Algorithm) Implementation with ABSN Framework for Analysis and Disease Prediction	

	<p>Abstract: Wireless sensor network (WSN) is the huge area of research in association with the medical field for delivering various kinds of medical application which uses WSN as major part of the application but the goings on researches are still suffering from efficient and the flexible data management techniques. This area of research is still having lack of effective, flexible, scalable and secure information management. In the medical vast amount of sensitive data is generated which needs secure and authorize access but all the existing framework cannot completely resolves this problem. Although they did very important contribution in this area of research and try to provide very promising solution but still require huge enhancement to provide effective service. The major shortcomings of existing solution are security, scalability and lack of resources which leads to less availability of resources. Wireless sensor network is used to monitor to patient health status and transmit real time monitoring report on the storage server which is used by healthcare professional to provide better and fast response so it needs fast and secure transmission and retrieval of the information. In the medical field providing response on different emergency situation is also very important concern so an effective emergency management scheme is required for handling various kinds of emergency situations. In this paper we are providing a framework which provides effective data management as well provide functionality of disease prediction and cure suggestion in the absence of expertise with the help of hadoop implementation of genetic algorithm for the data classification. In this paper we also use DABE (Distributed Attribute based encryption) for flexible and fine grained access control for fast and secure data retrieval.</p> <p>Keywords: WSN, hadoop, healthcare, cloud computing, data management, access control, Genetic algorithm.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Alemdar, Hande, and Cem Ersoy. "Wireless sensor networks for healthcare: A survey." <i>Computer Networks</i> 54.15 (2010): 2688-2710. 2. Kulkarni, Prajakta, and Yusuf Ozturk. "mPHASIS: Mobile patient healthcare and sensor information system." <i>Journal of Network and Computer Applications</i> 34.1 (2011): 402-417. 3. Caldeira, Joao Manuel LP, Joel Jose PC Rodrigues, and Pascal Lorenz. "Intra-Mobility Support Solutions for Healthcare Wireless Sensor Networks-Handover Issues." <i>IEEE Sensors Journal</i> 13.11 (2013): 4339-4348. 4. Rodrigues, Joel JPC, et al. "Analysis of the security and privacy requirements of cloud-based electronic health records systems." <i>Journal of medical Internet research</i> 15.8 (2013): e186. 5. Silva, Bruno M., et al. "A data encryption solution for mobile health apps in cooperation environments." <i>Journal of medical Internet research</i> 15.4 (2013): e66. 6. Li, Ming, Wenjing Lou, and Kui Ren. "Data security and privacy in wireless body area networks." <i>IEEE Wireless Communications</i> 17.1 (2010): 51-58. 7. Buyya, Rajkumar, et al. "Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility." <i>Future Generation computer systems</i> 25.6 (2009): 599-616. 8. Wen, Yonggang, et al. "Cloud mobile media: Reflections and outlook." <i>IEEE Transactions on Multimedia</i> 16.4 (2014): 885-902. 9. Rajesh, V., et al. "Integration of wireless sensor network with cloud." <i>Recent Trends in Information, Telecommunication and Computing (ITC), 2010 International Conference on. IEEE, 2010.</i> 10. Kurschl, Werner, and Wolfgang Beer. "Combining cloud computing and wireless sensor networks." <i>Proceedings of the 11th International Conference on Information Integration and Web-based Applications & Services. ACM, 2009.</i> 11. Lee, Kevin, et al. "Extending sensor networks into the cloud using amazon web services." <i>Networked Embedded Systems for Enterprise Applications (NESEA), 2010 IEEE International Conference on. IEEE, 2010.</i> 12. Diallo, Ousmane, et al. "Real-time query processing optimization for cloud-based wireless body area networks." <i>Information Sciences</i> 284 (2014): 84-94. 