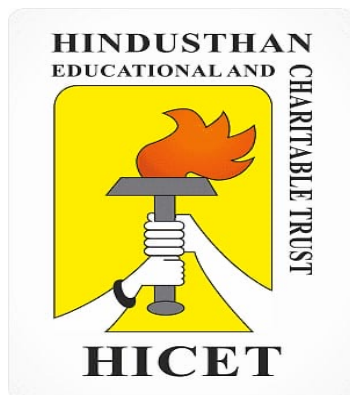


HINDUSTHAN

COLLEGE OF ENGINEERING AND TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)



DEPARTMENT OF FOOD TECHNOLOGY

NEWSLETTER

VOLUME 2

DEC '19 TO JUNE '20

Food Technology



**“THE EVOLUTION OF SCIENCE IS
UNTRACEABLE, IF FOOD IS EXCLUDED FROM
SCIENCE”**

VISION OF THE DEPARTMENT

“To be an excellent department in training students to become professional Food Technologist who is technically capable of working in food operations sector and Discovering licensed food products which could Benefit the eco-friendly society”.

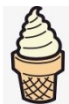
MISSION OF THE DEPARTMENT

- 1. To impart students with a vibrant technical and analytical skills.***
- 2. To provide students with leadership quality and also the knowledge to handle all the problems relating food industry.***
- 3. To develop the research and development activities of students to explore the quality.***

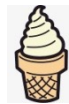
TABLE OF FLAVORS



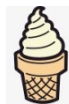
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Students achievements.....9



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MEMORANDUM OF UNDERSTANDING

Memorandum of Understanding was signed with **BOOM ICE CREAMS (BENNY'S FOODS)** followed by a seminar on "Advancement in dairy processing and value added dairy products" by **Dr. T V Ranganathan**, Department of Food Processing Technology, **Karunya Institute of Technology and Science, Coimbatore** on **6th February 2020**.



STAFFS ACHIEVEMENTS

- ❖ **Dr. M. Seenuvasan (Professor & Head)** has delivered a lecture on **Magnetic Nano particles as a versatile carrier for industrial enzymes** at **Annamalai University** during **January 31 and February 1 – 2020**.



- ❖ **Dr. Seenuvasan M (Professor & Head)** has chaired a technical session in the **National Chemistry and Engineering : Towards Future Technology (GCETFT – 2020)** during **January 31 and February 1 – 2020**.



- ❖ **Dr. Seenuvasan M (Professor & Head)** has been the **Chairperson and Lead Speaker** in two days National Conference on **“ROLE OF IoT IN FOOD PROCESSING AND AGRICULTURAL SECTOR”** held on **21st and 22nd February 2020**.
- ❖ **Dr. Seenuvasan M (Professor & Head)** has delivered a lecture on **Unit Operations and Unit Processes in Food and Biotechnology Industries** on **9th May 2020**.
- ❖ **Dr. Seenuvasan M (Professor & Head)** has delivered a lecture on **Recombinant Protein Characterization by Orthogonal Analytical Techniques** on **10th May 2020**.

- ❖ **Dr. Seenuvasan M (Professor & Head)** organised a webinar for the department of Food Technology on the topic of **Basic food safety in Catering and Manufacturing** on **26th May 2020**.
- ❖ **Dr. Seenuvasan M (Professor & Head)** has been the **resource person** and delivered a lecture on **Magnetic Nanocarriers for Enhanced Enzyme Activity** on **Prathyusha Engineering College** on **30th May 2020**.

PRATHYUSHA
ENGINEERING COLLEGE

DEPARTMENT OF
BIOTECHNOLOGY

Presents webinar
on
**Magnetic Nanocarriers for
Enhanced Enzyme Activity**

Date : 30/05/2020
Time: 4 to 5 pm (IST)
Register at :
<https://forms.gle/8paV7ciE-FUmhAYmD8>

Dr. M. Seenuvasan
Professor/Head
Department of Chemical Engineering
Hindusthan college of engineering
and technology Coimbatore

OR
scan using :

E-Certificate would be provided

CONTACT US :
www.nrathvusha.edu.in 9843192763

1110
COUNSELLING CORE

- ❖ **Dr. Seenuvasan M (Professor & Head)** has participated in the Faculty Development Programme on **Advancement in Biotechnology and Chemical Engineering (ABC – 2020)** during **8th June – 19th June,2020**.
- ❖ **Dr. Seenuvasan M (Professor & Head)** has organized a webinar on **Fundamentals Concepts and Applications of Heat Exchanging Equipment's** on **21st June 2020**.

