HINDUSTHAN

COLLEGE OF ENGINEERING AND TECHNOLOGY

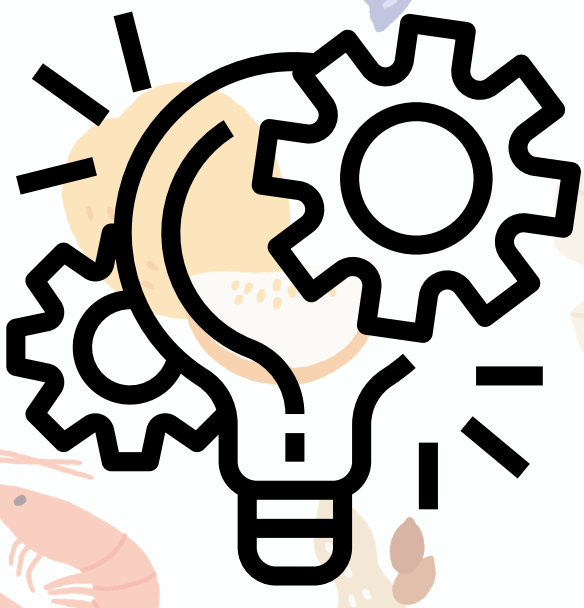
(AN AUTONOMOUS INSTITUTION)

