A Mechanism for Cutting Coconut Husks

Kishan Ramesar^a, Chris Maharaj^{b, Ψ}, and Umesh Persad^c

^{a,b} Department of Mechanical and Manufacturing Engineering, The University of the West Indies, St. Augustine Campus, St. Augustine, Trinidad and Tobago, West Indies. E-mails: kishanramesar@gmail.com; chris.maharaj@sta.uwi.edu

^c Centre for Production Systems, The University of Trinidad and Tobago, O'Meara Campus 78-94 O'Meara Industrial Park, Arima, Trinidad and Tobago, West Indies; E-mail: umesh.persad@utt.edu.tt

 ${}^{\varPsi}$ - Corresponding Author

(Received 29 August 2014; Revised 19 November 2014; Accepted 30 January 2015)

Abstract: This paper details the conceptual design of a machine for cutting coconut husk halves into pieces for activated carbon production. Alternative interlocking and welded blade arrangements are presented with the potential for scaling up the processing of coconut husks into smaller pieces. Virtual simulations and the experimental testing of a functional prototype are used to validate the conceptual design. The design is shown to be functionally acceptable, and directions for further improvements and development are outlined.

Keywords: Machine design, conceptual design, coconut shell processing