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1.	<b>Authors:</b>	<b>Ashab Uddin, Debangshu Barua, Md. Emran Husain, Md. Saiful Amin</b>	
	<b>Paper Title:</b>	<b>Feasibility Study of IGCC Power Plant in Bangladesh</b>	
	<p><b>Abstract:</b> The integrated gasification combined cycle (IGCC) is one of the advanced clean coal power generation systems. It could replace many of the contractual high-cost rental power plants and small Industrial Power Plants which are being currently used to supply large amount of population and thereby secure the nation's energy supply well into the future. However, utility companies have been reluctant to make gasification a major component of their generation portfolio due to high capital costs and the lack of large-scale commercial application. To resolve some of the most pressing challenges preventing widespread implementation of IGCC technology, the government should support research and development efforts focusing on advanced gasification technologies to improve the efficiency and reduce capital costs simultaneously. IGCC technology already offers significant reductions in emissions of the major criteria air pollutants (NO<sub>x</sub>, SO<sub>2</sub>, particulate matter and CO) as compared to PC plants. It is already being considered as one of the most promising technologies in reducing the environmental consequences of generating electricity from coal.</p> <p><b>Keywords:</b> IGCC, Gasification, HRSG, Emission, Coal Gasification, Environment Friendly.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. <a href="http://en.wikipedia.org/wiki/Integrated_gasification_combined_cycle">http://en.wikipedia.org/wiki/Integrated_gasification_combined_cycle</a></li> <li>2. Holt, N., "Coal-based IGCC Plants – Recent Operating Experience and Lessons Learned," Gasification Technologies Conference, Washington, DC, October, 2004 <a href="http://www.gasification.org/Docs/2004_Papers/22HOLT.pdf">http://www.gasification.org/Docs/2004_Papers/22HOLT.pdf</a></li> <li>3. Dr. PMV Subbarao - Indian Institute of Technology Delhi, <a href="http://web.iitd.ac.in/~pmvs/mel712/mel712-40.ppt">http://web.iitd.ac.in/~pmvs/mel712/mel712-40.ppt</a></li> <li>4. Sue DC, Chuang CC. Engineering design and exergy analyses for combustion gas turbine based power generation system. Energy 2004; 29:1183–205.</li> <li>5. Khaliq A, Kaushik SC. Second-law based thermodynamic analysis of Brayton/Rankine combined power cycle with reheat. Applied Energy 2004;78:179–97.</li> <li>6. Franco A, Russo A. Combined cycle plant efficiency increase based on the optimization of the heat recovery steam generator operating parameters. Inter- national Journal of Thermal Sciences 2002; 41:843–59.</li> <li>7. Reddy BV, Mohamed K. Exergy analysis of natural gas fired combined cycle power generation unit. International Journal of Exergy 2007;4:180–96.</li> <li>8. Srinivas T, Gupta AVSSKS, Reddy BV. Thermodynamic equilibrium model and exergy analysis of a biomass gasifier. Journal of Energy Resources Technology 2009;131:1–7.</li> <li>9. Reddy BV, Alaefour IE. Performance simulation of a natural gas fired combined cycle power generation system. In: 19th national &amp; 8th ISHMT-ASME heat and mass transfer conference. India: JNTU; 2008.</li> <li>10. Dincer I, Rosen MA, Zamfirescu C. Exergetic performance analysis of a gas turbine cycle integrated with solid oxide fuel cells. Journal of Energy Resources Technology 2009;13:01–11.</li> <li>11. Data extrapolated from DOE Report "Market-Based Advanced Coal Power Systems", May 1999.</li> <li>12. Draft Final Report: Assessment of Investment and Financial Flows to Mitigate Climate Change Effects in the Energy Sector May, 2011</li> <li>13. Pashos, Kay, "IGCC – An Important Part of Our Future Generation Mix," Gasification Technologies Council, October, 2005 - <a href="http://www.gasification.org/">http://www.gasification.org/</a></li> <li>14. David, Jeremy; Herzog, Howard, "The Cost of Carbon Capture," MIT-<a href="http://www.netl.doe.gov/publications/proceedings/01/carbon_seq_wksp/David-Herzog.pdf">http://www.netl.doe.gov/publications/proceedings/01/carbon_seq_wksp/David-Herzog.pdf</a></li> <li>15. Rosenberg, William, Dwight Alpern and Michael Walker, "Deploying IGCC In this Decade With 3Party Covenant Financing," Produced as part of the Energy Technology Innovation Project, Belfer Center for Science and International Affairs, July 2004.</li> <li>16. "Eastman Chemical Company - The results of insight™". Eastman.com. Retrieved 2013-10-13.</li> </ol>		
