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	<b>Authors:</b>	<b>Arif Selim EREN</b>	1-3
1.	<b>Paper Title:</b>	<b>Designing A Butt Collector by Computer Aided Design (CAD)</b>	
	<p><b>Abstract:</b> The purpose of this study is to introduce a butt collector designed via CAD. With this aim the literature is reviewed and the originality of the product is verified. Then, the author made pencil sketching and these sketches are turned into a CAD model. This is an initial design of an industrial product. As the software, SOLIDWORKS is used. The figures demonstrate the design and some implications for further research are provided.</p> <p><b>Keywords:</b> Butt Collector, CAD, Design.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>Arandjus, M. and Tomc, H.G., (2016), Rendering 3D graphics as an aid to stylized line drawings in perspective”, Journal of Graphic Engineering and Design, 7(2), pp. 5-13.</li> <li>Besant, C. B., (1983), “Computer-aided Design and Manufacture”, Ellis Horwood, England.</li> <li>Chandrasegaran, S.K., Ramani, K., Sriram, R.D., Horváth, I., Bernard, A., Harik, R.F. and Gao, W., (2013), “The evolution, challenges, and future of knowledge representation in product design systems”, Computer-Aided Design, 45(2), pp. 204-228.</li> <li>Dani, T.H. and Gadh, R., (1997), “Creation of concept shape designs via a virtual reality interface”, Computer-Aided Design, 29(8), pp. 555-563.</li> <li>Encarnaçao, J.L., &amp; Schlechtendahl, E. G., 1983, Computer Aided Design: Fundamentals and System Architectures, Springer-Verlag, Germany.</li> <li>Gökçearslan, A., (2017), “Üç Boyutlu Yazıcının Grafik Tasarım Alanına Yansımaları”, Fine arts, 12(2), pp. 135-148.</li> <li>González-Lluch, C., Company, P., Contero, M., Camba, J.D. and Plumed, R., “A survey on 3D CAD model quality assurance and testing tools”, Computer-Aided Design, 83(1), pp. 64-79.</li> <li>Hunt, W.A., &amp; Johnson, S.D., 2000, Formal Methods in Computer-aided Design: Third International Conference, FMCAD 2000, Austin, TX, USA, November 1-3, 2000 : Proceedings, Springer, USA.</li> <li>Ingham P, 1990, CAD Systems in Mechanical and Production Engineering, Industrial Press Inc., USA</li> <li>Kadir, A and Mohajerani, A., 2012, "Physical mechanical properties and microstructure analyses on effect of incorporating cigarette butts in fired clay bricks", World Journal of Engineering, Vol. 9 Issue: 4, pp.313-318.</li> <li>Kloos, C.D. and Pardo, A., 2004, EDUTECH: Computer-aided Design Meets Computer-aided Learning ; IFIP 18th World Computer Congress ; TC10/WG10.5 EduTech Workshop, 22-27 August 2004, Toulouse, Springer, France.</li> <li>Krouse, J.K., 1982, What Every Engineer Should Know about Computer-aided Design and Computer-aided Manufacturing: The CAD/CAM Revolution, CRC Press, USA.</li> <li>Renner, G. and Ekárt, A. (2003), “Genetic algorithms in computer aided design, Computer-Aided Design”, 35 (8), pp. 709-726.</li> <li>Sakine Öngöz, Hasan Karal, Mustafa Tüysüz, Adil Yıldız and Ahmet Kılıç, (2017), “Hukuk Eğitiminde Kullanılmak Üzere Üç Boyutlu Sanal Mahkeme Geliştirilmesi”, 8(1), pp. 69-90.</li> <li>Stark, J., 1986, What Every Engineer Should Know about Practical CAD/CAM Applications, CRC Press, USA</li> <li>Varol, R., Yalçın, B. and Yılmaz, N., (2005), “Bilgisayar Destekli İmalatta (CAM), CAM programı kullanılarak parça imalatının gerçekleştirilmesi”, Makine Teknolojileri Elektronik Dergisi, 1(3), pp. 47-57.</li> <li>Yan, X. and Gu, P., (1996), “A Review of Rapid Prototyping Technologies and Systems”, Computer-Aided Design, 28(4), pp. 307-318.</li> </ol>		
