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	Authors:	Aravind S, Milan K John, Rohinikumar B, Muraleedharan C
	Paper Title:	Performance Assessment of Banana Drying using a Forced Convection Solar dryer
1.	<p>Abstract: Among all the noteworthy preservation techniques for food items, drying is considered to be one of the most consequential one. Different types of drying systems exist bottomed on the manner in which air flow takes place in the drying chamber and method of utilising incident solar radiation for drying. An indirect forced convection solar drying system with a dryer of varying cross section was considered in the present work. Banana (<i>Musa Paradisiaca</i>) was the raw material to be dried. Performance of the system at discharges of 0.03 and 0.02 kg/s, respectively for the specified mass of product was obtained and compared with open sun drying in the range of 66.3% - 9.9% of wet basis moisture content. Drying process in chamber drying was completed four and two hours earlier than open sun drying at discharges of 0.03 kg/s and 0.02 kg/s, respectively. Cumulative and tray wise instantaneous drying rates were found and obtained maximum drying rates of 75 g/h and 15 g/h, respectively. Trend of moisture ratio against time was obtained by polynomial fitting which has satisfactory agreement with available mathematical model.</p> <p>Keywords: Banana, Indirect solar drying, Tray wise drying, Experimental performance</p> <p>References:</p> <ol style="list-style-type: none"> Sharma VK, Sharma TS, Garg HP (1991) Mathematical modeling and experimental evaluation of a natural convection type solar cabinet dryer. <i>Energy Convers Manag</i> 31(1):65–73 Vega-Mercado H, Gónzaga-Nieto MM, Barbosa-Cañovas GV (2001) Advances in dehydration of foods. <i>J Food Eng</i> 49(4):271–289 Karathanos VT (1999) Determination of water content of dried fruits by drying kinetics. <i>J Food Eng</i> 39:337–344 Babalís S (2006) Theoretical and experimental investigation of the heat and mass transfer phenomena during the drying of foods in hot air stream. PhD thesis, (In Greek) University of Thessaloniki Prakash O, Kumar A (2013) Historical review and recent trends in solar drying systems. <i>Int J Green Energy</i> 10:690–738 Hassnain AA (2009) Simple solar drying system for banana fruit. <i>World J Agric Sci</i> 5(4):446–455 Nguyen M-H, William Price E (2007) Air-drying of banana: Influence of experimental parameters, slab thickness, banana maturity and harvesting season. <i>J Food Eng</i> 79(1):200–207 Manjarres-Pinzon K, Cortes Rodriguez M, Rodriguez Sandaval E (2013) Effect of drying conditions on the physical properties of impregnated orange peel. <i>Braz J ChemEng</i> 30(3):667–676 El-Sebaai, A. A., Aboul-Enein, S., Ramadan, M. R. I., & El-Gohary, H. G. (2002). Experimental investigation of an indirect type natural convection solar dryer. <i>Energy Conversion and Management</i>, 43(16), 2251–2266. S.A., Yellott, J.I., and Wood, B. Application of ASHRAE standard 93-77 to the thermal performance testing of air solar collectors. Terres H, Chavez S, Lizardi A, Morales JR. Study of the Banana Drying Process Using a Solar Dryer. 2017:1-6. Abhay Lingayat, Chandramohan V.P., V.R.K. Raju. Design, Development and Performance of Indirect Type Solar Dryer for Banana Drying. <i>Energy Procedia</i> 109 (2017) 409 – 416.. 	1-6
2.	<p>Authors:</p> <p>Shinoop Khan S, M A Joseph, K Sekar</p> <p>Paper Title:</p> <p>Study of Impact Strength, Hardness, Micro Structure and Tribological Properties of Al5052 Composite with SiC and Graphite as Reinforcements</p> <p>Abstract: Aluminum Composite are widely used in aviation and automotive industries because it is light in weight hence it reduces the fuel consumption and improves the energy efficiency. The present work deals with preparing Aluminum-based particle reinforced composite fabricated through Stir Casting Process wherein Sic along with Graphite are used as reinforcements which has improved mechanical properties with reduction in weight. Impact toughness, hardness along with wear property of the fabricated composite samples were tested and compared with Al 5052 Cast Alloy based on ASTM Standard. From the testing, we can conclude that Impact toughness, Hardness and wear properties of Al 5052 base alloy is considerably increased due to the addition of particulate reinforcements. And also there is not much studies reported on the influence of Sic and Graphite as reinforcement on Impact toughness, hardness along with Wear behavior of Al 5052 alloy. So the objective of the current work is to fabricate Al 5052 base alloy reinforced with particulate composite by stir casting process and to study the Impact toughness, hardness, and microstructure along with wear behavior of the fabricated composites.</p> <p>Keywords: Energy efficiency, Graphite, Hybrid Composite, Stir Casting</p> <p>References:</p> <ol style="list-style-type: none"> K. Sekar, K. Allesu, M. A. Joseph, —Mechanical and wear properties of al–Al2O3 metal matrix composites fabricated by the combined effect of stir and squeeze casting methodl, <i>Trans Indian Inst</i>,vol 68(2), 2015. pp115-121. Muhammad Hayat Jokhio, Muhammad Ibrahim Panhwar, and MukhtiarAli Unar, —Manufacturing of aluminum composite material using stir casting processl, <i>Mehran university research journal of engineering & technology</i>, volume 30, no. 1,pp 53-64. S. BalasivanandhaPrabu , L. Karunamoorthy, S. Kathiresan, B. Mohan, —Influence of stirring speed and stirring time on distribution of particles in cast metal matrix compositel, <i>Journal of Materials Processing Technology</i> 171 (2006) 268–273 Khalid Almadhoni, Sabah Khan, —Review of effective parameters of stir casting process on metallurgical properties of ceramics particulate al compositesl, <i>IOSR Journal of Mechanical and Civil Engineering</i>, Volume 12, Issue 6, Ver. IV , PP 22-40 H. Abdizadeh and M. A. Baghchesara, —Investigation into the mechanical properties and fracture behavior of A356 aluminum alloy-based zro2-particle-reinforced metal-matrix compositesl, <i>Mechanics of Composite Materials</i>, Vol. 49,pp. 849-858 J.K.Sahoo, S.K.Sahoo, H.Sutar and B.Sarangi, —Wear behavior of Al-Si alloy based metal matrix composite reinforced with TiB2l, <i>National Conference on Processing and Characterization of Materials</i>, IOP Conf. Series: Materials Science and Engineering 178,pp 1-10 Jamaluddin Hindi, AchutaKini U, S.S Sharma, —mechanical characterization of stir cast aluminium 7075 matrix reinforced with grey 	7-10