13. Diallo, Ousmane, et al. "Distributed database management techniques for wireless sensor networks." <i>IEEE transactions on parallel and distributed systems</i> 26.2 (2015): 604-620. 14. Diallo, Ousmane, et al. "Distributed database management techniques for wireless sensor networks." <i>IEEE transactions on parallel and distributed systems</i> 26.2 (2015): 604-620. 15. Jin, Chao, Christian Vecchiola, and Rajkumar Buyya. "MRPGA: an extension of MapReduce for parallelizing genetic algorithms." <i>eScience, 2008. eScience'08. IEEE Fourth International Conference on. IEEE, 2008.</i> 16. Z. Michalewicz, <i>Genetic Algorithms + Data Structures = Evolution Programs</i>, Springer, Germany, 1996. 17. Alba, Enrique, and José M. Troya. "A survey of parallel distributed genetic algorithms." <i>Complexity</i> 4.4 (1999): 31-52. 	9-12				
4.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Authors:</td> <td>Amol Khot, N. K. Nath, Shailesh Pimple</td> </tr> <tr> <td>Paper Title:</td> <td>To Control and Optimize the Response of Critical Components of Mandrel</td> </tr> </table>	Authors:	Amol Khot, N. K. Nath, Shailesh Pimple	Paper Title:	To Control and Optimize the Response of Critical Components of Mandrel	
Authors:	Amol Khot, N. K. Nath, Shailesh Pimple					
Paper Title:	To Control and Optimize the Response of Critical Components of Mandrel					
	<p>Abstract: Mandrel is the critical part of the rolling mill operation. Mandrel consists of several components which sometimes encounter unfortunate failures. These components include wedge, mandrel shaft, pull rod or segments. In this thesis design and optimization of wedge and mandrel shaft is carried out. To design the wedge there is need to calculate which the governing parameter while designing of wedge is the 3D modeling and simulation of the wedge is carried out using solid works software. The study also includes the optimization of the shaft. As the mandrel shaft was failed during working so there is need to optimize that shaft. The cause of failure of mandrel shaft was due to fatigue failure. So first of all fatigue failure analysis of shaft is done. For fatigue failure analysis the S-N curve has been created by considering various endurance limit and endurance limit correcting factors. Further study shows that the shaft was susceptible to the fatigue so it needs optimization. By considering various values of the fillet radius optimization is carried out. The shaft is then modeled and simulated in the Ansys v 12.</p> <p>Keywords: Ansys, Components, Mandrel, Optimization</p> <p>References:</p> <ol style="list-style-type: none"> 1. Sandip Bhattacharyya —Failure analysis of gas blower shaft of a blast furnacel- <i>Engineering Failure Analysis</i> 15 (2008) 349–355 2. Osman Asi Fatigue failure of a rear axle shaft of an automobilel- <i>Engineering Failure Analysis</i> 13 (2006) 1293–1302 3. E. Rusiński, J. Czmochoowski, P. Moczko — Failure reasons investigations of dumping conveyor breakdown- <i>Volume 23 Issue 1 July 2007Journal of Achievements in Materials and Manufacturing Engineering</i> 4. K. Solanki , M.F. Horstemeyer —Failure analysis of AISI 304 stainless steel shaftl - <i>Engineering Failure Analysis</i> 15 (2008) 835–846 5. Shuhaizal bin mohdnoor-fatigue analysis of driveshaft of toyotaseg university of Malaysia Pahang, 2007-08 6. William L. Roberts (1978), "Cold Rolling of Steels.", Marcel Dekker Inc. New York. 7. A. K. Dutta, G. Das, P. K. De, P. Ramachandrarao (2006), "Finite Element Modelling of rolling process and optimization of process parameter" , <i>Material Science and Engineering</i>, Page no.11-20. 	13-19				

	Authors: S.S. Saravanan, P. Jagadeesh	
	Paper Title: Experimental Investigation on Strength Properties of M50 Grade Concrete With Replacement of Fine Aggregate by M-Sand—A Comparative Study With and Without using Admixture	
