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1.	Authors:	Akshay D. Barbade, Sagar D. Girase, Manoj A. Deore, Kaustubh D. Patil	
	Paper Title:	Compact Crop Cutter and Thresher	
	<p>Abstract: Rice harvesting and threshing is done manually in Punjab whereas in Sindh, harvesting is done manually and threshing by tractors as well as bullocks treading. The reconditioned wheat combines are also used for rice harvesting in Punjab. These are insufficient in number and hardly cover 40 percent rice area in Punjab. These are not properly adjusted for rice harvesting and are operated by poorly trained operators. This results in sizable field loss and internal damage to harvested rice grains and hence affects its milling quality. Agricultural mechanization refers to interjection of improved tools, implements and machines between farm workers and materials handled by them. Independent India ushered in a process of agricultural mechanization and revival of rural agroprocessing which got acceleration during post-Green Revolution period. Irrigation pump sets, power threshers, tractors, power tillers and matching implements, including for 65 Million draft animals have become popular. Seed and seed-cumfertilizer drills, planters, mechanical rice transplanters, vertical conveyor reapers, and combines soon followed. In the recent past, Zero-till Drill and Raise Bed Planters have found good acceptance from the farmers. Currently mechanization is in increasing demand. Farmers and policy makers and developmental agencies now realise that for increasing production and productivity at reduced unit cost of production, free of arduous labour, agricultural mechanization is essential. It is brought in centre stage with globalization of world markets. Introduction of electromechanical power units supplementing and substituting traditional animate sources of farm power is going to continue. For achieving desired intensity of cropping average farm power requirement of 2 kW/ha is considered essential, currently it is 1.15kW/ha. Shifts in agriculture leading to crop diversification towards horticulture, animal husbandry fishery, forestry and on-farm agro-processing are going to bring in greater degree of mechanization. India dominated by small and marginal land holdings may not have same trend of mechanization as the developed world but it is going to grow close to it with its own variant as labour wages go up and WTO Competition compels us to keep reducing unit costs of production, processing, packaging, and retail and situations demanding provision of custom servicing, custom agro-processing and acceptable standards of living.</p> <p>Keywords: Rice, processing, Sindh, Agricultural, WTO, Punjab, policy, Introduction.</p> <p>References:</p> <ol style="list-style-type: none">1. Ahmad T. 2004. Effect of paddy harvesting methods on rice quality and head rice recovery (unpublished).2. Anonymous 1986. Master plan for paddy/rice handling and processing improvement in the Islamic Republic of Pakistan (Draft of final report), published by Japan International Agency, Japan in March, 1986.3. Berrio L, Jennings PR and Torres EA. 2002. Breeding rice in Colombia for tolerance to delayed harvesting. IN.: Proceedings of the 29th Session Rice Technical Working Group. Little Rock, Arkansas. (In Press).4. Naphire 1997. Technical Guide on Grain Postharvest Operation. National Postharvest Institute for Research and Extension (NAPHIRE). Munoz, Nueva Ecija, Philippines.5. Samson B. and B. Duff. 1973. Patterns and magnitudes of grain losses in paddy production. Proceedings of IRRI Saturday Seminar. July 1973. International Rice Research Institute (IRRI). Los Bafios, Philippines.6. Salim M. and MA. Sagar. 2003. Milling quality of rice. Pakistan Journal of Food Sciences.13 (3-4): 55-62.7. Toquero F. and B. Duff. 1974. Survey of postproduction practices among rice farmers in Central Luzon. Proceedings of Saturday Seminar Paper. International Rice Research Institute (IRRI). Los Banos, Philippines.		