KALASALINGAM
ACADEMY OF RESEARCH & EDUCATION
(DEEMED TO BE UNIVERSITY)
 Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade
 Anand Nagar, Krishnankoil - 626126, Srivilliputtur (Via), Virudhunagar (DT), Tamil Nadu | info@katasalingam.ac.in | www.katasalingam.ac.in

School of Bio and Chemical Engineering
Department of Chemical Engineering

Organizes Webinar on

Fundamental Concepts and Applications of Heat Exchanging Equipments

CONVENOR
Dr.S.Saravanan
HoD/Chemical

COORDINATOR
Ms.R.Kanimozhi

JUNE 21, 2020
11.30 AM - 12.30 PM

Dr.M.Seenuvasan
Professor and Head
Chemical Engineering
Hindusthan College of
Engineering and
Technology, Coimbatore.

Join using Google Meet
<https://meet.google.com/kne-qdkd-ewy>

Certificate will be awarded

- ❖ **Dr. Seenuvasan M (Professor & Head)** has published a journal on **Review on surface modification of nanocarriers to overcome diffusion limitations: An enzyme immobilization aspect** .

Contents lists available at ScienceDirect

Biochemical Engineering Journal

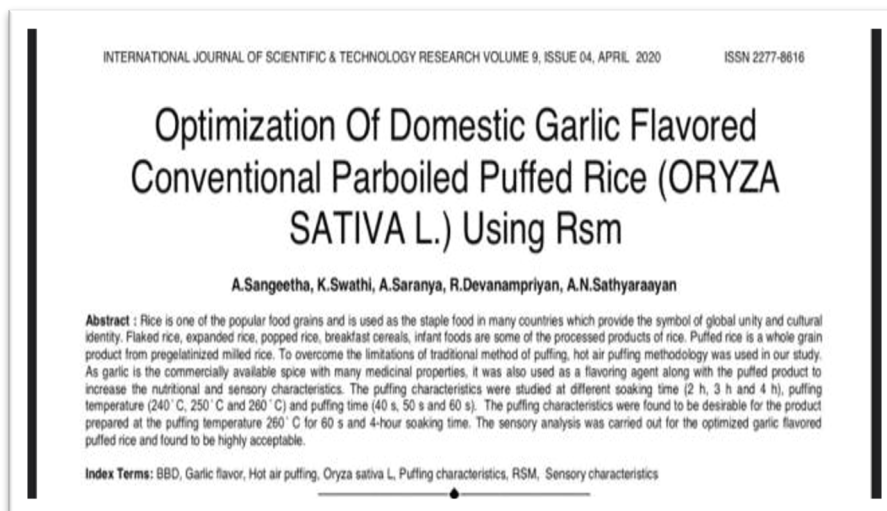
journal homepage: www.elsevier.com/locate/bej

Review on surface modification of nanocarriers to overcome diffusion limitations: An enzyme immobilization aspect

Carlin geor malar^a, Muthulingam Seenuvasan^{b,c}, Kannaiyan Sathish Kumar^{c,e}, Anil Kumar^d, R Parthiban^e

^a Department of Biotechnology, Rajalakshmi Engineering College, Thandam, India
^b Department of Chemical Engineering, Hindusthan College of Engineering and Technology, Coimbatore, India
^c Department of Chemical Engineering, SSN College of Engineering, Kalavakkam, Tamilnadu, India
^d Analytical and Environmental Science Division, CSIR-Central Salt & Marine Chemicals Research Institute, Gujarat, India

- ❖ **Mrs. Swathi K (Assistant Professor)** has presented a paper on **Optimization of Domestic Garlic Flavoured Conventional Parboiled Puffed Rice (ORIZA SATIVA) using RSM** during **January 31st and February 1, 2020**.



