



De La Salle University - Dasmariñas

**INTEGRATED PEANUT SHELL PARTICLE**

**BOARD MAKER**

A Thesis  
Presented to Faculty of the  
Mechanical Engineering Department,  
College of Engineering, Architecture and Technology  
De La Salle University – Dasmariñas  
City of Dasmariñas, Cavite

In Partial Fulfilment of the Requirements for the  
ME Research Project 1 (MEET514f)

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## ABSTRACT

**LACUATA, L.K., LAPUENTE, M. and YU, D.R., Integrated Peanut Shell Particle Board Maker.** Bachelor of Science in Mechanical Engineering, De La Salle University – Dasmariñas, Cavite, April 2014. Adviser: Engr. Jorge B. Yasay

This research is conducted to design, build and test a continuous peanut shell particle board maker. Through continuous research and consultation, the effective process to make a continuous peanut shell particle board maker starts from grinding the peanut shell to finer particles which will pass through the sifter. Fine particles of peanut shell and adhesive will be mixed thoroughly to the screw type mixer, after mixing the mixer's door will open to transfer the mixture to the dispenser. The mixture will be dispensed to the tray and pressed by rollers and heated until it is ready for curing. A series of test using different ratio of grinded peanut shell, adhesive and heating time are made to attain the desired mixture and effective heating time which resulted to the value of 43% peanut shell, 57% adhesive, 80°C temperature and 25 minutes heating time and an approximate time of 8 hours curing time. Conclusively, a prototype machine is made that can produce a 200mm x 200mm x 12mm particle board. It has a 7 particle boards a day for an 8 hour operation capacity.