5.	<p>Abstract: In India, the conventional concrete is produced by mixing the cement, coarse aggregates and fine aggregates (river sand). In recent years, river sand has become a scarce material due to depletion of natural sources and creating environmental problem of water table depletion. It is essential to identify an alternative material for fine aggregates (river sand). Most commonly in development of road sector such as the construction of high level bridges, elevated corridors and flyovers etc., the M50 Grade concrete is used extensively. Hence experimental investigation is carried out in respect of workability, strength and durability properties of M50 concrete using manufactured sand as fine aggregates and compared with the conventional concrete values. Using manufactured sand at 70% replacement of fine aggregate, the compressive strength, split tensile strength and flexural strength values increased by 12.09%, 12.50% and 16.67% respectively with super plasticizer compared to conventional concrete at 28 days and 10.50%, 11.36% and 11.20% respectively without super plasticizer. Hence M50 concrete with manufactured sand is found to be suitable for concrete compared to conventional concrete with natural river sand. The use of manufactured sand is recommended with proper care in production of M50 Grade concrete by satisfying the requirement of gradation.</p> <p>Keywords: compressive strength, split tensile strength, flexural strength, workability of concrete, super plasticizer.</p> <p>References:</p> <ol style="list-style-type: none"> 1. R. Ilangoan, R. Mahendran, and K. Nagamani, "Strength and durability properties of concrete containing quarry rock dust as fine aggregates," ARPN Journal of Engineering and Applied Science, Vol. 3, Issue 5, pp. 20-26, 2008 2. R. Ilangoan, K. Nagamani, "Application of Quarry rock dust as fine aggregate in concrete construction," National Journal on Construction Management NICMR, Pune, pp. 5-13, December, 2006. 3. R. Ilangoan, K. Nagamani, "Studies on strength and behavior of concrete by using Quarry Dust as fine aggregates," CE & CR journal. New Delhi, pp. 40-42, 2006. 4. R. Mahindra, Chitlange, S. Prakash, Pajjade, "Strength appraisal of artificial sand as fine aggregates in SFRC, 2010. 5. S.S. Saravana, P. Jagadeesh, Evaluation of M30 grade concrete with manufactured sand, National Conference on modern construction materials and Technology, Sponsored by BRNS, Chennai, 2014. 6. Soman K. Divyasasi, et. al. Strength Properties of concrete with partial replacement of sand by bottom ash, International Journal of Innovative Research in Advanced Engineering, 1, 7 (2014) 223-227. 7. Bureau of Indian Standards. Specifications for 53 grade ordinary Portland cement. IS 12269: New Delhi, 1989. 8. Bureau of Indian Standards. Specification for coarse and fine aggregate from natural sources for concrete, IS:383: New Delhi, 1970. 9. Bureau of Indian Standards. Recommended Guidelines for concrete mix Design. IS 10262: New Delhi, 2009. 10. Bureau of Indian Standards. Specifications for IS 456: New Delhi. IRC 112-2011, 2000. 11. Bureau of Indian Standards. Method of test for slump of concrete. IS 1199: New Delhi, 1959. 12. Bureau of Indian Standards. Method of test for strength of concrete. IS 516: New Delhi, 1959. 13. M.R. Chitlange, S. Prakash S, "Experimental Study of Artificial Sand Concrete," First International Conference on Emerging Trends in Engineering and Technology, pp. 1050-1054, 2008. 	20-24
	Authors: Pradeep Kumar, Sachin Agrawal, Pammi Kumari	
	Paper Title: Ergonomics Risk Factors in Construction Sector	
6.	<p>Abstract: Construction industry is one of the highly risky industries with more number of accident and injuries. Many construction companies have difficulty in providing a safe working environment for their employees. The purpose of this research is to identify the ergonomics risk factors on the construction site. This was done by site visit and asking questionnaire from the employees of the construction industry. This study will include ergonomics risk factors in relation of human and their nature of work. One of the most significant ergonomics risk factors are awkward posture in handling of job task, repetition and force of specific movement including vibration. Other ergonomics risk factor includes static position, contact stress of tendon and muscles and also extreme temperature condition. The study will enhance the awareness of the ergonomics risk factors which may occur in the construction sector.