



Shri Vishweshwar Shikshan Prasarak Mandal's  
**Shri Vishweshwarayya Abhiyantri  
Padvika Mahavidyalaya**

Almala Tq .Ausa Dist.Latur(413520)

**Department  
of  
Mechanical Engineering**

E News Letter 

**2023-2024**



## Institute Vision & Mission

### Vision

“To provide quality technical education in Rural Area”

### Mission

To impart eco-friendly advanced engineering knowledge.

To inculcate ethical and moral values among budding engineers.

Establishment of mentoring system for all-round personal and Professional enhancement.

To make students aware social and national responsibilities.

To encourage students to pursue higher education and take Competitive and career enhancement courses.

To create technology based society which is the need of modern era.



## Department Vision & Mission

### Vision

To provide technical education for students with advance technology in mechanical engineering.

### Mission

M1. To impart highest quality education to students by collaborative environment and knowledge to make them globally competitive engineers

M2: To develop alliances with educational institutions, industries and alumni to promotetraining, Innovative ideas.

M3. To encourage students to adopt leadership skills in career by lifelong learning with ethics and values



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# ROBOTICS

## ROBOTICS :

Robotics is a branch of engineering that involves the conception, design, manufacture and operation of robots. The objective of the robotics field is to create intelligent machines that can assist humans in a variety of ways.

Robotics can take on a number of forms. A robot may resemble a human, or it may be in the form of a robotic application, such as robotic process automation (RPA), which simulates how humans engage with software to perform repetitive, rules-based tasks.

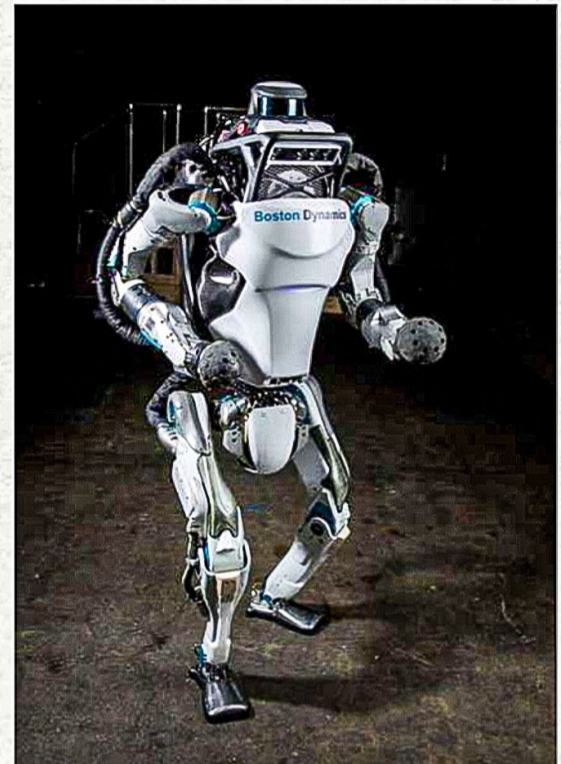
While the field of robotics and exploration of the potential uses and functionality of robots have grown substantially in the 20th century, the idea is certainly not a new one.

## HISTORY OF ROBOTICS

The term robotics is an extension of the word robot. One of its first use came from Czech writer Karel Čapek, who used the word in his play, *Rossum's Universal Robots*, in 1920.

Perhaps about the year 2020 the process will have produced the first broadly competent "universal robots" with lizardlike minds that can be programmed for almost any routine chore.

By 2030 second-generation robots with trainable mouselike minds may become possible. Besides application programs, these robots may host a suite of software "conditioning modules" that generate positive- and negative reinforcement signals in predefined circumstances.



By 2040 computing power should make third-generation robots with monkeylike minds possible. Such robots would learn from mental rehearsals in simulations that would model physical, cultural, and psychological factors.



Robots have a wide range of uses and applications across different industries and fields including:

**Manufacturing and production:** Robots are widely used in the manufacturing sector for tasks such as assembly, inspection, and packaging. They can work in hazardous or repetitive environments, reducing the risk of injury to human workers and increasing productivity.