- ❖ **Mrs. Swathi K (Assistant Professor)** has presented a paper on **ROLE OF LoT IN FOOD PROCESSING AND AGRICULTURAL SECTOR** on **21st and 22nd February 2020**.
- ❖ **Mrs. Swathi K (Assistant Professor)** has organized a webinar for the department of Food Technology on the topic **Role of Food Technologist in Food Industry** on **24th May, 2020**.
- ❖ **Mrs. Swathi K (Assistant Professor)** acted as a trainer and delivered a lecture in **Food Safety System Certification Training** during **27th – 30th May, 2020**.
- ❖ **Mrs. Swathi K (Assistant Professor)** has organized a webinar for the department of Food Technology on the topic **Basic Food Safety** on **26th May, 2020**.
- ❖ **Mr. Dillwyn S (Assistant Professor)** has published a paper on **Evaluation Of Antibacterial And Antioxidant Properties Of Different Varieties Of Grape Seeds (Vitis Vinifera L.)**.

Evaluation Of Antibacterial And Antioxidant Properties Of Different Varieties Of Grape Seeds(Vitis Vinifera L.)

A.Kulastic Jassy, S.Dillwyn, M.M. Pragalyaashree, D. Tiroutchelvame

Abstract— Grape seeds are the by-products from fruit juice and wine industries and are generally disposed as waste. These seeds have abundance of phytochemicals and can be utilized as a potential raw material from which dietary supplements can be produced. The present study investigated the influence of solvent (ethanol and water at different concentration) on different varieties of grape seeds (Sauvignon blanc, Medika, Symphony, Shiraz) in extracting the antioxidants and comparing the antioxidant activities of the varieties. The grape seeds were made into powder form and the fatty material was extracted using petroleum ether at 80°C for 6 h in a soxhlet extractor. The defatted powder was extracted with solvent extraction method using water and ethanol in various concentrations (50% ,60% and 70%) at a temperature of 80°C on different varieties of grape seeds. Antibacterial activity was tested for these extracts by disc diffusion method against *Escherichia coli* and *Staphylococcus aureus*. Among the various varieties, ethanolic extract of Symphony showed better zone of inhibition in *Escherichia coli* whereas ethanolic extract of Shiraz and Sauvignon blanc showed better zone of inhibition in *Staphylococcus aureus*. Antioxidant activity was determined using DPPH assay and it was found that the results were highly dependent on the variety of grape seeds. All the extracts proved remarkable antioxidant activity ranging from 53% to 76.5%. It was concluded that the Shiraz variety extracted with ethanol (80% concentration) showed higher antioxidant value compared to the other varieties.

Index Terms— phytochemicals, soxhlet extraction, anti-bacterial activity, zone of inhibition, DPPH assay

- ❖ **Mr. Dillwyn S (Assistant Professor)** has undergone a virtual workshop on **How to setup your own Food Processing Industry** on **23rd May 2020**.
- ❖ **Mr. Dillwyn S (Assistant Professor)** has participated in a Faculty Development Programme, **Effective Project Proposal Writing** during **8th – 9th May 2020**.
- ❖ **Mr. Dillwyn S (Assistant Professor)** has completed the **Food Allergy Online Training** on **4th May 2020**.
- ❖ **Mr. Dillwyn S (Assistant Professor)** has participated in **Application of Product Life Cycle Management on CAD / CAE / CAM** on **18th June 2020**.
- ❖ **Mr. Dillwyn S (Assistant Professor)** has completed the online course, **The Fundamentals of Digital Marketing** on **22nd June 2020**.

STUDENTS ACHIEVEMENTS

- ❖ **Ms. Gomathi S, Ms. Magitta Sherine S, Ms. Ronitalini C, Ms. Varnna Priya M and Ms. Dharshana R** have undergone a workshop on **Sugar Crafts of KALAM 2020** from **6th – 8th February, 2020**.

- ❖ **Ms. Srimathi R, Ms. Dhejaswini M and Ms. Sarekha P** of II B. Tech Food Technology had presented a paper on **Spray-Freeze-Drying Technique and Technology Developments in Powdery Products** during **30th Jan and 1st February, 2020**.