DEPARTMENT OF FOOD TECHNOLOGY

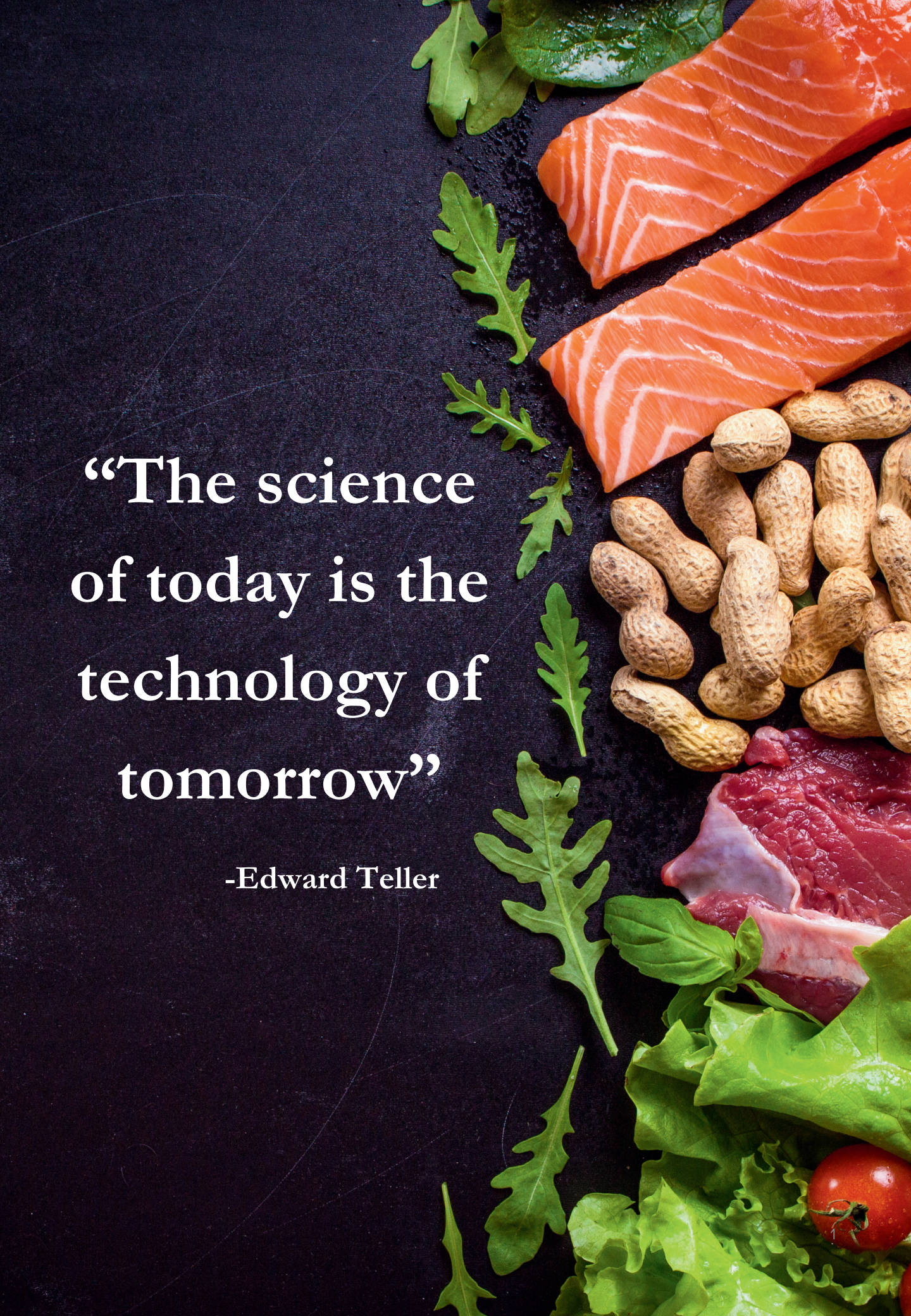
NEWSLETTER

VOLUME 2

JAN'20 TO JUNE '20



"THE EVOLUTION OF SCIENCE IS UNTRACEABLE, IF FOOD IS EXCLUDED FROM SCIENCE"


“The science of today is the technology of tomorrow”
-Edward Teller

VISION OF THE DEPARTMENT

"To be recognized for excellence in producing competent food technologists with comprehensive technical knowledge, innovative skill set and high ethical values.".

MISSION OF THE DEPARTMENT

DM1: *To impart sound technical and analytical knowledge to the students of Food Technology.*

DM2: *To inculcate leadership qualities and team spirit in addressing issues relating to the food industry and providing creative sustainable solutions.*

DM3: *To instill a sense of social responsibility in dealing with food processes, products and equipment.*

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The graduates of Food Technology shall be able to

PEO1: *Apply the principles of Food Science and Engineering in academics and research to succeed in professional career.*

PEO2: *Analyze and develop sustainable food processes and products with technical and economic feasibility to address global challenges through professional development.*

PEO3: *Exhibit professional and managerial capabilities with ethical conduct through continuous learning.*

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The graduates of Food Technology shall

PSO1: *Identify the solutions for the real-world industrial challenges and ensure food safety and quality by adopting multidisciplinary approach and novel food processing techniques.*

PSO2: *Apply experiential and critical thinking skills in creating new food products to become a successful entrepreneur.*

PROGRAMME OUTCOMES (POs)

Engineering Graduates will be able to:

1. ***Engineering knowledge:*** *Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*
2. ***Problem analysis:*** *Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*
3. ***Design/development of solutions:*** *Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*
4. ***Conduct investigations of complex problems:*** *Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.*
5. ***Modern tool usage:*** *Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.*
6. ***The engineer and society:*** *Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*

7.***Environment and sustainability:*** *Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*

8.***Ethics:*** *Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*

9.***Individual and team work:*** *Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings*

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10.***Communication:*** *Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*

11.***Project management and finance:*** *Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*

12.***Life-long learning****: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.*

TABLE OF FLAVORS

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. Seenuvasan M** has delivered a lecture on **Unit Operations and Unit Processes in Food and Biotechnology Industries** on **9th May 2020** for our Food Technology students.

- **Dr. Seenuvasan M** has delivered a lecture on **Recombinant Protein Characterization by Orthogonal Analytical Techniques** on **10th May 2020** for our Food Technology students.

- **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.**

INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 04, APRIL 202

Optimization Of Domestic Garlic F
Conventional Parboiled Puffed Rice
SATIVA L.) Using Rsm

A.Sangeetha, K.Swathi, A.Saranya, R.Devanampriyan, A.N.Sathyaraa

Abstract : Rice is one of the popular food grains and is used as the staple food in many countries which provide the identity. Flaked rice, expanded rice, popped rice, breakfast cereals, infant foods are some of the processed products product from pregelatinized milled rice. To overcome the limitations of traditional method of puffing, hot air puffing m As garlic is the commercially available spice with many medicinal properties, it was also used as a flavoring ager increase the nutritional and sensory characteristics. The puffing characteristics were studied at different soaking temperature (240˚C, 250˚C and 260˚C) and puffing time (40 s, 50 s and 60 s). The puffing characteristics were fo prepared at the puffing temperature 260˚C for 60 s and 4-hour soaking time. The sensory analysis was carried o puffed rice and found to be highly acceptable.