**Healthcare:** Robots are used in the healthcare for various purposes, such as assisting in surgery, rehabilitation, and elderly care. For example, surgical robots can perform precise movements and reduce the risk of human error during operations.

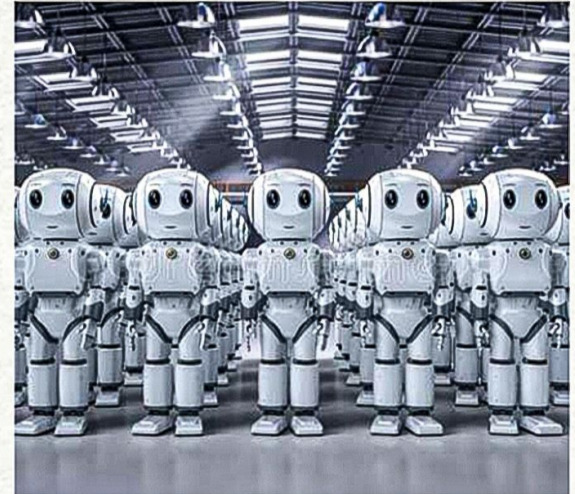
**Agriculture:** Agricultural robots are used for tasks such as planting, harvesting, and monitoring crops. They can help increase efficiency and reduce the need for manual labor in agriculture.

**Retail and logistics:** Retail and logistics robots are used for tasks such as inventory management, order fulfillment, and customer service. They can help increase efficiency and reduce costs in these industries.

**Space exploration:** Robots are used for space exploration, including missions to Mars and other planets. They can perform tasks such as collecting and analyzing data, drilling for samples, and mapping the terrain.

**Search and rescue:** Robots are used in search and rescue operations, where they can access dangerous or difficult-to-reach areas to search for survivors or provide assistance.

**Military:** Robots are used in military operations for tasks such as reconnaissance, surveillance, and bomb disposal.



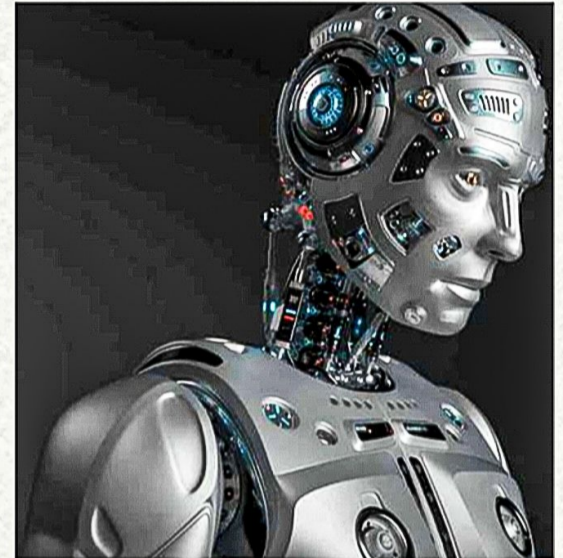
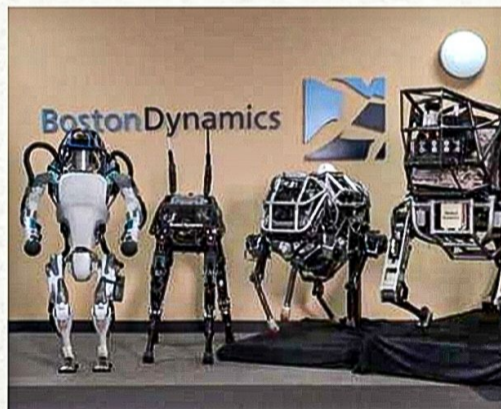
## ADVANTAGE

There are several advantages of robotics, some of which are:

1. **Precision:** Robots can perform tasks with high precision, accuracy, and repeatability that is difficult for humans to achieve. They can carry out tasks with consistent quality and precision without getting tired or making mistakes.
2. **Efficiency:** Robots can work continuously without taking breaks or getting tired, leading to increased productivity and efficiency. They can also perform tasks that are too dangerous or tedious for humans to undertake.
3. **Cost Savings:** Robots can help organizations reduce labor costs by automating various tasks. They can also help reduce production costs by minimizing scrap and rework.
4. **Flexibility:** Robots can be programmed to perform a wide range of tasks, making them highly adaptable to changing production needs. They can also perform tasks in hazardous or difficult-to-reach areas.