- ❖ **Ms. Sarekha P and Ms. Srimathi R** of II B. Tech Food Technology had presented a paper on **ROLE OF IoT IN FOOD PROCESSING AND AGRICULTURAL SECTOR** during **21st and 22nd February 2020**.
- ❖ **Ms. Aparna P, Ms. Fathimathul Zahara K P, Ms. Hitha Baburaj, Ms. Sivani V Gopal, Mr. Adwaith Satheesh and Mr. Siddharth L** of II B. Tech Food Technology have participated in **Smart India Hackathon** conducted in **Hindusthan College of Engineering and Technology** on **21st January 2020**.
- ❖ **Mr. Sidane Toms and Mr. Muhammed P** of II B. Tech Food Technology have participated in **Smart India Hackathon** conducted in **Hindusthan College of Engineering and Technology** on **21st January 2020**.

- ❖ **Ms. Dharshana R and Ms. Varnna Priya M** of II B. Tech Food Technology have participated in **Smart India Hackathon** conducted in **Hindusthan College of Engineering and Technology** on **21st January 2020**.



ACHIEVEMENTS DURING PANDEMIC

All the students of II B. Tech Food Technology have actively participated in the following webinars :

- **Role of Food Technologist in Food Industry** on **24th May, 2020**.
- **Basic Food Safety** on **26th May, 2020**.

MS. APARNA P

- Has completed the **Traceability e-learning course** on **6th May, 2020**.
- Has participated in the webinar on **Magnetic Nanocarriers for Enhanced Enzyme Activity** on **30th May 2020**.
- Has completed the **Food Allergy Online Training** on **18th June 2020**.
- Has completed the **Food labelling e-learning course** on **18th June 2020**.

- Has completed the **Vacuum packing and modified atmosphere packing of food** on **18th June 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MS. DHARSHANA R

- Has participated in an online webinar on **Digital Culture in Education** on **10th June 2020**.

MS. GOMATHI S

- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.
- Has participated in an **online quiz** on **7th June 2020**.
- Has participated in **National level online Food Safety Quiz competition** on **7th and 8th June , 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MS. HRIDHIKA T B

- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MS. LINCY MARY C

- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MS. MAGITTA SHERINE S

- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.
- Has participated in an **online quiz** on **7th June 2020**.
- Has participated in **National level online Food Safety Quiz competition** on **7th and 8th June , 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

Mr. MOHAMED AFRITH M

- Has participated in a webinar on **Opportunities in Food Industries and Importance of Food Safety** on **29th May 2020**.
- Has participated in the webinar on **Magnetic Nanocarriers for Enhanced Enzyme Activity** on **30th May 2020**.
- Has participated in a webinar on **Food Safety related jobs and opportunities** on **7th June 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MS. MUHAMMED SHAMEER K P

- Has completed the **Traceability e-learning course** on **12th June 2020**.
- Has completed the **Food labelling e-learning course** on **12th June 2020**.

MS. RONITALINI C

- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.

- Has participated in a webinar on **Innovative freezing technology** on **19th May 2020**.
- Has participated in a webinar on **Extrusion processing - challenges and opportunities** on **22nd May 2020**.
- Has participated in an **online quiz** on **7th June 2020**.
- Has participated in **National level online Food Safety Quiz competition** on **7th and 8th June , 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MR. SHAKEEL AHAMED

- Has completed the **Traceability e-learning course** on **5th May,2020**.
- Has completed the **Food labelling e-learning course** on **18th June 2020**.
- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.
- Has participated in an online orientation on **Safety protocols in the workplace : Infection, Prevention and control** on **15th June 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.
- Has participated in a webinar on **Don't Work Out** on **19th June 2020**.
- Has participated in a **leadership talk** on **20th June 2020**.

MS. SRIMATHI R

- Has completed the course **Agriculture of Tomorrow** on **23rd April 2020**.

- Has completed the **Food labelling e-learning course** on **4th May 2020**.
- Has completed the **Food Allergy Online Training** on **4th May 2020**.
- Has completed the **Vacuum packing and modified atmosphere packing of food** on **5th May 2020**.
- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.
- Has participated in a quiz on **World Food Safety Day - 7th June 2020**.
- Has secured **first** in an **online event quiz** on **14th June 2020**.