Index Terms: BBD, Garlic flavor, Hot air puffing, Oryza sativa L, Puffing characteristics, RSM, Sensory characteristic

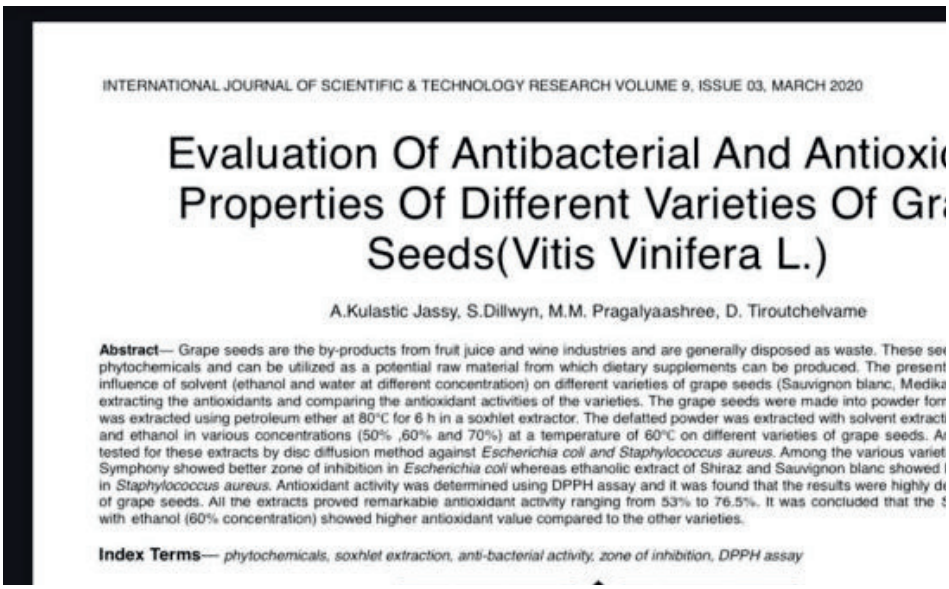
- **Mrs. Swathi K (Assistant Professor)** has presented a paper on ROLE OF LoT IN FOOD PROCESSING AND AGRICULTURAL SECTOR on 21st and 22nd February 2020.

- **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.).**



INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 03, MARCH 2020

Evaluation Of Antibacterial And Antioxi
Properties Of Different Varieties Of Gr
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 se
phytochemicals and can be utilized as a potential raw material from which dietary supplements can be produced. The present
influence of solvent (ethanol and water at different concentration) on different varieties of grape seeds (Sauvignon blanc, Medik
extracting the antioxidants and comparing the antioxidant activities of the varieties. The grape seeds were made into powder for
was extracted using petroleum ether at 80°C for 6 h in a soxhlet extractor. The defatted powder was extracted with solvent extract
and ethanol in various concentrations (50% ,60% and 70%) at a temperature of 60°C on different varieties of grape seeds. A
tested for these extracts by disc diffusion method against *Escherichia coli and Staphylococcus aureus*. Among the various variet
Symphony showed better zone of inhibition in *Escherichia coli* whereas ethanolic extract of Shiraz and Sauvignon blanc showed
in *Staphylococcus aureus*. Antioxidant activity was determined using DPPH assay and it was found that the results were highly d
of grape seeds. All the extracts proved remarkable antioxidant activity ranging from 53% to 76.5%. It was concluded that the
with ethanol (60% 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 LoT 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 C**hallenges 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 a 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