<b>Authors:</b>	<b>G. V Krishna Reddy, N. Chikkanna, H. S Monohar, B. Umamaheswar Goud</b>		
<b>Paper Title:</b>	<b>Experimental Evaluation of Thermal Transport Characteristics of MMC's for heat Sink Material for Electronics Cooling</b>		
<p><b>Abstract:</b> In this work, effort has been made in the evaluation and enhancement of thermal transport characteristics of metal matrix composites. The Thermal management systems are important in today's faster growing industrial needs which are demanding the high end processors with highest speed and reliability of performance. However, this work focuses on the development of new material for heat sink. Generally, the heat sink is attached to the CPU by the manufacturer mechanically. There is possibility of high stress inducement in the CPU due to mechanical fastening and the heat transfer is not effective as there will be a 100% surface to surface contact. Also there is a high possibility of shorting of electronic circuitry of the CPU due to the high conductivity of the heat sink material. In order to overcome these problems, effort is made to resolve the problem by developing the metal matrix composites to match with the required properties of the heat source. In this work, initially, the importance and motivation behind the evaluation of the thermal characteristics for the MMC's. The development of new MMC's was detailed along with the different compositions of the MMCs. For this, initially, baseline materials were explained in detail along their thermal properties. Six MMC's have been proposed with varying compositions of aluminum and silicon carbide. Aluminum was varied in percentage composition from 25% to 65% and Sic was varied between 35% to 75%. The MMC's were evaluated for the properties lie thermal conductivity, specific heat, thermal diffusivity, CTE. Also, the variation of these properties with respect to temperature is evaluated. Finally recommendations are given for the MMC's based on the required property criteria of the heat source material.</p>			

2.	<p><b>Keywords:</b> Aluminum, Silicon carbide, Heat sink, Thermal conductivity, CTE, Specific heat.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Myers, B.A.; Eesley, G. and Ihms, D., electronics cooling in the automotive environment, electronics Cooling (2010) issue: April 2010, Available at. <a href="http://www.electronics-cooling.com">www.electronics-cooling.com</a></li> <li>2. Cola, B.A, Carbon nanotubes as high performance thermal interface materials, Electronics cooling (2010) issue: April 2010, Available at. <a href="http://www.electroniccooling.com">www.electroniccooling.com</a></li> <li>3. Myers, B.A., Cooling issues for automotive electronics, electronics Cooling (2003) issue: August 2003, available at. <a href="http://www.electronics-cooling.com">www.electronics-cooling.com</a> Chander, A. Thermal management in electronic components e can polymers replace metals or ceramics? Available at. <a href="http://www.slideshare.net/">http://www.slideshare.net/</a> (2008)(accessed 04.02.10).</li> <li>4. MMC Metal Matrix Cast Composites, METGRAFTM products data sheet available at. <a href="http://www.mmccinc.com">http://www.mmccinc.com</a> (2009)</li> <li>5. Technologies Research Corporation, USA, Aluminium metal matrix composites technology roadmap Available at. <a href="http://www.almmc.com/AIMMCRoadmapMay2002.pdf">http://www.almmc.com/AIMMCRoadmapMay2002.pdf</a> (2002)</li> <li>6. Occhionero, M.A.; Hay, R.A.; Adams, R.W. and K.P. Fennessy, Aluminium silicon carbide (AlSiC) for cost-effective thermal management and functional micro electric packaging design solutions 12th European Microelectronics and packaging Conference, June 7e9 1999, pp. S10-S04.