



## **ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

(Unit of Alva's Education Foundation (R), Moodbidri)

Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi. Recognized by Government of Karnataka.

**A+, Accredited by NAAC & NBA (ECE & CSE)**

Shobhavana Campus, MIJAR-574225, Moodbidri, D.K., Karnataka

Ph: 08258-262725; Mob:722262724,7026262725,mail:principalaiet08@gmail

## **DEPARTMENT OF AGRICULTURE ENGINEERING**

ACTIVITY REPORT 2022-23





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## Annexure



## **Department of Agriculture Engineering**

Guest Lecture Report on **“Changing Scenario in cashew nut processing and Entrepreneurial Opportunities for Youth of India”**, by **Dr. Balasubramanian**, Principal Scientist (AS & PE), ICAR- Directorate of Cashew Research, Puttur.

### **Objectives**

To know about importance of changing scenario in cashew nut processing and also about entrepreneurial opportunities for youth of India in the field of cashew processing.

### **Report with geo tagged photos**





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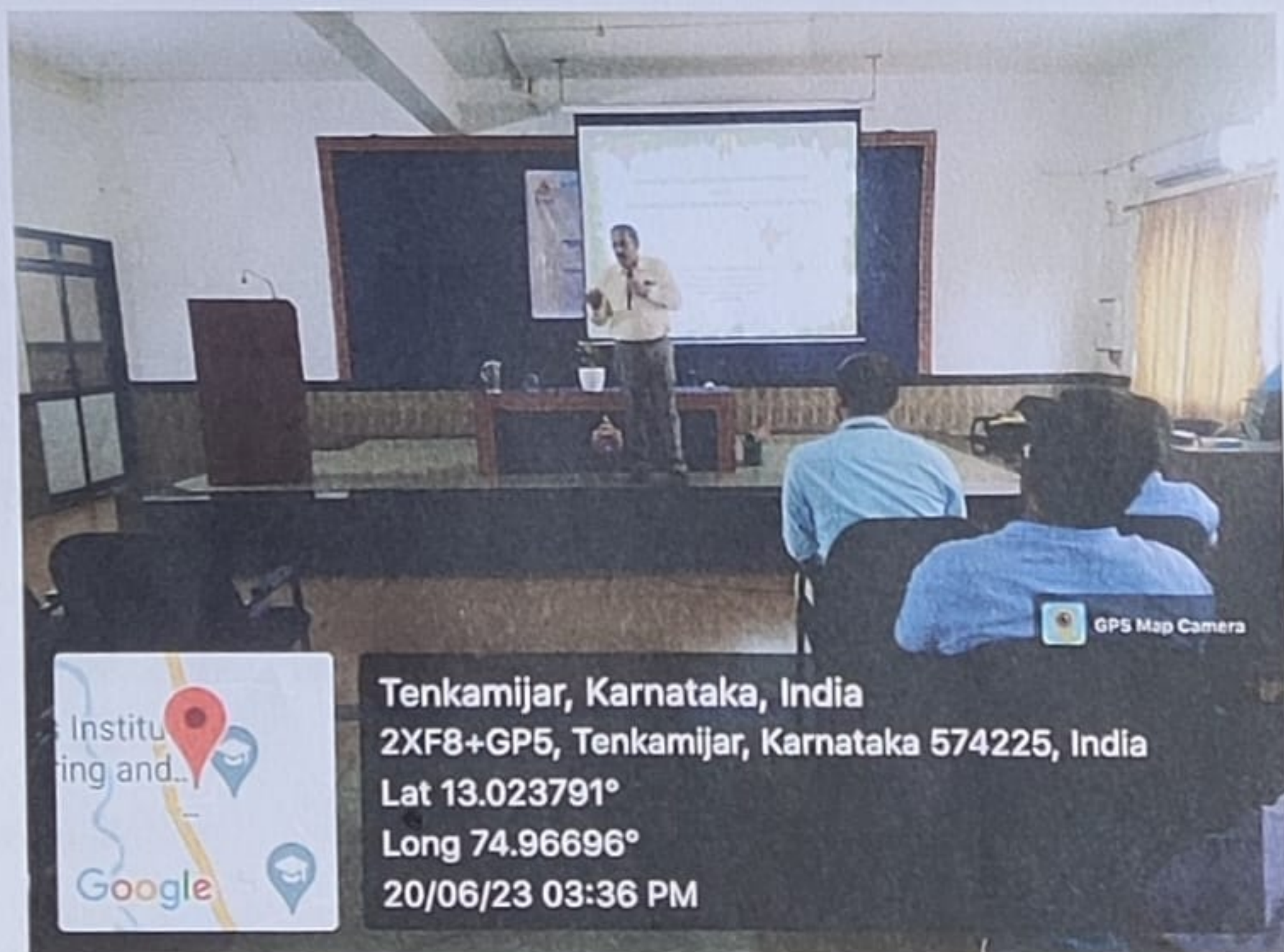
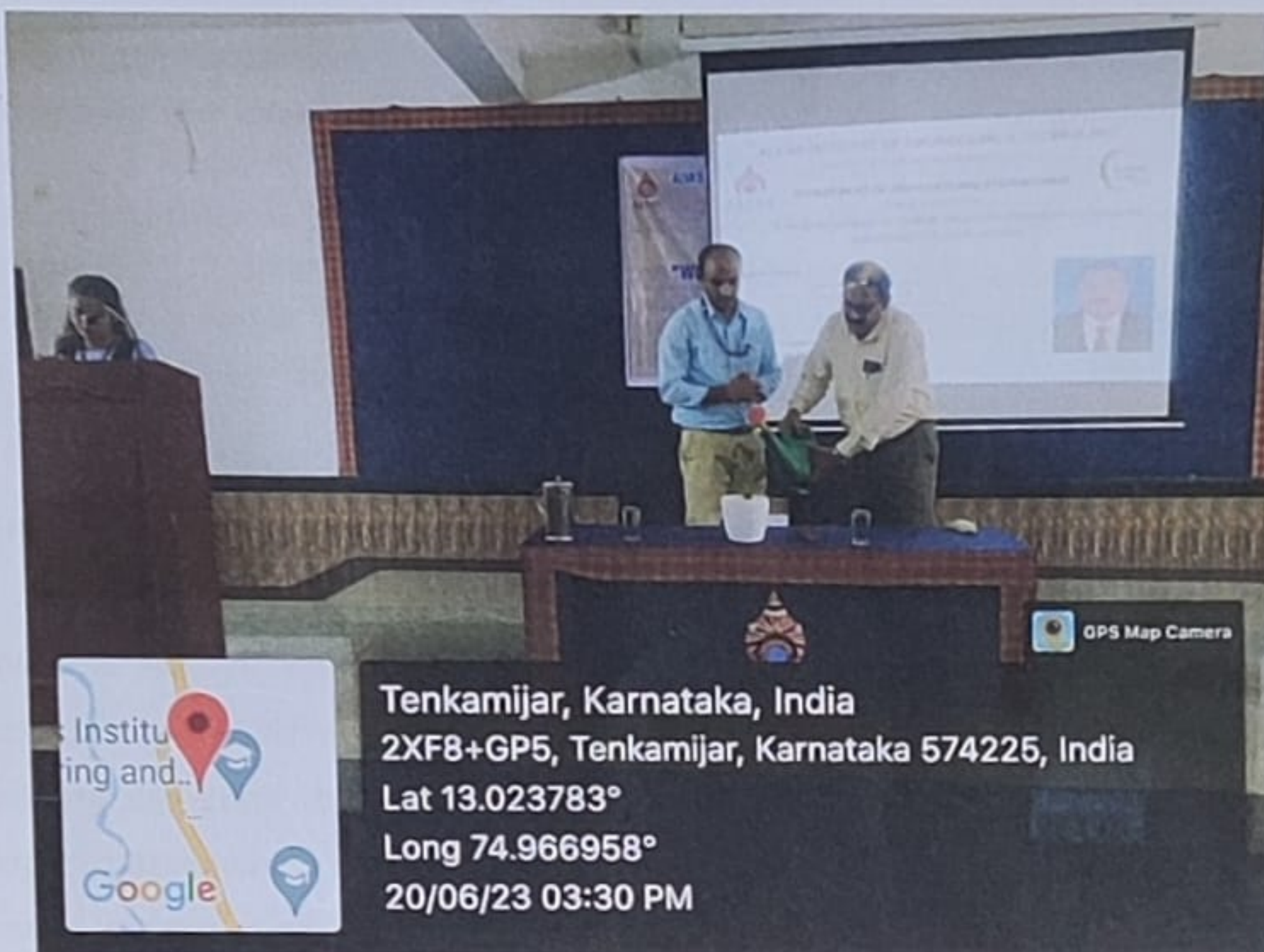
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## **The outcome of the Event**