</p> <p>Keywords: Construction, Ergonomics, Risk Factors</p> <p>References:</p> <ol style="list-style-type: none"> 1. Atishey Mittal et al, "Ergonomic risk controls in construction industry", International Journal of Emerging Research in Management & Technology, ISSN: 2278-9359 (Volume-2, Issue-8), August 2013. 2. John G. Everett, "Ergonomics, Health, and Safety in Construction: Opportunities for Automation and Robotics", Automation and Robotics in Construction XI, D.A. Chamberlain (Editor) Elsevier Science B.V. 1994. 3. Desre Kramer et al, "Spreading good ideas: A case study of the adoption of an innovation in the construction sector", Applied Ergonomics, (Volume-40, Issue-5), pp 826-832, September 2009. 4. Bryan Buchholz et al, "PATH: A work sampling-based approach to ergonomic job analysis for construction and other non-repetitive work, Applied Ergonomics, (volume-27, no. 3), pp 177-187, 1996. 5. Linda M. Goldenhar and Pete Stafford, "If you've seen one construction worksite stretch and flex program ... you've seen one construction worksite stretch and flex program", Journal of safety research 55, pp 73-79, 2015. 6. Sang D. Choi, "Investigation of Ergonomic Issues in the Wisconsin Construction Industry", The Journal of SH & E Research, Volume 5, No. 1, 2008. 7. KA Shamsuddin et al, "Investigation the Safety, Health and Environment (SHE) Protection in Construction Area", International Research Journal of Engineering and Technology (IRJET), Volume: 02, Issue: 06, Sep 2015. 8. Morteza Oostakhan et al, "Ergonomics Issues in The Construction Safety", Iranian Rehabilitation Journal, Vol. 10, February 2012. 9. Er. Shrishail Shirur and Dr. Suwarna Torgal, "Enhancing Safety and Health Management Techniques in Indian Construction Industry", International Journal of Engineering and Technical Research (IJETR) ISSN: 2321-0869, Volume-2, Issue-4, April 2014. 10. Ernst. A.P. Koningsveld and Henk F. Vander Molen, "History and future of ergonomics in building and construction", Taylor & Francis Group, Vol. 40, No. 10, pp 1025 - 1034, 1997. 11. Alireza Ahankoob and Aref Charehzehi, "Mitigating Ergonomic Injuries In Construction Industry", IOSR Journal of Mechanical and Civil 	25-29

	<p>Engineering (IOSR-JMCE) e-ISSN: 2278-1684, p-ISSN: 2320-334X, Volume 6, Issue 2, pp 36-42, (Mar. - Apr. 2013).</p> <ol style="list-style-type: none"> 12. Pradip Kumar Ray et al, "Ergonomic analysis of construction jobs in India: A biomechanical modelling approach", Procedia Manufacturing 3, pp 4606-4612, 2015. 13. Pradip Kumar Ray et al, "Status survey of occupational risk factors of manual material handling tasks at a construction site in India", Procedia Manufacturing 3, pp 6579-6586, 2015. 14. Smallwood, J.J., "Designing for Construction Ergonomics", Procedia Manufacturing 3, pp 6400-6407, 2015. 15. Julitta S. Boschman et al, "Use of Ergonomic Measures Related to Musculoskeletal Complaints among Construction Workers: A 2-year Follow-up Study", Safety and Health at Work 6, pp 90-96, (2015). 16. N. Jaffar et al, "A Literature Review of Ergonomics Risk Factors in Construction Industry", Procedia Engineering 20, pp 89 – 97, 2011. 17. H. Abdul-Tharim et al, "Ergonomic Risk Controls in Construction Industry- A Literature Review", Procedia Engineering 20, pp 80 – 88, 2011. 18. Dr. Anoop Sattineni and Taylor Schmidt, "Implementation of mobile devices on jobsites in the construction industry", Procedia Engineering 123, pp 488 – 495, 2015. 19. Xing Su et al, "Improving Construction Equipment Operation Safety from a Human-centered Perspective", Procedia Engineering 118, pp 290 – 295, 2015. 20. S. Tavares, "Work at height: Neglect or improvisation in civil construction in Brazil and Uruguay?", Procedia Manufacturing 3, pp 6109 – 6115, 2015. 21. James Renier T. Domingo et al. "Risk assessment on Filipino construction workers", Procedia Manufacturing 3, pp 1854 – 1860, 2015. 22. Helena Lidelöw and Kajsa Simu, "Understanding construction contractors and their operations strategies", Procedia Economics and Finance 21, pp 48 – 56, 2015. 23. S. Eaves et al, "Building healthy construction workers: Their views on health, wellbeing and better workplace design", Applied Ergonomics 54, pp 10-18, 2016. 					