## DISADVANTAGES :

1. **High Cost:** One of the major disadvantages of robotics is the high cost of design, manufacturing, and implementation. The advanced robotics technology is expensive in every aspect, from purchasing to maintenance, and requires a significant financial investment.
2. **Lack of Flexibility:** Robots are designed to perform specific tasks, and are not easily adaptable when it comes to new, non-standard jobs. They need to be reprogrammed or redesigned to make changes within their function, unlike human workers who can easily adapt to new challenges.
3. **Job Loss:** The rise of robotic technology has led to a decrease in job opportunities for human workers, particularly in industries such as manufacturing, where robots can perform tasks more efficiently and for longer hours without fatigue.
4. **Technical Issues:** Robotics systems are complex and require a high level of technical expertise to design, develop, and repair.



## CONCLUSION

Today we find most robots working for people in industries, factories, warehouses, and laboratories. Robots are useful in many ways. For instance, it boosts economy because businesses need to be efficient to keep up with the industry competition. Therefore, having robots helps business owners to be competitive, because robots can do jobs better and faster than humans can, e.g. robot can built, assemble a car. Yet robots cannot perform every job; today robots roles include assisting research and industry. Finally, as the technology improves, there will be new ways to use robots which will bring new hopes and new potentials.

# Student Paper presentation on Peanut Peeling Machine Topic

IJSART - Volume 10 Issue 3 – MARCH 2024

ISSN [ONLINE]: 2395-1052

## Peanut Peeling Machine

Patil Tryambak Keshavrao<sup>1</sup>, Manoranjan Kumar<sup>2</sup>, Patil Chaitanya Sanjiv<sup>3</sup>,  
Priya Kumari<sup>4</sup>, Prof. Sabde Abhijit Manoharrao<sup>5</sup>, Prof. Chaudhari Rupali Govind<sup>6</sup>

<sup>1,2,3,4</sup> Dept of Mechanical Engineering

<sup>5</sup> Guide Lecturer, Dept of Mechanical Engineering

<sup>1,2,3,4,5</sup> Vishweshwarayya Abhiyantriki Padvika Mahavidhyalay, Almala, Maharashtra, India.

**Abstract-** In India, most of land use for agricultural purpose which produces semi-finished product or goods. Groundnut also one of the agricultural semi-finished goods. Groundnut is grown on small scale farmers in developing countries like India. The average kernel price is approximately twice the price of pod. . Lack of groundnut t processing machines, especially groundnut Sheller, is a major problem of groundnut production, especially in our country India. In the beginning the peanuts were separated from its shells by the workers. They simply decoct the groundnut by their hands and separate the peanuts from its shell. The output got from this method, was very low and it does not fulfill the market demand because it was very time consuming process. A research-work for design, fabricate, and performance evaluation of a groundnut Sheller consisting of feed hopper with a flow rate control device, shelling unit, separating unit and power system. The performance of the machine was evaluated in terms of throughput capacity, shelling efficiency, material efficiency and mechanical damage. Regression models that could be used to express the relationship existing between the Sheller performance indices, pod moisture content and feed rate were establish.

**Keywords-** Frame, Belt and Pulley, Bearing, Motor , Hopper, Nut & Bolts.

### I. INTRODUCTION

The purpose of this work is to understand the knowledge of design and fabrication mechanism of groundnut Sheller machine. The design is an environment friendly and uses simple mechanism properties such as shelling system, blowring mechanism and automation separating system etc. In this, some crushing force is needed to crush the groundnut. The design is so done that the knowledge of designing, mechanism and forces are increased. This project consists of designing and fabrication of an automatic groundnut Sheller machine considering various important parameters. In this project, designing & development of a machine to crush or shell groundnut so the farmers can gain high profit by selling groundnut direct in market. As well as the study of manufacturing was very important in order to carry out this project to ensure that what are needs to do. This project

involves the process of designing and fabrication of different parts of this shelling machine considering forces and ergonomic factor for people to use. This project is mainly about generating a new concept of groundnut shell (crush)that would make easier to bring anywhere and easier to crush ground nut. After the design has completed, it was transformed to its real product where the design is used for guideline.