2.	<b>Authors:</b>	<b>Amneesh Singla, Shamik Shandilya, Piyush Gera, Amit Gupta</b>	4-7
	<b>Paper Title:</b>	<p><b>Process Parameter Optimization using DOE Methodology on Al- MMC to Maximize Mechanical Properties</b></p> <p><b>Abstract:</b> Metal matrix composites (MMCs) have proved their practicability as good replacements to orthodox alloys in industries like automobile, aerospace and mineral processing but the fabrication of these composites should be well regulated and optimized to have a superlative effect. The intention of this research is to optimize the stir casting process parameters to maximize mechanical properties like hardness. The matrix material used is Al7075-B4C which is optimized by DOE methodology and a mathematical model is developed. In this investigation L9 orthogonal arrays has been used through Taguchi method. The microstructures analysis of Al-B4C composite were detected by optical microscope and the hardness value is attained. The Al-MMC was fabricated by stir casting technique &amp; the factors used in the making of composite samples were melt temperature, stirring and B4C content. The ANOVA was done to find the percent contribution of process parameters and their correlations. The effort revealed the best optimized stirring duration, melt temperature and B4C content. The B4C was found to be most imperative factor responsible for the hardness increment.</p> <p><b>Keywords:</b> Stir casting, Al-MMC, Taguchi, ANOVA, Hardness &amp; B4C.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>Hort, N., &amp; Kainer, K. U. (2006). Powder Metallurgically Manufactured Metal Matrix Composites. Metal Matrix Composites: Custom-made Materials for Automotive and Aerospace Engineering, 243-276.</li> <li>Surappa, M. K. (2003). Aluminium matrix composites: Challenges and opportunities. Sadhana, 28(1-2), 319-334.</li> <li>Chawla, K. K., &amp; Chawla, N. (2014). Metal Matrix Composites: Automotive Applications. Encyclopedia of Automotive Engineering.</li> <li>Hashim, J. (2001). The production of cast metal matrix composite by a modified stir casting method. Jurnal teknologi, 35(A), 9-20.</li> <li>Bhushan, R. K., &amp; Kumar, S. (2011). Influence of SiC particles distribution and their weight percentage on 7075 Al alloy. Journal of materials engineering and performance, 20(2), 317-323.</li> <li>Naher, S., Brabazon, D., &amp; Looney, L. (2007). Computational and experimental analysis of particulate distribution during Al-SiC MMC fabrication. Composites Part A: Applied Science and Manufacturing, 38(3), 719-729.</li> <li>Ravi, K. R., Pillai, R. M., Pai, B. C., &amp; Chakraborty, M. (2007). Influence of Interfacial Reaction on the Fluidity of A356 Al-SiCp Composites—A Theoretical Approach. Metallurgical and Materials Transactions A, 38(10), 2531-2539.</li> <li>Aqida, S. N., Ghazali, M. I., &amp; Hashim, J. (2004). Effects of porosity on mechanical properties of metal matrix composite: an overview. Jurnal Teknologi, 40(A), 17-32.</li> <li>Jit, N., Tyagi, A. K., Singh, N., &amp; Singh, A. (2011). Comparison of Porosity and Density for (A384. 1) 1-x [(Reinforcement) p] x MMC System Using Adaptive Neuro-Fuzzy Inference System. Advances in Applied Science Research, 2(4), 240-250.</li> <li>ASTM International, 2003, “Annual Book of ASTM Standards”, Section 3: Metals Test Methods and Analytical Procedures, Volume 03.01, Designation: E10-01.</li> </ol>	

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