

## Design of Mechanically Operated Bamboo Splitting Equipment



**M. Abin Raj**

abinrajm@hotmail.com  
Ph. No: 0 81971 10107

<b>Student's Name</b>	<b>M. Abin Raj</b>	<b>PD (FT-2012)</b>
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<b>Academic Supervisor(s)</b>	Srinivasa and Chiranjith Barui
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<b>Industrial Supervisor(s)</b>	
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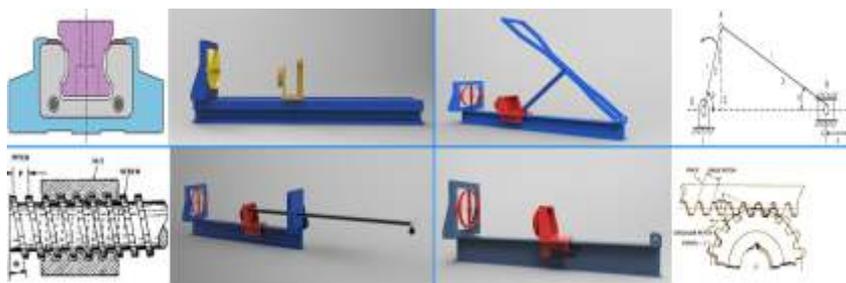
**Keywords:** Designing, Bamboo Splitting Device, Data Collection, Concept Generation, Working Model

**Abstract:**

In social, economic and ecological terms, bamboo is the most important non-timber forest products of the developing countries. The close relation between people and these plants resulted in numerous processing technologies being developed. Some of these technologies have remained unmodified over long periods of time. An attempt is made to explore the various bamboos splitting device and to design a mechanically operating bamboo splitting device for bamboo splitters to overcome the usability, functionality and ergonomic issue.

It is important to understand the user, working environment, various type of products used and available products in the market to fulfil the requirement of the user. To design a mechanically operated bamboo splitting device the process was started with literature survey by collecting various data from various resources. Product study and market study was conducted to understand the product, function and different type of bamboo splitting device available in market. By analyzing the collected data various issues and need were identified. From the identified need, Quality Function Deployment (QFD) and Product Design Specification (PDS) were made. Based on PDS four different concepts were generated.

Final concept was selected by weight ranking method. The mechanically operated bamboo splitting device was designed for splitting bamboo taking less time and ergonomically comfortable. The handle and the bamboo holder provide maximum safety. And finally, a 1:1 scale working model was made to validate the concept collect feedback. Design validation was carried out with the user group and feedback obtained was positive and satisfactory.



**Various concepts of bamboo splitting equipments**



**Final concept**



**1:1 working model of bamboo splitting equipments**