Dr. D. Balasubramanian Principal Scientist (AS & PE) was welcomed and introduced by the Head of the Department of Agricultural Engineering. Later the technical session was started by the resource person on Cashew nut processing machines. He started the session with the basic concept of cashew nut processing followed by cashew nut machines and informed us about solutions to increase the income from cashew nut cultivation his detailed explanation is given below.

India is a major player in the global cashew nut processing industry, with the country being one of the world's largest producers and processors of cashew nuts. As of my last knowledge update in September 2021, India processed around 1.5 million metric tons of cashew nuts annually and accounted for approximately 25-30% of the global cashew processing capacity. The cashew processing industry in India provided employment opportunities to millions of people, particularly in the states of Kerala, Maharashtra, and Tamil Nadu. However, please note that statistics may have changed since then, so it's advisable to consult the latest reports or government sources for the most up-to-date information on cashew nut processing in India after that cashew nut processing machines and their advantages are explained in the below sections.

### **Cashew nut processing – Machines**

Cashew nut processing involves several machines and equipment to streamline the various stages of processing. Here are some of the key machines commonly used in cashew nut processing.

#### **1. Raw Cashew Nut Grading Machine**

- This machine is used to sort raw cashew nuts based on their size and quality.

#### **2. Steam Boiler**

- Steam is used to soften the cashew shells before shelling, and a steam boiler is essential for this purpose.



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## 3. Cashew Shelling Machine

- This machine is used to remove the outer shell or husk from the cashew nut.

## 4. Cashew Nut Cutting Machine

- After shelling, cashew nuts may need to be cut into smaller pieces for various applications, such as snacks or culinary uses.

## 5. Cashew Nut Drying Machine

- Drying is essential to reduce the moisture content in cashew nuts, preventing mold growth and ensuring longer shelf life.

## 6. Cashew Nut Peeling Machine

- This machine is used to remove the thin skin or testa from the cashew nuts.

## 7. Cashew Nut Grading and Sorting Machine

- Once the cashew nuts are processed, they are graded and sorted based on size and quality.

## 8. Cashew Nut Packing Machine

- These machines are used to package the processed cashew nuts in various types of packaging, such as pouches or vacuum-sealed bags.

## 9. Cashew Nut Roasting Machine

- Roasting cashew nuts is a common step in processing to enhance flavor and aroma. Roasting machines are available in various capacities and designs.

## 10. Cashew Nut Peeling and Grading Machine

- Some advanced machines can both peel the cashew nuts and grade them simultaneously.





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## 11. Cashew Nut Oil Extraction Machine

- Cashew shells can also be used to extract cashew nut shell liquid (CNSL), which has various industrial applications.

## 12. Cashew Nut Shell Cutter.

- This machine is used to break the hard cashew nut shells to access the cashew nut shell liquid and cashew shells for other purposes.