### II. PROBLEM IDENTIFICATION

In the beginning the peanuts were separated from its shells by the workers. They simply decoct the groundnut by their hands and separate the peanuts from its shell. The output got from this method, was very low and it does not fulfill the market demand because it was very time consuming process. It was also a boring work for the worker. Traditional method of separating nuts from groundnuts by Putting the peanuts in a cloth bag and rolling over it with a rolling pin. This technique did a good job of cracking the shells (deleting the pain fulfingers problem), but we still had to pick the peanuts out since they didn't come all the way loose. This is not a reliable method for shell aground nut due to this crack the ground nut and nuts mixed with shell. Introduction gives knowledge that the traditional method is not asufficient method for separating the groundnut. Due to this manual process, identify some major problem & to over-come this problem some idea or concepts generates. According to generated ideas deciding objective of project.

Formers and small businessman are facing following main problems:-

- 1) Currently base process is manually operated ( pedal operated )
- (2) Nuts & husk (outer covering of groundnut) is mixed after crushing(shelling operation).
- (3) Low productivity & time consuming

### III. PROBLEM FORMULATION

The aim is to design & develop a low cost ground nut shelling machine which will help farmer to sell finished (shelled groundnut) instead of unshelled groundnut.

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### III. PROBLEM FORMULATION

The aim is to design & develop a low cost ground nut shelling machine which will help farmer to sell finished (shelled groundnut) instead of unshelled groundnut.

Considering the above problems we are going to design and fabricate such a machine that will eliminate most of the problems from previous available manually shelling machine, so human effort is reduced and getting more productivity, earn more profit to farmer. The machine shown in figure below is the modeling of groundnut Sheller machine. Concept A. Introducing low cost automation was to overcome problems with the current manual traditional method. The concept of the work is, (1) Observe the manual methods to identify the important process variables. (2) Quantify the important method. (3) Develop a prototype automation system which could control over all of the process. (4) Investigate all areas of automated forming. (5) Produce a specification for a low cost automated system. (6) Refined design of the machine & fabricate the machine, as this plays a major role in rural area.

### 3.1 OBJECTIVE

The main aim of this project is to overcome the traditional method. (1) To reduce wastage due to crack or crushed groundnut. (2) To increase the efficiency. (3) To reduce the hard work and To reduced time to shell the groundnut. (4) To develop a low cost machine which can be used by farmer to convert their semi-finished (shell groundnut) into finished product (groundnut). (5) It satisfies the need of village people to earn more money

### IV. WORKING PRINCIPLE

Groundnut SHELLER is operated on the shearing action, blowring action and separating action. Firstly the inputs i.e. the groundnut are fed to the machine through the hopper. Then groundnuts come in contact with the two members, one is semicircular net and another is roll shaft. Semicircular net is a stationary member while the roll shaft is rotating member. When the groundnut comes in contact with these two members then the shearing action takes place here. Due to shearing action (crushing) the groundnuts get shelled and divided into two parts, i.e. in the peanut and outer shell of the groundnuts. There is a clearance provided between the net and roll shaft. The clearance provided depends upon the size of the groundnuts which is to be de-coated. After shelling the groundnut the peanut and shells of the groundnut get dropped from the semicircular net, in downward direction then a centrifugal force is applied by a fan on the peanut and shell of the groundnut. Due to more weight, the peanuts get moved downward and collected in the separator. But due to lighter weight the shell of the groundnuts are thrown outside the machine and which are collected from the backside of the machine. From the shelling chamber the unshelled groundnuts also get dropped in the tray (7% to 10%). This groundnut gets dropped from the clearance made among the grill.