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	Authors: Sabareesh Vijayakumar, Milan K. John, C. Muraleedharan, B. Rohinikumar	
	Paper Title: Design and Analysis of a Novel Drying Chamber in Indirect Forced Convection Solar Drying	
3.	<p>Abstract: Long drying time and less control on drying parameters in natural convection drying give way to forced convection indirect solar drying. In forced convection drying, an external blower supplies ambient air into the solar collector. The incoming air gets heated inside the collector and this air then flows into the drying chamber where the product to be dried is kept. The hot air absorbs the moisture from the raw crops and exits through the chimney. Along with the temperature and humidity of incoming air, its distribution inside the drying chamber is also important in the process of drying. The drying rate and quality can be improved if these parameters are under control in forced convection solar drying. In this paper, design and analysis of a novel drying chamber are presented to improve the performance and energy efficiency of solar drying with effective distribution of air inside the chamber. The variation of velocity with respect to different positions inside the drying chamber is also studied numerically.</p> <p>Keywords: energy efficiency, solar drying chamber, temperature, velocity.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Petros Demissie, Mesele Hayelom, Amanuel Kassaye, Asfafaw Hailesilassie, Meknonnen Gebrehiwot, Maarten Vaneirschot, “Design, development and CFD modeling of indirect solar food dryer”, Energy Procedia vol.158, p 1128-1134, 2019. 2. H. Darabi, A. Zomorodian, M.H. Akbari, A.N. Lorestani, “Design of a cabinet dryer with two geometric configurations using CFD , Journal of Food Science and Technology”, 52 p. 359–366, 2015. 3. T. Norton, B. Tiwari, D.-W. Sun, “Computational fluid dynamics in the design and analysis of thermal processes: a review of recent advances”, Crit. Rev. Food Sci. Nutr. 53 251–75, 2013. 4. J. Prasad and V. K. Vijay, “Experimental studies on drying of Zingiber officinale, Curcuma longa l. and Tinospora cordifolia in solar-biomass hybrid drier,” Renew. Energy, vol. 30, no. 14, pp. 2097–2109, 2005.. 5. J. Eze and K. Agbo, “Comparative studies of sun and solar drying of peeled and unpeeled ginger,” Am. J. Sci. Ind. Res., vol. 2, no. 2, pp. 136–143, 2011 6. M. N. Musembi, K. S. Kiptoo, and N. Yuichi, “Design and Analysis of Solar Dryer for Mid-Latitude Region,” Energy Procedia, vol. 100, no. September, pp. 98–110, 2016. 7. A. Lingayat, V. P. Chandramohan, and V. R. K. Raju, “Design, Development and Performance of Indirect Type Solar Dryer for Banana Drying,” Energy Procedia, vol. 109, no. November 2016, pp. 409–416, 2017. 8. Sharma, A., Chen, C.R., Lan, N. V., “Solar-energy drying systems: A review, Renewable and Sustainable Energy Reviews”,vol.13, pp. 1185-1210, 2009. 9. Youcef-Ali S., Messaoudi H., Desmons J.Y., Abene A., Le Ray M. “Determination of the Average Coefficient of Internal Moisture Transfer during the Drying of a Thin Bed of Potato Slices, Journal of Food Engineering”, 48(2), p. 95-101, 2001. 	11-16
4.	Authors: Vishnu Sivarudran Pillai, Arathi KV	