These machines are crucial for streamlining the cashew nut processing industry, reducing labor-intensive tasks, and ensuring the quality of the final product. Depending on the scale of operations, cashew processing units may use a combination of these machines to efficiently process raw cashew nuts into finished products.

### Advantages

#### 1. Increased Efficiency

- Processing machines are designed to perform tasks quickly and consistently, leading to increased production efficiency we can handle repetitive tasks with precision, reducing the need for manual labor and minimizing errors.

#### 2. Cost Savings

- Automation through processing machines can lead to significant cost savings over time. Fewer labor requirements, reduced waste, and improved product consistency contribute to lower operational costs.

#### 3. Improved Quality

- Machines can consistently produce high-quality products with minimal variations. They can maintain precise control over parameters like temperature, pressure, and timing, resulting in products that meet strict quality standards.

#### 4. Enhanced Safety

- In many cases, processing machines can perform hazardous or physically demanding tasks, improving workplace safety by reducing the risk of accidents and injuries associated with manual labour.





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## 5. Higher Production Capacity

- Machines can work around the clock without fatigue, allowing for increased production capacity and the ability to meet higher demand levels. This scalability is crucial for growing businesses.

## 6. Reduced Downtime

- Modern processing machines are designed for reliability and minimal downtime. Routine maintenance and occasional repairs are typically scheduled in advance, minimizing disruptions to production.

## 7. Data Collection and Analysis

- Many processing machines are equipped with sensors and data collection capabilities. This allows for real-time monitoring of production parameters, enabling operators to identify and address issues quickly, optimize processes, and make data-driven decisions for continuous improvement.

## Cost of cashew nut processing machines

- The overall cost of production of kernels has been found to be Rs. 4784.11 and 4616.63 per quintal of raw nuts processed in steaming and drum roasting methods, respectively
- In the drum roasting method, the total sale proceeds have been Rs. 4693.62 and the profit per quintal of raw nut has been Rs. 76.99.
- The technology (Boiling, steaming, cutting, drying, and peeling) has been found viable over conventional practices (Traditional manual separation by stone or hammer) on account of a higher recovery of 40 percent and cost reduction of 29.71 percent.

At the end of the technical talk, students came to know the importance of tender cashew nut cultivation and existing processing industries, roasting, cutting, pre-grading, drying, peeling, re-humidification and finally concluded with packaging of cashew kernels.





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## **Annexure – Original copy of**

- **Permission/Request Letter - Principal/ IQAC Chairman**
- **Letter/mail correspondence with resource person -**
  - Request and Acceptance letter/mail
- **Students/faculty attendance details with signature**
- **Registration details**
- **Brochure**
- **if any**





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## Department of Agricultural Engineering

To

Date -01/06/2023

IQAC Chairman

AIET, Mijar

Respected Sir

Sub: Requesting to permit for conducting guest lecture-reg.

We are happy to inform you that Department of Agricultural Engineering conducting guest lecture on "Changing scenario in cashew nut processing and entrepreneurial opportunities for youth in India". The details are mentioned below, kindly request you do the needful.

### Resource person details

Name: Dr. D. Balasubramanian

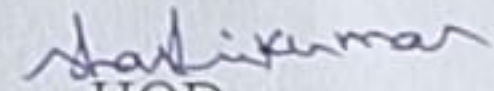
Designation: Principal Scientist (AS & PE)