</li> <li>7. [6] Chander, A. Thermal management in electronic components e can polymers replace metals or ceramics Available at. <a href="http://www.slideshare.net/">http://www.slideshare.net/</a> (2008).</li> <li>8. Ogando, J. Thermally conductive plastic beat the heat Available at. <a href="http://www.designnews.com/article/165-Thermally_conductive_plastics_beat_the_heat.php">http://www.designnews.com/article/165-Thermally_conductive_plastics_beat_the_heat.php</a> (2001).</li> <li>9. Lambert M A, Fletcher L S. Review of models for thermal contact conductance of metals. J. Thermo physics Heat Transf, 1997, 11(2): 129- 140</li> <li>10. Lambert M A, Fletcher L S. Thermal contact conductance of non-flat, rough, metallic coated metals. Trans ASME J Heat Transf, 2002, 124: 405- 412</li> <li>11. Yovanovich M M. Conduction and thermal contact resistances (conductances). In: Rohsenow W M, Harnett J P, Cho Y I, eds. Handbook of Heat Transfer. Chapter 3. New York: McGraw Hill, 1998</li> <li>12. Yovanovich M M, Marotha E. Thermal spreading and contact resistance. In: Bejan A, Kraus A D, eds. Heat Transfer Handbook. Chapter 4. New York: Wiley, 2003</li> <li>13. Fletcher L S. A review of thermal control materials for metallic junctions. J Spacecraft Rocket, 1972, 9: 849-850</li> <li>14. Fletcher L S. A review for thermal enhancement techniques for electronic systems, IEEE T Component Hybrid Manuf Technol, 1990, 13(4): 1012-1021</li> <li>15. Kraus A D, Bar-Cohen A. Thermal analysis and control electronic equipment. New-York: McGraw-Hill, 1983</li> <li>16. Yovanovich M M, Antonetti V W. Application of thermal contact resistance theory to electronic packages. In: Bar-Cohen A, Kraus A D, eds. Advances in Thermal Modeling of Electronic Components and Systems. New York: Hemisphere Publishing, 1998</li> <li>17. Madhusudana C V. Thermal Contact Conductance. New York: Springer-Verlag, 1996</li> <li>18. Madhusudana C V, Fletcher L S. Contact heat transfer-The last decade. AIAA J, 1986, 24(3): 510-523</li> <li>19. Fletcher L S. Recent developments in contact conductance heat transfer. Transa ASME J heat transf, 1988, 110: 1059-1070</li> </ol>	6-12
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3.	<table border="1"> <tr> <td data-bbox="188 1021 375 1064"><b>Authors:</b></td> <td data-bbox="375 1021 1329 1064"><b>Shabina Dhuria, Sonal Chawla</b></td> </tr> <tr> <td data-bbox="188 1064 375 1108"><b>Paper Title:</b></td> <td data-bbox="375 1064 1329 1108"><b>Ontologies for Personalized E-Learning in the Semantic Web</b></td> </tr> </table> <p><b>Abstract:</b> Semantic web, next generation intelligent web, is one of the emerging research areas in intelligent web technology and has high potential for research. It can be considered as a content-aware intelligent web. SW technologies will influence the next generation of e-learning systems and applications. To structure the learning material, ontology is a key constituent in the structural design of the Semantic Web. Ontology is a formal specification of a particular domain that describes set of objects, properties that objects can have and various ways how these objects are related to each other. This paper has threefold objective. Firstly, it would help to understand Semantic Web currently exists as a vision, is a promising technology for realizing eLearning requirements. Ontology is primary and most important part of semantic web, improves the learning process as it focuses on relationship rather than information. Secondly, it throws light on classification of ontologies in computer science and how ontologies in higher education can enhance the search of the learning material. Thirdly, it focuses on analysis of various ontology tools helpful in knowledge retrieval, knowledge storage, and knowledge sharing.</p> <p><b>Keywords:</b> E-Learning, Ontology, Ontology Tools, Semantic Web.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. V. Kolovski and J. Galletly, "Towards E-Learning via the Semantic Web", International Conference on Computer Systems and Technologies, 2003.