	Paper Title: Evaluating the Significance of Financial Characteristics on Energy Consumption of Urban Building Stock using Principal Component Analysis and Logistic Regression	
	<p>Abstract: The increased population and the rapid urbanization seek our attention towards sustainable production and consumption in cities. In assessing the factors affecting the energy consumption characteristics of the buildings, it is crucial that we consider the user behavior along with the design characteristics of the buildings. One significant factor that influence the user behavior is the financial characteristics. We use non-parametric machine learning algorithms and econometric models to assess the influence of the user behavior characteristics in the urban building stock in New York City. The analysis was conducted on the open-data assessable, which is mandated by the Local Law 84. In our analysis we concluded that the financial characteristics have a significant effect in the energy consumption of the residential buildings, however, is not that significant in deciding the energy consumption of the commercial buildings.</p> <p>Keywords: Building Energy, Principal Component Analysis, Logistic Regression, Energy Usage Intensity.</p> <p>References:</p> <ol style="list-style-type: none"> 1. N. Koseleva and G. Ropaite, “Big Data in Building Energy Efficiency: Understanding of Big Data and Main Challenges,” <i>Procedia Eng.</i>, vol. 172, pp. 544–549, 2017. 2. A. N. Sadeghifam, S. M. Zahraee, M. M. Meynagh, and I. Kiani, “Combined use of design of experiment and dynamic building simulation in assessment of energy efficiency in tropical residential buildings,” <i>Energy Build.</i>, vol. 86, pp. 525–533, 2015. 3. Z. Yang, J. Roth, and R. K. Jain, “DUE-B: Data-driven urban energy benchmarking of buildings using recursive partitioning and stochastic frontier analysis,” <i>Energy Build.</i>, vol. 163, pp. 58–69, 2018. 4. J. Ma and J. C. P. Cheng, “Identifying the influential features on the regional energy use intensity of residential buildings based on Random Forests,” <i>Appl. Energy</i>, vol. 183, pp. 193–201, 2016. 5. Y. Hirano and T. Fujita, “Evaluation of the impact of the urban heat island on residential and commercial energy consumption in Tokyo,” <i>Energy</i>, vol. 37, no. 1, pp. 371–383, 2012. 6. L. Pérez-Lombard, J. Ortiz, and C. Pout, “A review on buildings energy consumption information,” <i>Energy Build.</i>, vol. 40, no. 3, pp. 394–398, 2008. 7. A. F. Husson, J. Josse, and M. F. Husson, “Package ‘missMDA,’” 2019. 8. S. Lê, J. Josse, and F. Husson, “FactoMineR: an R package for multivariate analysis,” <i>J. Stat. Softw.</i>, vol. 25, no. 1, pp. 1–18, 2008. 9. F. Husson, S. Lê, and J. Pagès, <i>Exploratory multivariate analysis by example using R</i>. CRC press, 2017. 10. A. Irpino, R. Verde, and Y. Lechevallier, “Dynamic clustering of histograms using Wasserstein metric,” in <i>COMPSTAT</i>, 2006, pp. 869–876. 11. B. Ripley <i>et al.</i>, “Package ‘mass,’” <i>Cran R</i>, vol. 538, 2013. 12. Constantine E. Kontokosta, “Predicting Building Energy Efficiency Using New York City Benchmarking Data,” <i>ACEEE Summer</i> 	17-25

