

30<sup>TH</sup> EDITION

AUGUST 2022



# Abhyudaya

Reliving the Legacy



www.abhyudaya.com

## NANOTECHNOLOGY IN FOOD INDUSTRY:

*A gaze at the nano size would really amaze!*

# This Issue

## Words from the Editor's desk...

In search of melioristic spark,  
Under the snippets of dark,  
Finding a way amidst,  
In the woods of aghast,  
Togetherness is an avenue of bliss,  
Leading us in gallivanting journey of lives.  
Kushi Navin



As we, "CORNquerors" canonize the moments of togetherness with "PAVrangers" and "PIEthons", we express our deepest gratitude to everyone who brought three generations of CFTRI family together in the event of "Get Together". We celebrate togetherness!!

To all the distinguished readers,

On behalf of the team Abhyuday, I humbly present to you the 30th edition of the magazine put together by the 57th batch of M.Sc Food Technology, the "CORNquerors".

There's a lot of work going on at the minute scale. Binge into the nano world and discover the new horizons of food technology with nano technology in the **Cover Story**.

Scroll down to **Industry Buzz** to hear the buzz of new innovative bees in the food industry.

Plan B often takes over plan A!! So have no space for any disappointment says our esteemed alumni Mr. Jamadagni Khandige (1988-1990) while narrating his glorious experiences in **Experience Talk** !

Relish and cherish your memories with **Kampus Khabar**, where we present to you the enthralling events of the campus.

"I shall look at the clouds till I become the master of clouds". Check up on the fascinating saga of success of our indigenous company "iD Fresh Foods" and their distinguished products in the **Food incorporated** section.

Electric but not shocking! Electric can be an essential ingredient of most of your recipes now. Know what it is with our **What the Food** section.

Walk down the memory lane with Mr. Bhupender Singh (batch 2015-17) in **Alumn Column** as going back through time travel is the best journey ever.

Big businesses start small so, head onto **Career Corner** and give a thought on how good startups can start!

Let's congratulate our dear "PAVrangers" for stepping into a new milestone in their career in the **Placement** section.

Puzzled? Every problem has its own solution. Now find solutions for the crossword puzzle in the **Games** section.

Admire the splendiddness of CFTRI campus witnessing its beauty through the **Photography** section.

Happy reading!

Regards  
KUSHI NAVIN

2	About Abhyuday
3	Cover Story
6	Experience talk
9	Industry Buzz
12	Kampus Khabar
15	Food In'corporated
17	What The Food
18	Career Corner
20	Alumn Column
22	Placements
25	Games
27	Photography
28	Editorial Team

# About Abhyuday.....

Emerging as a pioneer in food research in 1950 and continuing to provide an impetus to the food and allied sectors, CFTRI is the backbone of food-based scientific as well as industrial developments in India. The genesis of Abhyuday owes itself to the heritage that was created by the great minds that have been a part of this institution ever since the beginning and emerged from here as successful individuals spreading the glory of this place far and wide.

Abhyuday is a Sanskrit word which means beginning or awakening...

Awakening for re-inventing the vigour and strength by breaking away from the shackles of mediocrity and sombreness...Awakening for being the change and leading the way...

The e-newsletter, it is expected, would try and achieve its goal of promoting dissemination of the right and benign knowledge and act like an umbilical cord that would keep us connected to our mother institution.

Industry Buzz will include the past months developments in food industry viz. M&A, new product launches, new market entrants, market reviews, inventions and innovations etc. The Cover-Story will track one most important development of the month in the food industry with a detailed analysis from all the quarters. What The Food! will shed light on the interesting and lesser known facts about food. Kampus Khabar will attempt to track the campus news, developments, conference and seminars, tech-talks by our alumni. Career Corner would be the space where articles related to interpersonal and communication skill development, interview etiquette, CV writing skills etc. would be stressed.

The most exclusive of all the sections would be the Alumn Column which will feature technical articles, literary and artistic works, tweets and blogposts, creative and memorable contributions by our distinguished alumni. Also, we shall run a feature on one prominent CFTRIian in any field in each edition.

Besides, updates regarding upcoming seminars and events, congratulatory messages on birthdays and anniversaries, placements and promotions of alumni will also be featured. Advertisements from industries and entrepreneurs will also be featured for free. With a view to ensure the involvement of the readers and make the experience worthwhile, some games like crosswords, food quiz, jigsaw puzzles, riddles etc. would also be incorporated.