MS. SUBHIKSHA R S

- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.
- Has completed the **Traceability e-learning course** on **12th June 2020**.
- Has completed the **Food labelling e-learning course** on **12th June 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MR. JOSIAH SAMUEL JOHNSON

- Has completed the **Traceability e-learning course** on **5th May,2020**.
- Has completed the **Food labelling e-learning course** on **18th June 2020**.
- Has participated in an online orientation on **Safety protocols in the workplace : Infection, Prevention and control** on **15th June 2020**.

- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.
- Has participated in a webinar on **Don't Work Out** on **19th June 2020**.
- Has participated in a **leadership talk** on **20th June 2020**.

MR. SUJEETH KUMAR S

- Has participated in an **online event quiz** on **14th June 2020**.
- Has participated in a **Yoga Awareness Quiz** on **21st June 2020**.
- Has participated in a national webinar on **Challenges and Strategies in Commerce and Management , Post COVID Era** on **23rd and 24th June 2020**.
- Has participated in a **Weekly Quiz Competition**.
- Has participated in **COVID -19 Awareness Quiz**.

MR. SUJITH S PAPPACHAN

- Has participated in a webinar on **Food Processing : current status, need and future** on **18th May 2020**.
- Has completed the **Traceability e-learning course** on **12th June 2020**.
- Has completed the **Food labelling e-learning course** on **12th June 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.

MS. VARNNA PRIYA M

- Has completed the **Traceability e-learning course** on **5th May 2020**.
- Has completed the **Food labelling e-learning course** on **6th May 2020**.
- Has completed an online training course on **Vacuum packing and Modified atmosphere packing of food** on **6th May 2020**.
- Has participated in an online webinar on **Food Business Marketing** on **18th June 2020**.
- Has participated in a webinar on **Don't Work Out** on **19th June 2020**.

SPORTS ACHIEVEMENTS

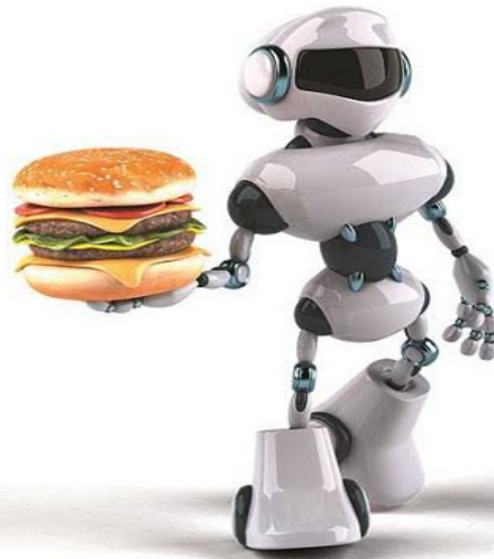
- ❖ **S.M. Lowell Sahabtin Raj** of **II B. Tech Food Technology** has won **2nd price** in **CENTIES Football tournament** at **Bannariamman college of engineering technology** on **17,18,19 of February 2020**.
- ❖ **R. Srimathi** of **II B. Tech Food Technology** has won **1st price (District level)** in **Boxing** from **sports Development Authority of TamilNadu, Dharmapuri unit** on **14.02.2020-16.02.2020**.



ARTICLE CORNER

FOOD TECHNOLOGY RESHAPING THE INDUSTRY

“Just like technology is helping other key businesses across the globe, food industry too has a great amount of scope to implement technological advancements and make progressions with time”.



TODAY, technology has become a reality and an eminent part of various facets of our life. It is no more just a thing of science fictions. But what is more surprising is the fact that technology has entered the food industry as well. No matter how startling it may sound, but food-tech is the reality of today. Technology is playing a key role in the way we produce and procure our food. Below are a few technologies which are reshaping the food industry in a myriad of ways.

AI-BASED SOLUTIONS: Needless to mention, AI or artificial intelligence is not just the buzzword but a real helping hand to many sectors including the food industry. Not only has it helped the industry with the production process but also with some of the best predictions for the company size and how it should proceed.

The most important contribution has been in the form of shaping and understanding your customers' mind. To a great extent, AI has helped in customizing the menu based on their repetitive choices and other data analytics.

ROBOTICS AND MACHINES: The usage of machines and robotics in the food industry has made the industry more affordable and qualitative. Machines have helped in bringing down the cost of keeping the food fresh and increase in the productivity. Robotic machines have helped in maintaining safety net for the usual dangerous jobs in the food industry.