	<p><i>Study Energy Effic. Build.</i>, vol. 49, no. 2, pp. 15–19, 2012.</p> <p>13. NYC Planning, “PLUTO data dictionary,” 2017.</p>		
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	Paper Title:	Green Construction and other Sustainability Trends	
5.	<p>Abstract: Sustainable development is a hot topic in today’s world since it could help us to meet the needs of today without compromising the ability of future generations to meet their own needs. As a civil engineering student, to meet our needs, we must be willing to learn and adapt and to continue to do so in the future. For example, infrastructures for changing climate, and earthquake and flood resistant buildings. It is our responsibility to be innovative in our practices and find solutions for the issues that our planet faces. Green material plays a key role in sustainable development. They are the local and renewable materials that are used to construct energy efficient structures. Green buildings are not just about little more efficiency. But it creates less waste and greenhouse gases and supports clean environment and healthy living. Materials, energy, water and health are the key elements of green building. This paper is a review on green materials and green construction and its importance in growing sustainability trends. It is a question that disturbs minds of civil engineers around the world that how could construction industry bother sustainability. Construction industry, from energy usage to emissions, by its very nature is a large user of natural resources. Besides having potential for building over wild habitats, it also has larger environmental impact. It uses fossil fuels for its heavy machinery. World’s 36% energy usage and 40% CO2 emissions are solely from construction industry. Thus, this industry is under pressure to decrease its environmental impact. So, usage of renewable and recyclable resources, and reducing energy consumption and waste should be the major goals of this industry which could fulfil the idea of green construction. It should also adhere to the idea of Corporate Social Responsibility- the idea that business should support good causes</p> <p>Keywords Corporate Social Responsibility, Green Building, Sustainability Development, Sustainability Trends.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Charles J. Kibert, <i>Sustainable construction: proceedings of the First International Conference of CIB TG 16</i>. Florida, 1994. 2. Immaculata Nwokoro and Henry Onukwube, “Sustainable or Green construction in Lagos, Nigeria: Principles, Attributes and Framework,” <i>West Africa Built Environment Research (WABER) Conference</i>, Ghana, July. 2011, pp. 883-884 3. J. M. Khatib, “Sustainability of Construction Materials”, 2nd ed., Woodhead Publishing, 2016, pp. 16-17. 4. Michael Fontaine, “Corporate social responsibility: the new bottom line?”, <i>International Journal of Business and Social Science 4</i>, 2013. 5. Prof. Shibu Krishnan, <i>Introduction to Sustainable Engineering</i>, 1st ed. PKC Books, 2015 6. United Nations (official website). Available: https://www.un.org 		26-29
6.	Authors:	Sarosh Kothandath, Hari Haran	
	Paper Title:	Study of Success levels and Success Criteria for Infrastructure Projects in Thiruvananthapuram	
	<p>Abstract: Public Infrastructure projects are generally believed to be complex and success rates of these projects are reported as far from satisfactory. Advances in project management techniques over the years does not effectively address the success gap, the subjective nature of what constitutes project success adds more to the uncertainty. Public projects utilize public funds and hence has the accountability towards public opinion and are expected to generate positive public appeal from the users. This paper intends to discover the opinion of project users in Thiruvananthapuram city on success criteria for infrastructure projects and to conduct a comparative analysis for transport and water sector projects as well as comparison of user and project professional viewpoints on project success for both these sectors</p> <p>Keywords: Infrastructure, Project success, Success Criteria, User preference</p> <p>References:</p> <ol style="list-style-type: none"> 1. S. Lipovetsky, A. Tishler, D. Dvir, & A. Shenhar, The relative importance of project success dimensions. <i>Research & Development Management</i>, 27 (1997) 97–106. https://doi.org/10.1111/1467-9310.00047. 2. P. L. Bannerman, Defining Project Success : A Multi-Level Framework. (2008). 3. L. A. Ika, Project Success as a topic in Project Management Journals. <i>Project Management Journal</i>, (2009) 6–19. https://doi.org/10.1002/pmj. 4. R. Müller & K. Jugdev, Critical success factors in projects. <i>International Journal of Managing Projects in Business</i>, 5 (2012) 757–775. https://doi.org/10.1108/17538371211269040. 5. B. N. Baker, D. Fischer, & D. C. Murphy, Multiple Determinants of Project Success and Failure. (1974). 6. J. K. Pinto & D. P. Slevin, Project success: Definition and Measurement Techniques. <i>Project Management Journal</i>, 19 (1988) 67–73. 7. R. Atkinson, Project management: cost time and quality two best guesses and a phenomenon, it’s time to accept other success criteria. <i>International Journal of Project Management</i>, 17 (1999) 337–342. https://doi.org/10.1016/S0263-7863(98)00069-6. 8. A. de Wit, Measurement of project success. <i>International Journal of Project Management</i>, 6 (1988) 164–170. https://doi.org/10.1016/0263-7863(88)90043-9. 9. A. K. Munns & B. F. Bjeirmi, The role of project management in achieving project success. <i>International Journal of Project Management</i>, 14 (1996) 81–87. https://doi.org/http://dx.doi.org/10.1016/0263-7863(95)00057-7. 10. K. Jugdev & J. Thomas, Rethinking Project Management: Old Truths and New Insights. 7 (2001) <i>International Project Management Journal</i>. 11. D. Baccarini, The Logical Framework Method for Defining Project Success. <i>Project Management Journal</i>, Volume 30 (1999) 25–32. https://doi.org/10.1086/250095. 12. T. Cooke-Davies, The “real” success factors on projects. <i>International Journal of Project Management</i>, 20 (2002) 185–190. https://doi.org/10.1016/S0263-7863(01)00067-9. 		30-36