7.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Authors:</td> <td>Yanko Aleksandrov</td> </tr> <tr> <td>Paper Title:</td> <td>Refrigeration Chambers and Volumes for Use in Extreme Situations</td> </tr> </table> <p>Abstract: Here are reviewed new solutions for chambers and volumes to be used in extreme situations. Furthermore, the main aspects of the basic requirements for their implementation are taken into consideration. Three typical solutions with inventive step of the author are reviewed.</p> <p>Keywords: types, new chambers and volumes, extreme situations.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Aleksandrov Yanko [BG] BG 63644 (B1). Built-up refrigeration chamber. Classification: E04B1/343; E04B 1/74; E04H5/10; Espacenet. 2. Aleksandrov Yanko [BG] BG 111651 (A). Moveable cold storage chamber for positive temperature; Classification: international; E04H5/12; Espacenet. 3. Aleksandrov Yanko [BG] BG 111658 (A). System for solar heating of cooling chamber with positive temperatures; 4. Classification: international: E04B2/00; E04C1/00; Espacenet. 5. Aleksandrova Lyudmila [BG]; VSOU LYUBEN KARAVELOV [BG] 6. Patent BG66192 (B1) – 2011-12-30. Solar energy application for hot water residential supply and air heating in a modular medical unit (operation theatre) in extreme situations. Classification: international: F24J2/42; cooperative: Y02E10/40; Espacenet. 	Authors:	Yanko Aleksandrov	Paper Title:	Refrigeration Chambers and Volumes for Use in Extreme Situations	30-37
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<ol style="list-style-type: none"> 10. R. S. Devan, S. B. Deshpande, B.K.Chougule, Ferroelectric and ferromagnetic properties of (x) BaTiO₃ + (1 - x) Ni_{0.94}Co_{0.01}Cu_{0.05}Fe₂O₄ Composite, <i>J. Phys. D. Appl. Phys.</i> 97 (2010) 062904. 11. H. Gul, A. Maqsood, Structural, magnetic and electrical properties of cobalt ferrites prepared by the sol-gel route, <i>J. Alloy. Compd.</i> 465 (2008) 227-231. 12. R. Gupta, J. Shah, S. Chaudhary, S. Singh, R. K. Kotnala, Magnetolectric coupling-induced anisotropy in multiferroic nanocomposite (1 - x)BiFeO₃-xBaTiO₃, <i>J. Nanopart. Res.</i> 15:2004 (2013). 13. M. K. Surendra, D. Kannan, M. S. R. Rao, Magnetic and dielectric properties study of cobalt ferrite nanoparticles synthesized by co-precipitation method, <i>Mater. Res. Soc. Symp. P.</i> 1368 (2011). 14. S. I. Seok, M. S. Kim, T. S. Suh, Photoluminescence probing of the formation of titanium dioxide sols from a titanium peroxide solution, <i>J. Am. Ceram. Soc.</i> 85 (2002) 1888-1890. 15. R. K. Singh, A. Narayan, K. Prasad, R. S. Yadav, A. C. Pandey, A. K.Singh, L. Verma, R. K. Verma, Thermal, structural, magnetic and photoluminescence studies on cobalt ferrite nanoparticles obtained by citrate precursor method, <i>J. Therm. Anal. Calorim.</i> 110 (2012) 573-580. 16. Y. Fu, H. Chen, X. Sun, X. Wang, Combination of cobalt ferrite and graphene: High-performance and recyclable visible-light photocatalysis, <i>Appl. Catal. B-Environ.</i> 111-112 (2012) 280- 287. 17. N. V. Dang, The-Long Phan, T. D. Thanh, V. D. Lam, L. V. Hong, Structural phase separation and optical and magnetic properties of BaTi_{1-x}MnxO₃ multiferroics, <i>J. Appl. Phys.</i> 111 (2012) 113913. 18. W. L. Warren, K. Vanheusden, D. Dimos, G. E. Pike, B. A. Tuttle, Oxygen vacancy motion in perovskite oxides, <i>J. Am. Ceram. Soc.</i> 79 (1996) 536-538. 19. Vanheusden, W. L. Warren, C. H. Seager, D. R. Tallant, J. A. Voigt, B. E. Gnade, Mechanisms behind green photoluminescence in ZnO phosphor powders, <i>J. Appl. Phys.</i> 79 (1996) 7983. 	
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