# NANOTECHNOLOGY IN FOOD INDUSTRY

*A gaze at the nano size would really amaze!*

"Little things matter the most", particles at the nanoscale are creating wonders in all stages from farm to fork as far as the food sector is concerned. As food technologists, we witness that applications of nanotechnology have emerged with an increasing need for nanoparticle uses in various fields of food science.

Nanotechnology has proven to be a magical spell that revolutionizes every field, it is applied into. Recent innovations in nanotechnology have transformed several scientific and industrial areas including the food industry. I've always seen nanotechnology as a most fascinating field of interest. As we always quote, "Little things matter the most", particles at the nanoscale are creating wonders in all stages from farm to fork as far as the food sector is concerned. As food technologists, we witness that applications of nanotechnology have emerged with an increasing need for nanoparticle uses in various fields of food science and food microbiology, including food processing, food packaging, functional food development, food safety, detection of foodborne pathogens, and shelf-life extension of food products.

One may find the term 'nanofood' confusing when it is considered in terms of size and properties of food but it describes the food that has been cultivated, produced, processed, or packaged using nanotechnology techniques or tools, or to which manufactured nanomaterials have been added. Nanofood has, in fact been part of food processing for centuries, since many food structures naturally exist at the nanoscale. The purpose of nanofood is to improve food safety, enhance nutrition and flavor, and cut costs.

## **Binge into the nanoworld**

"There's plenty of room at the bottom," saying this Richard Feynman described a process by which the ability to manipulate individual atoms and molecules might be developed. Nanotechnology, focuses on special properties of materials emerging from nanometer ( $10^{-9}$ ) size. In biological systems, the first level of organization occurs at the nanoscale where all the fundamental properties and functions are systematically defined. The finer and tinier a matter gets, the original surface area of the matter gets amplified nano times over, emitting its packed force in equal folds. Here lies the nano's mystery heretofore unknown but powerfully impacting upon us recently.

## Nano nutraceuticals and nano functional foods

Emerging nanotechnology has shown great potential for application in nutraceuticals and functional foods to improve human health. Functional food is similar to conventional food, while a nutraceutical is isolated from food and sold in dosage form, in both cases the active components occur naturally in the food. Effective techniques at the nanoscale helping in the development of nano functional foods is nanoencapsulation. Nanoencapsulation is defined as a technology to pack substances in miniature making use of techniques such as nanocomposite, nano emulsification, and nano structuration and provides final product functionality that includes controlled release of the core. The protection of bioactive compounds, such as vitamins, antioxidants, proteins, and lipids as well as carbohydrates may be achieved using this technique for the production of functional foods with enhanced functionality and stability.

## Food packaging

Consumers demand food to be fresh for a long time, and the packaging materials should be easy for handling, safe, and healthy for humans and also to the environment. A major problem in food science is determining and developing an effective packaging material. Using nano particle technology, Bayer has developed an even more airtight plastic packaging that will keep food fresher and longer than their previous plastics and the plastics of their competitors.

Researchers at Bayer Polymers refer to this new plastic as a "hybrid system" as it is enriched with an enormous number of silicate nanoparticles. When this plastic is processed into a thin film and wrapped over food, it does a better job than previous plastics of preventing food from going bad on the shelf and it helps prevent odors from one food mixing with another.

## Barrier Protection

The food products are preserved by maintaining it in an inert and low oxygen atmosphere for inhibiting microbial growth and spoilage, thus the material used should be impermeable to gases. Nanocomposites are incorporated in the polymer matrix of the substances due to their large surface area which favors the filler-matrix interactions and its performance. Also the nano reinforcement's acts as small, barriers for gases by complicating the path of the material, both are known as polymer nanocomposites. Various researches have been developing in nano composites from cells and carbon nanotubes since packaging plays a backbone for commercialization of products.

### **Nutritional supplements**

Nano-sized powders are used for increasing absorption of nutrients, nanocochleates are considered as an effective tool for nutrient delivery to cells without affecting the color and taste of food products. Vitamin sprays that disperse nanodroplets are used for better absorption of nutrients. Supplementary foods aspect mainly involves encapsulation techniques where the needed probiotics and other products are targeted into the human system with the help of iron and zinc nanostructured capsules. Thus, nanotechnology in food supplements is very effective than common supplements because they react more effectively with human cells due to their size.