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Authors: Aswani K, Menaka. D., Manoj M K.

Paper Title: On the Methods for Detecting Brain Tumor from MRI images

Abstract: Brain tumor detection from MRI images is a challenging process due to high diversity in the tumor pixels of different peoples. Automatic detection has got wide spread acclaim because the manual detection by experts is time consuming and prone to error in judgment. Due to its high mortality rate, detection of tumor automatically is a new emerging technique in bio medical imaging. Here we present a review of few methods from simple thresholding to advanced deep learning methods for segmentation of tumor from MRI data. The segmentation of tumor methods is classified to image segmentation using gray level processing, machine learning and deep learning. The results of various methods are compared to find the best methods available. As medical imaging methods have improving day by day this review will help to understand emerging trends in brain tumor detection.

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Keywords: MRI, Segmentation, Machine Learning, Deep Learning

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8. Authors: Ashish Rajeshwar Kulkarni, Sudhanshu Singh, Krishan Kant, Hemant Bharti

Paper Title: Experimental Electric Retrofitting of an Ice Vehicle with Simulation and Cost Analysis

Abstract: With increasing awareness towards environmental issues, the modern society seems inclined towards use of cleaner fuel in transportation and a drift towards electric vehicles is now being observed world over. Government of India has already made its vision 2030 public in which 100% use of electric vehicles in public transport and increased percentage of electric vehicles in personal passenger vehicles is envisaged. The paper presents a method followed for the conversion process of a traditional ICE vehicle to electric vehicle. The research specifically takes into consideration ARAI guidelines and Indian laws that benefit the process. The paper is presented in three sections. The first section deals with essential electrical components required for the procedure and their selection respectively. The second section contains simulation of selected electric motor along with cost analysis of the complete drive. The third section contains the procedure followed to obtain the final vehicle along with descriptive images for better understanding of placement of the components. The final vehicle obtained is highly cost effective as well as efficient in its performance.

45-50

Keywords: BLDC, Conversion, Gearbox, Retrofitting.

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