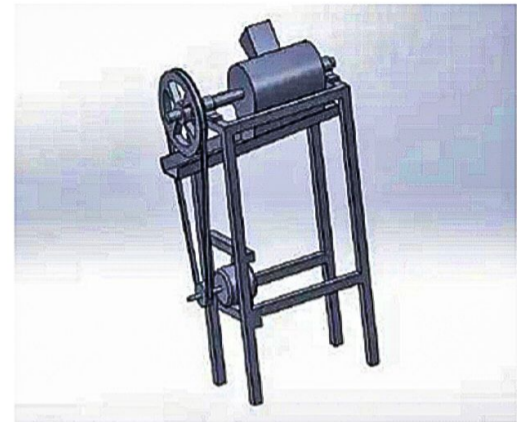


Fig. Peanut Peeling Machine

5. Following are the main components of machine:-

- (1) Hopper :
- (2) Semicircular Net
- (3) Roll Shaft
- (4) Pedestals Bearing

#### 1. Hopper



#### 2. Semicircular nut



#### 3. Pulleys



4. Pedestal Bearing



The arrangement of various component of "Groundnut SHELLER" is being done are as follows:

- (1) The foundation frame is being selected which carry the entire load of the machine.
- (2) The roller shaft is mounted on the top face of the foundation frame with the help of pedestals bearing which is fasten using nut and bolt.
- (3) The fan shaft is mounted at the back face of the foundation frame with the help of pedestals bearing which is fasten using nut and bolt.
- (4) The semicircular net mounted on the support provided at inner side of the foundation frame.
- (5) The hopper is mounted on foundation frame covering rolling shaft, and permanently fastened at one side using hinged, and other side is temporary fasten for time to time change of semicircular net.
- (6) Fan cover fastened using nut and bolt to back side of foundation frame, which cover fan shaft.
- (7) End of foundation frame (top face) carry the electric motor, which provide necessary power.
- (8) 18 inch, 9 inch, and 3 inch pulley is mounted on roller, fan and motor shaft respectively, over which belt is mounted for transmission of power.
- (9) The above arrangement ensure that all element of the project are balanced and also center of gravity of the assembly is on axis as that of the center of gravity human body that is on spiral cord.

## VII. CONCLUSION

Proper evaluation of the design will be performed and created something even better instead of simply manually operated operations. Finally we conclude that atomize machine is better option to use farmer instead of manually operated. The demands atomize shelling machine of farmer & other customers will be also considered while designing machine. Purpose of fabrication of the Sheller was to determine the suitability of machine for farmer's use. Five experiments were performed with peanuts. Since this machine is made for small businessman or for farmers, therefore the work carried out by this machine is less.

## VIII. FUTURE SCOPE

Future scope of work is what is required to be delivered. It is importuned that future scope statement is clear unambiguous and easily to understand. It should also include details leaving the reader in no doubt what is being delivered as part of project. The ground nut Sheller, with sufficient market penetration, would offer a substantial inshelling efficiency. Most shelling is done by hand in ground nut producing region of the developing world. This type of task is usually done by woman. The low cost groundnut Sheller is a case of intermediate technology

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Ladies Haldi kumkum ceremony on the occasion of Makar Sankranti



Personality Development Program by Deepali Kelkar Mam (Anchor at Sahyadri Doordarshan/Writer)



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Vishwa Vertex 2k24 Winners  
(Paper Presentation)



## IEDSSA Sport Inauguration 2k24



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## **Is Industrial Visit important??**

The industrial visit is considered one of the most tactical methods of teaching.

It provides students with an opportunity to learn practically through interaction, working methods and employment practices. It gives exposure from an academic point of view.

# Student Placement



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या कंपनीने विश्वेश्वरय्या अभियांत्रिकी पदविका महाविद्यालयामार्फत मुलाखतीद्वारे दि.०५/०३/२०२४ (मंगळवार) रोजी घेण्यात आलेल्या कॅम्पस इंटरव्हिव मध्ये यशस्वी होऊन कंपनीचे १.८ लाख पॅकेज मिळाल्याबद्दल सर्व विद्यार्थ्यांचे ...संस्थेच्या व विश्वेश्वरय्या अभियांत्रिकी पदविका महाविद्यालयाच्यावतीने...

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# Vishwa Vertex 2k24

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