### **Nano barcodes to detect foodborne pathogens**

Nano barcodes are similar to the traditional barcodes that are found on many packaged food products today. However, the name barcodes, contacting metal nanoparticles could be used to detect pathogens. The nanoparticles have specific, recognizable chemical fingerprints that can be read by a machine, an ultraviolet lamp, or an optical microscope. Using these kinds of bar codes, a supermarket checkout computer can identify thousands of different items by scanning the tiny barcode printed on the package.

### **The way forward:**

Nanotechnology has the potential to improve foods, making them tastier, healthier, and more nutritious, to generate new food products, new food packaging, and storage. However, many of the applications are currently at an elementary stage, and most are aimed at high-value products, at least in the short term. Successful applications of nanotechnology to foods are limited. Public show low awareness to food nanotechnology while their attitude is tunable depending on the way nanotechnology is used and advocated. Driven by the food industry that is a trillion-dollar business, many products involving novel nanotechnology have been marketed all over the world, particularly in the field of food contact materials.

### **References**

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# Experience Talk



## Jamadagni Khandige

Factory Manager  
Wisbech Factory  
Nestle Purina UK Manufacturing Operations Limited

### 1) How did CFTRI help you in building your professional career?

I stay indebted to all my “gurus” at CFTRI as well as during my entire education. Our batch of 1988-90 witnessed a good boom in demand for CFTRI food techs as compared to the previous years due to the economic growth in the food industry in India at the time. A number of us from our batch including myself were offered jobs almost immediately by both Indian as well as multinational companies. Despite of having two other options for jobs/ placements, I was also lucky to have been offered the position of Trainee Food Technologist, at the CAMPCO Chocolate factory, Puttur by Late Shri Varanashi Subraya Bhat, Founder President of CAMPCO. Although I had two other offers from other parts of India, I chose to join CAMPCO in Sept 1990 due to my passion for cocoa and chocolate processing and also that it was a job close to my home. My elective in M.Sc Food Tech being **Plantation Products and Flavour Technology** and my dissertation and investigation was in **Cocoa processing** which helped me immensely to gain entry to CAMPCO.

### 2) What were your learnings from your first job at CAMPCO as assistant production manager?

CAMPCO helped me immensely in building my theoretical technical knowledge of the product category into hands on practical competencies and knowledge. CAMPCO provided me a very rich opportunity and ground to experiment, learn and execute whilst being on the job. Likewise, the period was also a golden phase in the life of CAMPCO as the manufacturing contract with Nestle India had

just commenced. So, for a very young and raw confectionery/ chocolate technologist that I was, I felt lucky to gain knowledge through various Nestle experts who were visiting CAMPCO at the time. I quickly gained their confidence. Likewise, I had a very strong support of the top management as well as colleagues of CAMPCO who educated me and groomed me in people management skills too. From a trainee I quickly moved to the position of Assistant production manager – managing shift operations within the factory. I consider the time I spent at CAMPCO as the golden period of my career as I learnt a lot then which is helping me even to this day. Lots of hands-on experience, zero desk work and no computers and e emails!! Every moment was dealing and interacting with people and on the shopfloor. Shopfloor presence continues to be my passion even to this day!!

### **3. Even though you had an experience of 4 years in chocolate industry, what made you to pursue diploma in chocolate and confectionery technology at Germany?**

I moved from CAMPCO and joined Nestle India, for its green field KitKat project in Ponda Goa in July 1994 after being offered a position right at the start of the project. I owe my gratitude to Nestle India for sponsoring me to the world-famous German school for Confectionery and Chocolate Technology (ZDS Sollingen) in 1996 for the diploma programme. Nestle invests in people and skills development and I was lucky to have been chosen. All my learnings at CAMPCO as well as Nestle was further complimented and strengthened at ZDS Sollingen. I was exposed to fellow international students coming from various well known chocolate industries at the time. This was a very different challenge and a great learning opportunity. I can remember, we were 4 of us from Nestle around the world in a batch of 12 in that year. ZDS had a lot of professors and tutors who were considered experts in their fields at the time – normally as a technologist you would be reading their text books and articles – here I was listening to their lectures and being in their practical sessions. It was a real dream come true for me as a young chocolate professional to be in ZDS. I owe my gratitude to all who believed in me and made it possible.