Organization details: Directorate of Cashew Research, Puttur

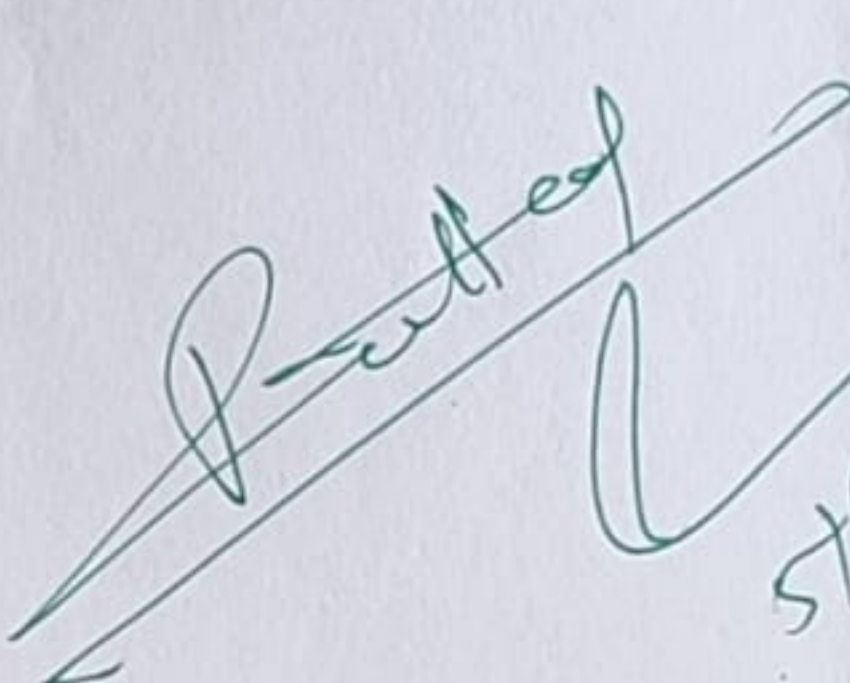
Venue: Civil Seminar Hall

Date/month/year: 10/06/2023

Timings: 3:30 PM to 5:00 PM

  
HOD.  
H.O.D.

Dept. of Agricultural Engineering  
Alva's Institute of Engg. & Technology  
Mijar, Moodubidire - 574225

  
5/6/23



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**Requesting to depute Principal Scientist (Agricultural Structure & Process Engineering) for delivering a Guest Lecture**

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Alvas Institute Of Engineering & Technology Agriculture Dept <aletag08@alet.org.in>

Mon, Jun 5, 2023 at 12:27 PM

To: director.dcr@icar.gov.in  
Cc: balasubramanian.d@icar.gov.in

**Requesting to depute Principal Scientist (Agricultural Structure & Process Engineering) for delivering a Guest Lecture**

Respected sir,

We are going to host a a Guest Lecture on **Changing scenario in cashew nut processing and entrepreneurial opportunities for youth in India** is scheduled on 20/06/2023 at 3:30 PM to 5:00 PM in Alvas Institute of Engineering and Technology, Moodabidre. Hence, I kindly request you to accept our invitation and depute a scientist to enlighten our students by sharing his valuable professional experience.

Please ignore the previous email and find the latest attached pdf file.

**Thanks & Regards**

**Dr. Shashikumar**

**Associate Professor & Head**

**Department of Agricultural Engineering**


**ALVAS INSTITUTE OF ENGINEERING & TECHNOLOGY**

**Mijar, Moodabidre**

**Contact Number: 9113019074/9535912527**

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Alvas Institute Of Engineering & Technology Agriculture Dept <aletag08@alet.org.in>

## Deputation of a Principal Scientist (AS&PE) for delivering a Guest Lecture-reg.

Kanathil Padmini <kanathil1964@gmail.com>  
To: "aletag08@alet.org.in" <aletag08@alet.org.in>  
Cc: bavika13@email.com, reshma.k@icar.gov.in, pme.dcr@icar.gov.in

Fri, Jun 9, 2023 at 2:57 PM


Sir,

Please find enclosed herein a letter on the subject cited above. The Competitive Authority has deputed Dr. D. Balasubramanian, Principal Scientist (AS & PE) of this Directorate as resource person to deliver a guest lecture at your Institution. This is for your kind information and needs.