2.	Authors:	Vikas Dilip Wagh, Aniket Pagar, Valmik Navale, Swapnil Rajole	
	Paper Title:	Automatic Job Cleaning Machine	
	<p>Abstract: Material cleaning by general definition is to make free the material from contaminants that are adhered chemically, physical or mechanically to that material. Contaminants are soils or impurities either generated during the forming process of new surfaces or deposited foreign matter from surrounding environments on material. Contaminants adhered to the material under high mechanical pressure, or by products of chemical additives or chemical protective films are common in metal forming processes and are difficult to remove. The degree of required cleanliness can range from practical cleaning needed in in-process operations to precision or critical cleaning required prior to coating or final assembly.</p> <p>Keywords: Adhered chemically, physical or mechanically, Contaminants, mechanical pressure, chemical additives or chemical protective.</p> <p>References:</p> <ol style="list-style-type: none">1. Himanshu Agarwal, Kaushalendra, Kr. Dubey, Subhash Kamal, “ Development of Mechanical Fuel Injector Cleaning Machine in Cost Effective Manner ”, International Journal of Engineering and Advanced Technology (IJEAT), April 2013.2. Paweł FABIAŃSKI Ryszard ŁAGODA, “Intelligent Control Unit for Ultrasonic Cleaning System”, University of Technology, Institute of Control and Industrial Electronics, Feb 2012.3. Sami B. Awad, “Aqueous Ultrasonic Cleaning and Corrosion Protection of Steel Components”, September 2004.4. R.S. Khurmi and J. K. Gupta, “Machine Design”, Eurasia Publishing House (Pvt.) Ltd.5. V.B. Bhandari, “Design of Machine Element”.6. http://en.wikipedia.org/wiki/Ansys7. http://www.selec.com/din-rail-mounted-timers8. http://en.wikipedia.org/wiki/Limit_switch9. http://www.janatics.com/simple%5CImages%5CDirectional_Control_Valves%5CDS2%2018%20valve.pdf10. http://www.quakerchem.com/product/metal-removal-fluids/11. http://fortunaengineering.com/company.html		

3.	Authors:	Shilpa G, Siva S. Yellampalli	
	Paper Title:	Microcontroller Based Cryptosystem with Key Generation Unit using TEA Algorithm	
	<p>Abstract: This work focuses on the light weight security algorithm Tiny Encryption in order to increase the speed and to reduce the hardware complexity. Algorithm TEA which can be implemented in microcontroller to adapt with many real time constraints such as memory, data loss and low cost. The additive feature of this proposed system is that it uses Key Generation Unit (KGU) to produce the random key to make it optimal for sensitive data transfer in many real-time applications. This above work uses microcontroller and the performances of this cryptosystem is analyzed by implementing the cryptographic algorithm TEA with key generation unit. The work extends with implementation of serial (UART) as mode of communication to transfer the data from encryption unit to decryption unit.</p> <p>Keywords: TEA, UART.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Dr. Deepali Virmani, Nidhi Beniwal, Gargi Mandal, Saloni Talwar, "Enhanced Tiny Encryption Algorithm with Embedding", BPIT, Rohini, New Delhi. 2. Wheeler D., and R. Needham. TEA, a Tiny Encryption Algorithm, Proceedings of the 2nd International Workshop on Fast Software Encryption, Springer-Verlag, 1995, pp. 97-110. 3. Anjula Gupta, Navpreet Kaur Walia, " Cryptography Algorithms: A Review", Volume 2, Issue 2, International Journal of Engineering Development and Research, © 2014 IJEDR. 4. P. Israsena, "Design and Implementation of Low Power Hardware Encryption for Low Cost Secure RFID Using TEA", 2005 [Fifth International Conference in Information, Communications and Signal Processing, Bangkok, Thailand]. 5. Massey, J.L., "An Introduction to Contemporary Cryptology", Proceedings of the IEEE, Special Section on Cryptography, 533-549, May 1988. 6. John Kelsey, Bruce Schneier, and David Wagner, "Related-key cryptanalysis of 3-Way, Biham-DES, CAST, DES-X NewDES, RC2, and TEA," LNCS, Vol. 1334, pp. 233-246, Springer-Verlag 1997. 7. The Sampling of Noise for Random Number Generation: Craig S. Petrie and J. Alvin Connelly, "The Sampling of Noise for Random Number Generation", IEEE Proceedings of ISCAS, 6:26-29, 1999. 8. PIC 24FJ128GA204 Datasheet available at www.microchip.com/PIC24FJ128GA204/ 9. Senthil Kumar.S, Manjupriya.M, "Microcontroller based Cryptosystem with Key Generation unit," International Conference on Computer, Communication and Electrical Technology, pp. 1-7, March, 2011 10. Bruce Schneier. Applied Cryptography: Protocols, Algorithms, and Source Code in C. John Wiley & Sons, 2002 		15-19