### **4. How did you start your journey at Nestle and how was your journey from production manager to your present position at Nestle?**

I was offered the position of Production Officer to manage shifts in the new KitKat factory in Ponda, Goa in 1994. However, I was very lucky to be a part of this greenfield project team right from the early days of the project. I was then given the responsibility of assisting plant start up in chocolate making, KitKat moulding as well as praline manufacture. I was also trained in KitKat factory Malaysia for KitKat production. In 1996 as I mentioned earlier, I was chosen for the ZDS confectionery diploma course, following which I was on a mission at the Nestle Chocolate R&D Centre, in Broc, Switzerland and was responsible for technology transfer to Nestle India for manufacture of high shelf-life Indian confectionery. Upon return to India in Dec 1996, I was appointed as the production manager of the India confectionery plant in Samalkha, Haryana. My team and I were responsible for commissioning and then for the operation of this new plant. Later in 1999 I was moved back to Goa as coordinator of confectionery co manufacturing. I was responsible for coordinating the technical support for 4 confectionery co-manufacturers' of Nestle India at the time – CAMPCO Puttur, CANDICO Nagpur, MAKSON Surendranagar, Pleasant Foods Chennai – all these locations manufactured confectionery and chocolate products for Nestle India. This was a great experience that gave a lot of insights into the commercial aspects of business as well as varied technologies apart from gaining a rich and diverse interaction with very tough and challenging business partners. Soon I was promoted to become Production manager of Ponda factory which was on a rapid expansion and growth in August 2000.

In June 2006, I moved to Delfi Foods in the Philippines as Factory manager (Unit of Petra Foods Singapore). Again, a very familiar area – chocolate and confectionery. In 2008, I was offered to come back to Nestle in Malaysia as Plant and Technology manager of the confectionery factory in Chembong. In 2012 I was moved to UK as Senior Principal Technical Advisor at the Nestle Confectionery Product Technology Centre, York. I was responsible for coordination of technical support to all the confectionery and chocolate factories within the Zone AOA (Asia, Oceania, Africa).

In Jan 2015, a very challenging and exciting opportunity came my way - I was expatriated to Kharkiv in Ukraine for an entirely new challenge and opportunity - to take over as factory manager of a noodle, sauce and seasoning factory. A very large factory spread over 2 manufacturing sites with about 1000 employees. This gave me a great exposure to a very different country, culture, product category and of course a very different life with acute winter at minus 20 degrees centigrade!! I was pleased that I gained opportunity to expand my work and knowledge from being a confectionery / chocolate professional to a new category - food.



In Jan 2019, I was again expatriated to my current role as Factory manager at the Petfood factory of Nestle Purina UK Manufacturing Operations Limited in Wisbech, Cambridgeshire in United Kingdom – this is one of the largest wet petfood manufacturing sites for the group and a very important manufacturing site for UK market which produces petfood under the brands Felix, Winalot, etc for cats and dogs.

### **5. As you are having vast international exposure, would you please elaborate your international experience?**

My working life has given me a great exposure to various product categories, which I have thoroughly enjoyed; varied culture, varied geographical locations, varied life styles and so on. My wife, my children and I equally enjoy travelling and exploring new places, countries, people – this primary interest has blended very well with our international moves. Each relocation is a rich experience!

My family and I have been very lucky to have lived and worked in 5 countries – India, Philippines, Malaysia, UK, Ukraine and now back in the UK. I am glad our children were able to school and study in all these countries. Although they have missed their friends while moving each time, they have gained much wider group of friends, we have together acquired diverse group of friends and acquaintances, embraced new cultures and values! We as parents are proud that our children have become true global citizens – all this is purely due to the support and recognition of my company. Of course, there have been a number of challenges personally especially when we could not be present physically with our dear ones back home in India during times of joy and sorrow many at times. I am very contented both professionally and personally.

### **6. Would you please tell us about the most difficult situation you have encountered in the food Industry? What were your strategies in dealing with them?**

The toughest situation from the recent past was during the pandemic when almost one third of my factory workforce had to stay away from work due to the rapid spread of COVID and we had to meet the business expectations and deliver the products on time. As our work forms a part of the essential services to cater petfood, it was vital to keep the production going. As a team we ensured our people were well protected from COVID and ensured strict controls were in place to avoid any workplace transmission. Gladly, we were very successful in protecting our people and continue to do so.