Regards,

From

PME Cell, ICAR-DCR, Puttur  
for SIC, PME Cell

 Letter to Dr Shashikumar Associate Professor AIET moodbdir regarding deputation of Dr D Balasubramanian.pdf  
817K





(भा कृ अ प्) काजू अनुसंधान निदेशालय  
दर्बे पोस्ट, पुत्तूर - 574 202, दक्षिण कन्नड, कर्नाटक

ICAR- DIRECTORATE OF CASHEW RESEARCH  
Darbe P.O., Puttur - 574 202 Dakshina Kannada, Karnataka



का.अनि  
DCR

F.No.8/2023-PME (Deputation)

Dated: 09-06-2023

To

Dr. Shashikumar  
Associate Professor & Head, Department of Agricultural Engineering  
ALVAS INSTITUTE OF ENGINEERING & TECHNOLOGY  
Mijar, Moodbidri -574 225, D.K, Karnataka

Sub: Deputation of a Principal Scientist (Agricultural Structure & Process Engineering) for delivering a Guest Lecture-reg.

Re: Your Email letter dated 05-06-2023.

Sir,

Please refer to your email dated 05-06-2023 on the subject cited above. The Competent Authority has deputed Dr. D. Balasubramanian, Principal Scientist (AS&PE) of this Directorate as resource person to deliver a Guest Lecture on the topic of "Changing scenario in cashew nut processing and entrepreneurial opportunities for youth in India" scheduled from 20.06.2023 at 3:30 PM to 5:00 PM at Alvas Institute of Engineering and Technology, Moodbidri.

The details of the resource person are given below and he may please be contacted for further needful in the matter.

Sl.No.	Name and Designation	Email Address	Mobile Number
1	Dr. D. Balasubramanian, Principal Scientist (AS &PE)	<a href="mailto:bavika13@email.com">bavika13@email.com</a> <a href="mailto:balasubramanian.d@icar.gov.in">balasubramanian.d@icar.gov.in</a>	9986777048

Yours faithfully,

09/06/23

Scientist-in-charge (PME Cell)  
For Director

Copy to:

1. Dr. D. Balasubramanian, Principal Scientist (AS &PE), ICAR-DCR, Puttur
2. PS to Director
3. PME (Circular/Office Order)

Phone: 08251-231530 (Off.); EPABX: 08251-230902, 236490; Fax: 08251-234350

Email: [dircajures@yahoo.com](mailto:dircajures@yahoo.com), [dircajures@gmail.com](mailto:dircajures@gmail.com), [dircajures@rediffmail.com](mailto:dircajures@rediffmail.com)

Website: <https://cashew.icar.gov.in>



# ALVAS INSTITUTE OF ENGINEERING & TECHNOLOGY



(Approved by AICTE, New Delhi and Affiliated to VTU, Belagavi)



## DEPARTMENT OF AGRICULTURAL ENGINEERING

### *Guest Lecture on*

*“Changing scenario in cashew nut processing and entrepreneurial opportunities for youth in India”*

### *Resource Person*

**Dr. D. BALASUBRAMANIAN**

Principal Scientist (AS & PE)

ICAR-Directorate of Cashew Research

Puttur – 574 202, D.K., Karnataka



*Venue: Civil Seminar Hall.*

*Date: 20/06/2023*

*Time: 3:30 pm to 5pm*





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18	4AL21AG018	KIRAN V	IV	<i>[Signature]</i>
19	4AL21AG019	MANASI ANILRAO PAPPALÉ	IV	<i>[Signature]</i>
20	4AL21AG020	MANSOOR P E	IV	<i>[Signature]</i>
21	4AL21AG021	MONISHA S	IV	<i>[Signature]</i>
22	4AL21AG022	NAGASHREE N	IV	<i>[Signature]</i>
23	4AL21AG023	NAVYA K	IV	<i>[Signature]</i>
24	4AL21AG024	POORNACHANDRA	IV	<i>[Signature]</i>
25	4AL21AG025	PRANEETH	IV	<i>[Signature]</i>
26	4AL21AG026	REGAN AIDON SALDANHA	IV	<i>[Signature]</i>
27	4AL21AG027	SAHANA M GOWDA	IV	<i>[Signature]</i>
28	4AL21AG028	SANTHOSH M	IV	<i>[Signature]</i>
29	4AL21AG029	SAWAN SHETTY	IV	<i>[Signature]</i>
30	4AL21AG030	SHREEHARSHA K S	IV	<i>[Signature]</i>
31	4AL21AG031	SNEHA M	IV	<i>[Signature]</i>
32	4AL21AG032	SUSHA S SHETTY	IV	<i>[Signature]</i>
33	4AL21AG033	SUTHEEJ	IV	<i>[Signature]</i>
34	4AL21AG034	TARUN K	IV	<i>[Signature]</i>
35	4AL21AG035	TEJASKUMAR	IV	<i>[Signature]</i>
36	4AL21AG036	USAMA MEHABOOSAB KOPPIL	IV	<i>[Signature]</i>