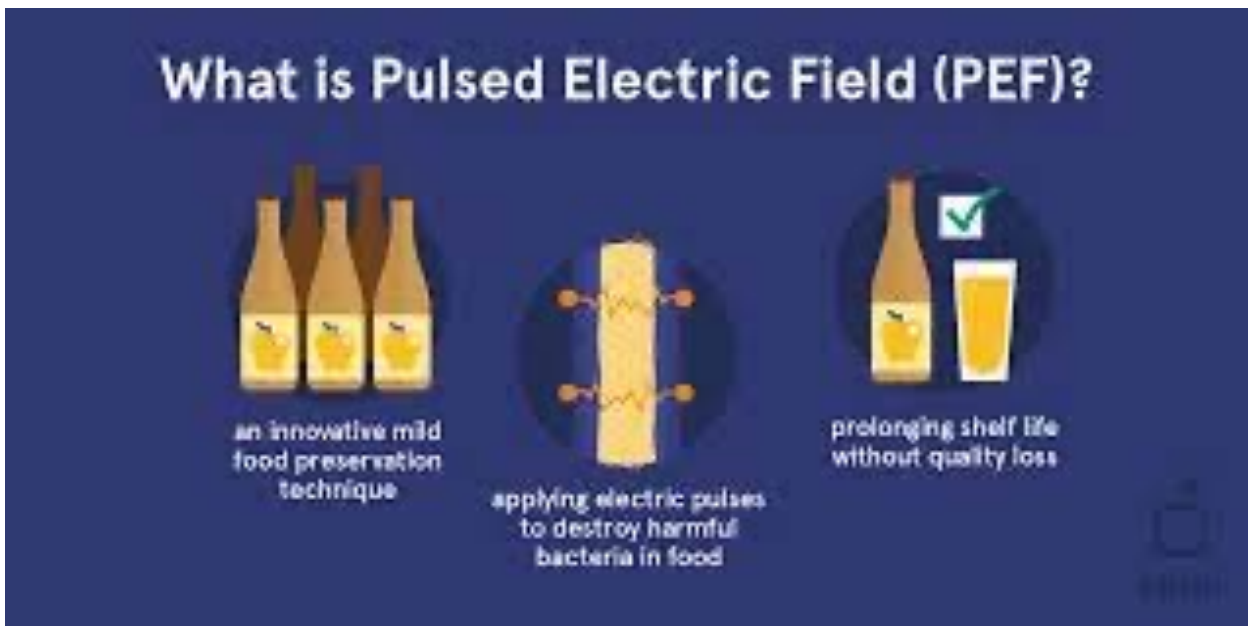
DRONES: This piece of technology holds special importance in reference to the precision in the agriculture. The use of GPS tracking systems and satellite imagery is helping in monitoring the crop yields, soil levels, and weather patterns so that the efficiency on the farms can be increased. Drones are helping in gauging the health of the crops to ensure diseased and damaged crops could be eliminated.

3D PRINTING: Over the last few years, 3D printing has developed as a key technology and to our surprise, it has not escaped the food industry. 3D printing is being used to create food prints such as pizza and other soft foods, paving the way for newer innovations.

SENSORS: Sensors have become a crucial part of several industries. It is helping transform the physical world into the world of data helping managers with valuable insights. It is making the work of managers become very smooth and efficient as keeping a tab of inventory and food ingredients is becoming easier. With the help of smart devices and sensors, the access to the real-time data of the production assets has reduced the potential of the downtimes.

As we mentioned above, technology is becoming an integral part of our life and food technology will also extract a lot out of it. Just like technology is helping other key businesses across the globe, food industry too has a great amount of scope to implement technological advancements and make progressions with time.

-X-X-X-



EDITORIAL BOARD

STUDENT EDITORS

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&
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(Assistant Professor)**

CONVENOR

**DR. SEENUVASAN M
(Professor & Head)**



*YES, FOOD AND TECHNOLOGY CAN BE
ADDICTIVE TOO.*

HARKEN HEADERS

**HINDUSTHAN COLLEGE OF ENGINEERING AND
TECHNOLOGY**

(AN AUTONOMOUS INSTITUTION)

DEPARTMENT OF FOOD TECHNOLOGY