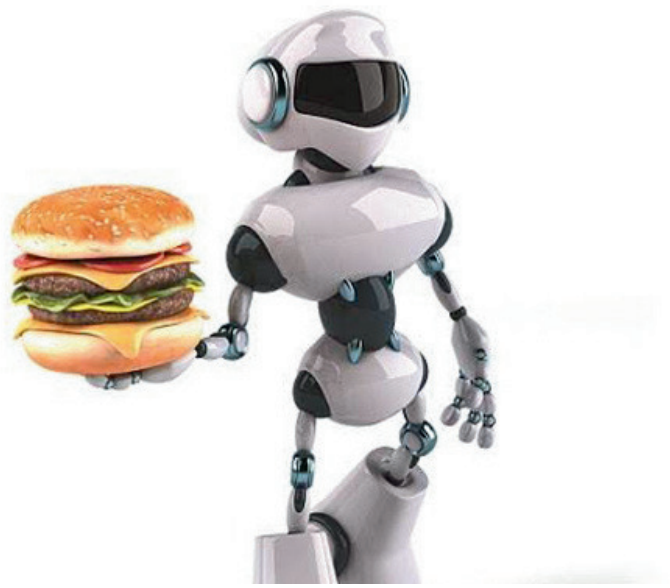
- **S.M. Lowell Sahabtin Raj** of II B. Tech Food Technology has won **2nd price** in **CENTIES Football tournament at Bannariamman college of engineering technology** on **17,18,19 of February 2020.**

- **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.

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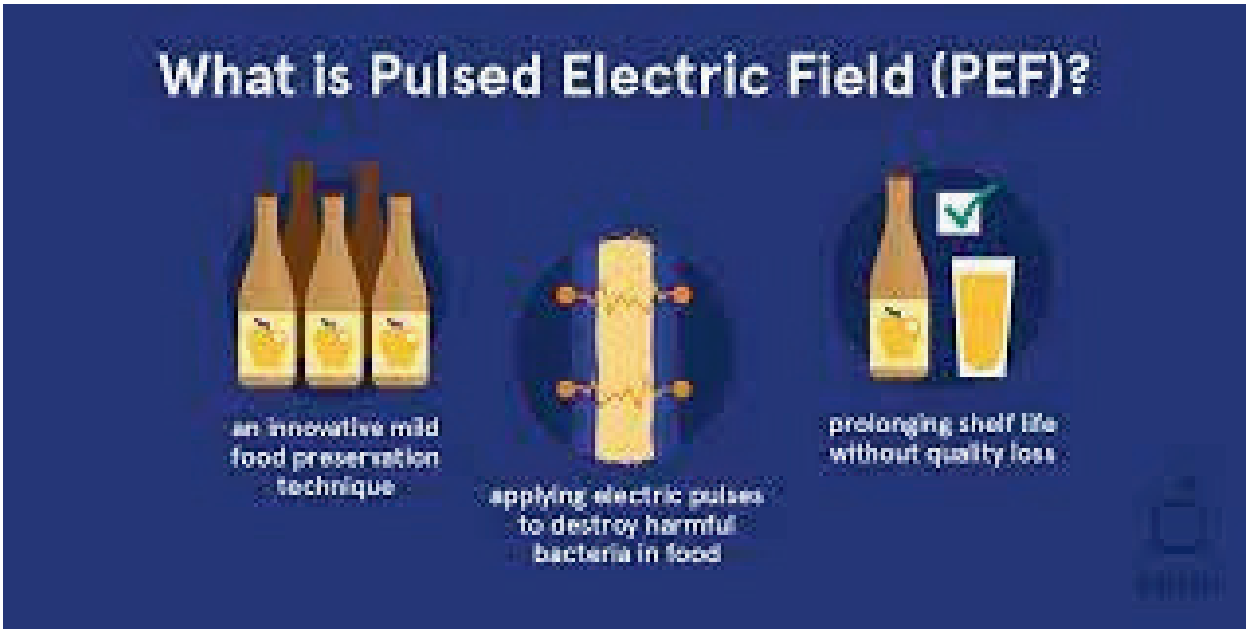

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(AN AUTONOMOUS INSTITUTION)

YES, FOOD AND TECHNOLOGY CAN BE ADDICTIVE TOO.

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DEPARTMENT OF FOOD TECHNOLOGY