

***DESIGN AND ANALYSIS OF A ROLLER-GRID PEELING MECHANISM
ON A CYLINDRICAL FRICTION-BASED PEANUT SHELLING MACHINE***

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ABSTRACT

Peanuts are an important agricultural commodity that requires shell removal to improve quality and market value. This study aims to design and evaluate a household-scale peanut shelling machine equipped with a roller-grid peeling mechanism and a blower-based separation system. The design focuses on improving shelling efficiency and reducing kernel damage through modifications to the roller and optimization of the grid structure. Performance tests were conducted with varying input weights to measure shelling efficiency and kernel breakage percentage as the main indicators of machine performance. The findings demonstrate that the machine can achieve adequate shelling efficiency with relatively low kernel damage, making it suitable for household-scale peanut processing applications.

Keywords: *shelling machine, peanuts, roller-grid, blower, shelling efficiency*