Total No. of students participated -

H.O.D.  
Dept. of Agricultural Engineering  
Alva's Institute of Engg. & Technology  
Mijar, Moodbidri - 574225

*[Signature]*  
IQAC Coordinator

*[Signature]*  
IQAC Chairman  
PRINCIPAL

Alva's Institute of Engg. & Technology  
Mijar, Moodbidri - 574 225, D.K





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## Internal Quality Assurance Cell (IQAC)

### Department of Agriculture Engineering

#### Guest Lecture

##### Participated Student's details -

Sl.No	USN	Student Name	Semester	Signature
1	4AL21AG001	A BHOOMIKA REDDY	IV	Bhoomika
2	4AL21AG002	ABHISHEK K S	IV	Abhishek
3	4AL21AG003	AJITH MALI PATIL	IV	Ajith
4	4AL21AG004	AMARNATH I	IV	Amarnath
5	4AL21AG005	ANANYA K	IV	Anya K.
6	4AL21AG006	CHAITRA	IV	Chitra
7	4AL21AG007	CHANDAN B M	IV	Chandana Bm
8	4AL21AG008	CHANDU S	IV	
9	4AL21AG009	CHEETHAN P	IV	Chethan
10	4AL21AG010	DEEPAK M S	IV	Deepak M.S
11	4AL21AG011	DEEPAK R	IV	Deepak R
12	4AL21AG012	H P Y SACHIN	IV	Sachin
13	4AL21AG013	HAHEEL NIYAZ	IV	Hafeel
14	4AL21AG014	JEEVAN KUMAR H N	IV	Jeevan Kumar
15	4AL21AG015	K A PREKSHA	IV	Preksha
16	4AL21AG016	KEERTHAN ALVA	IV	Keerthan Alva
17	4AL21AG017	KEERTHANA M RAM	IV	Keerthana M Ram



## Department of Agriculture Engineering

### Feedback Form - Guest Lecture

Name of the student: H P Y Sachin

Student USN 4AL21AG012

Semester: 4<sup>th</sup>

Date of Guest Lecture: 20/6/2023

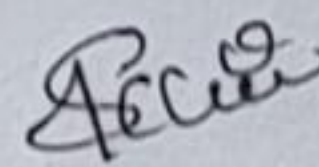
Name of the Resource Person: Dr. D. Balasubramanian

#### Directions:

For each item please indicate your level of satisfaction by ticking the following statement by choosing a score between 1 and 5.

[Excellent - 5, Very Good - 4, Good - 4, Average - 2, Below Average - 1]

Sl. No.	Statement	5	4	3	2	1
1.	The Guest Lecture was technology oriented	✓				
2.	The Guest Lecture was applicable to my future needs	✓				
3.	The Guest Lecture was enhanced your skills		✓			
4.	The program was well planned within the allotted time	✓				
5.	The resource person was a well experienced and knowledgeable in his profession		✓			
6.	The material was presented in an organized manner	✓				
7.	Would you interested in attending such Guest Lecture in future	✓				
8.	Any suggestions for improvement : <u>Guest lecture should be more industries oriented</u>					

  
Signature of the student