</li> <li>2. Semantic Web, Available: <a href="http://en.wikibooks.org/wiki/Semantic_Web/The_Vision">http://en.wikibooks.org/wiki/Semantic_Web/The_Vision</a></li> <li>3. A. Benschop, "The future of the semantic web", Making content understandable for computers, April 2004</li> <li>4. Semantic Web, Available: <a href="http://en.wikipedia.org/wiki/Semantic_Web">http://en.wikipedia.org/wiki/Semantic_Web</a></li> <li>5. B. Chandrasekaran, J. R. Josephson and V. R. Benjamins, "Ontology of Tasks and Methods", 1998</li> <li>6. T. R. Gruber, "A Translation Approach to Portable Ontology Specifications, Knowledge Acquisition", 1993</li> <li>7. P. Monachesi, K. Simov, E. Mossel, P. Osenova and L. Lemnitzer, "What ontologies can do for eLearning", International Conference on Mobile and Computer aided Learning, 2008</li> <li>8. N. K. Shah, "E-Learning and Semantic Web", International Journal of e-Education, e-Business, e-Management and e-Learning (IJEEEE), vol. 2, April 2012.</li> <li>9. J. Euzenat and P. Shvaiko, "Ontology Matching", Springer, 2007</li> <li>10. Ontology Available: <a href="http://en.wikipedia.org/wiki/Ontology_(information_science)">http://en.wikipedia.org/wiki/Ontology_(information_science)</a></li> <li>11. F. Freitas, H. Stuckenschmidt, and N. F. Noy, "Ontology issues and applications", 2005</li> <li>12. B. Kapoor and S. Sharma, "A Comparative Study Ontology Building Tools for Semantic Web Applications", International Journal of Web and Semantic Technology (IJWEST), vol. 1, issue 3, July 2010.</li> <li>13. J. D. Heflin, "Towards the Semantic Web: knowledge representation in a dynamic distributed environment", 2001.</li> <li>14. J. Cardoso, "The Semantic Web Vision: Where are we?", IEEE Intelligent Systems, 2007, pp.22-26</li> <li>15. S. Cakula and M. Salem, "E-Learning Developing Using Ontological Engineering", WSEAS transactions on information science and applications, vol.10, issue 1, January 2013</li> <li>16. R. Sharman, R. Kishore and R. Ramesh, "Ontologies: A Handbook of Principles, Concepts and Applications in Information</li> </ol>	<b>Authors:</b>	<b>Shabina Dhuria, Sonal Chawla</b>	<b>Paper Title:</b>	<b>Ontologies for Personalized E-Learning in the Semantic Web</b>	13-18
<b>Authors:</b>	<b>Shabina Dhuria, Sonal Chawla</b>					
<b>Paper Title:</b>	<b>Ontologies for Personalized E-Learning in the Semantic Web</b>					

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	<b>Authors:</b> Chitra P, Saranya S, Manikandan T	
	<b>Paper Title:</b> Numerical Analysis of In-Plane Shear Strength on GFRP Composites under Adverse Thermal Ageing Condition	
4.	<p><b>Abstract:</b> Glass reinforced polymers are used in a wide variety of engineering applications and this occurrence continues. The exposure of composite structures to adverse environmental conditions during their service life period leads to degradation, which affects its material properties. The main objective of this paper is to determine the in-plane shear properties of uni-directional Glass/epoxy laminates when subjected to the various thermal conditions (Ambient, 253k, 343k). The in-plane shear properties of GFRP were studied by Iosipescu model, where the models were designed in various orientations (0 The Iosipescu model has been designed as per the specifications prescribed in the ASTM 5379. The design and analysis of a three dimensional finite element model were carried out using ABAQUS/CAE. Crack initiation and propagation has been achieved by eXtended Finite Element Method (XFEM). In plane shear failures for [0], [90] and [0/90] were observed. Graphs have been plotted for in-plane shear stresses and shear strains to interpret the behavior of material under various thermal ageing conditions. Among all the other material orientations, cross ply laminates at room temperature possess higher in-plane shear strength, exhibits significant variations on both thermal ageing conditions than 0° and 90° orientations. The failure mechanism of thermally exposed FEA model has done by the C3D8R stress distribution model.</p> <p><b>Keywords:</b> In-plane shear, Iosipescu shear test, Thermal Ageing, GFRP, ABACUS/CAE, (0°,90°,0/90°) orientation.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Pindera, M. J. and Herakovich, C. T., "Shear Characterization of Unidirectional Composites with the Off-Axis Tension Test," <i>Experimental Mechanics</i>, 26 (1): 103-112 (1986).</li> <li>2. Whitney, J. M., Stansbarger, D. L. and Howell, H. B., "Analysis of the Rail Shear Test-Application and Limitations," <i>Journal of Composite Materials</i>, 5:24-34 (1971).</li> <li>3. Adams, D. F. and Walrath, D. E., "Further Development of the Iosipescu Shear Test Method," <i>Experimental Mechanics</i> : 27 (2):113-119 (1987).</li> <li>4. Morton, J., Ho, H., Tsai, M.Y. and Farley, G.L., " An Evaluation of the Iosipescu Specimen for Composite Materials Shear Property Measurement," <i>Journal of Composite Materials</i>, 26 (5) :708-750 (1992).</li> <li>5. Sullivan, J. L., Kao, B.G. and Van Oene, H., "Shear Properties and a Stress Analysis Obtained from Vinyl-ester Iosipescu Specimen," <i>Experimental Mechanics</i>, 24 (3):223-232 (1984).</li> <li>6. Walrath, D.E. and Adams, D. F., "Analysis of the Stress State in an Iosipescu Shear Test Specimen," Report UWME-DR-301-10F-1, Department of Mechanical Engineering, University of Wyoming, (June 1983).</li> <li>7. H. Ho, M.Y. Tsai, J. Morton and G. L. Farley," Numerical analysis of the Iosipescu specimen for Composite materials" Report NASA-CR-190658.</li> <li>8. Rabotnov YN. Creep rupture. In: Proceedings of the XII international congress applied mechanics. Stanford: Springer; 1968.</li> <li>9. G. Odegard, M. Kumosa, "Determination of shear strength of unidirectional composite materials with the Iosipescu and 10 off-axis shear tests", <i>Composites Science and Technology</i> 60 (2000) 2917±2943.</li> <li>10. S. Ravi, N.G.R. Iyengar, B.D. Agarwal, <i>Inst. Eng. India: Aerosp. Eng. J.</i> 76 (1995) 23.</li> <li>11. H.S. Choi, K.J. Ahn, J.-D. Nam, H.J. Chun, <i>Compos. Part A Appl. Sci. Manuf.</i> 75 (5) (2001) 709.</li> <li>12. P.J.C. Chou, D. Ding, <i>J. Thermoplast. Compos. Mater.</i> 13 (3) (2000) 207.</li> <li>13. S.B. Kumar*, I. Sridhar, S. Sivashanker, "Influence of humid environment on the performance of high strength structural carbon fiber composites", <i>Materials Science and Engineering A</i> 498 (2008) 174–178.</li> <li>14. Moes, N.; Dolbow, J.; Belytschko, T. A finite element method for crack growth without remeshing. <i>International Journal for Numerical Methods in Engineering</i>, 1999; 46 (1): 131 -150.</li> <li>15. ASTM D 5379, "Test Method for Shear Properties of Composite Materials by the V-Notched Beam Method," American Society for Testing and Materials, West Conshohocken, PA, 1993.</li> <li>16. ABAQUS Version 6.10 online documentation, SIMULIA Inc.</li> </ol>	19-24
	<b>Authors:</b> To-Po Wang, Jai-Yang Syu	
	<b>Paper Title:</b> A New 0.4-V 27-dB 3.1-10.6-GHz UWB Low- Noise Amplifier with Dual-Band B and Pass Filter	
5.	<p><b>Abstract:</b> A low-voltage high-gain ultra-wideband (UWB) low-noise amplifier (LNA) with dual-band tunable bandpass filter for interference rejection is proposed in this paper. There are two sections of the proposed multi-band tunable bandpass filter. The first one is designed for 2.4-GHz interference rejection, and the other one is for 5.2-GHz interference blocking. In addition, high-Q active inductors are adopted in each bandpass filter section for improving the interferences rejection. According to the proposed circuit topology, the UWB LNA has been designed in 0.18-<math>\mu</math>m CMOS process. Simulated results confirm the UWB LNA combining the proposed dual-band tunable bandpass filter can effectively achieve high gain of 27 dB, low noise figure of 2.8 dB, low LNA supply voltage of 0.4 V, and total dc power consumption including multi-band tunable bandpass filter of 16.4 mW. In addition, the simulated interference rejections at 2.4 GHz and 5.2 GHz are 46 dB and 29 dB, respectively.</p>	25-28



**Keywords:** Interference rejection, low-noise amplifier (LNA), noise figure, notch filter.

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