I have always held in high esteem and consider as my primary responsibility as a head of the factory is to provide a safe workplace for each one in my team. We always want our employee to get back home safe to their families at the end of the day.

### **7. What message or advice would you like to bestow upon the existing students and the upcoming generations of CFTRI?**

- You are in your golden period of life – learn and acquire lots of knowledge; becoming a perfect technologist is the key rather than acquiring super high grades; being able to use the knowledge is even more important. Keep acquiring knowledge and keep abreast of the innovations. People around you are so vitally important – grow them, coach them, guide them, provide opportunity – people respect transparency and selflessness - they will take care of you! It is important to share and impart knowledge – “it is important to teach someone to fish – this will make their living”
- Remember, there is no short cut to success!! **Always keep your options open to avoid disappointment – plan B often takes over plan A!!**

**My best wishes to all CFTRIans.**

# INDUSTRY BUZZ

## Skippi Ice Pops : India's first ice popsicle.

Skippi is a Hyderabad-based start-up selling India's first ice popsicle with no artificial preservatives, colour or sweeteners. It is gluten-free and tooth-friendly which means that it is soft and crunchy not hard, due to the patented manufacturing technique used. Ice pops are packed in liquid form which eliminates the requirement for any kind of freezing equipment at any level of storage and distribution. These are available in six different flavours (raspberry, mango twist, orange, cola, bubble-gum) and are sold in box and bag form. Recently in 'Shark Tank India' which aired on Sony TV, the company bagged an investment of one crore rupees in exchange for 15% equity from all the sharks present.



## A Bengaluru-based startup launches Coconut Leaf Straws

Evlogia Eco Care Pvt. Ltd. is a Bengaluru-based start-up that manufactures straws made out of coconut leaf as an alternative to plastic straws. Dried coconut leaves are processed and steamed at 120° Celsius making them sterile and softer to roll. Each straw costs Rs. 1.5-2. There are different qualities of straws based on where they are used and what they are used for; like regular coconut leafy straw, thick shake coconut leafy straw, cocktail coconut straw, and tetra pack coconut leafy straw. The main advantages of these straws are that they stay intact for hours in liquid, have no external coating of any waxy material, and come with a shelf life of one year.



## Horlicks launches "Nutri gummies"

To meet the nutritional demands of young children, one of the most popular and leading brands in the health drink segment, Horlicks, has recently introduced 'Nutri gummies'. The company has made a foray into the gummies segment. Horlicks has designed a product that is easy to chew, non-sticky, and concentrated with essential nutrients. The company claims that the product is packed with several key vitamins, notably Vit A, Vit B1, VitB5, Vit B6, Vit B7, Vit B12, Vit C, Vit D, Vit E, and minerals such as iodine, iron, and zinc. It also claims the product is free of preservatives, artificial colors and flavors, added sucrose and gelatin. The company added that the product is not a substitute for vegetables, should be consumed only by children of age more than 2 years and in quantities as per recommended daily serving.



## VKC Nuts launches 'Bactopure', India's first and only range of pasteurised nuts and dried fruits

VKC Nuts, India's leading, fully integrated farm to fork nuts and dried fruits company has announced the launch of 'Bactopure', India's first and only range of pasteurized nuts and dried fruits, under its signature brand 'Nutraj'. With this product launch, the Indian market will witness nuts and dried fruits having international standards of hygiene & purity.



## Supplement Sack launches Peanut Butter

Supplement Sack, a food and supplements brand has launched peanut butter in the FMCG segment. The product has been launched under its sub-brand 'Muscle Fibre'. It is available in two flavours-chocolate and classic. The company focuses on zero trans-fat and zero cholesterol products. The product is excellent in terms of shelf life and the oil separation is minimum. It is a good option for both children & adults. It contains 26 g of protein, zero trans-fat and cholesterol per 100 gm serving. Additionally, it contains fibre, protein, and micronutrients such as Mg, Zn, and K.



# FSSAI POLICIES AND REGULATIONS



FSSAI RELEASES GAZETTE NOTIFICATION OF FOOD SAFETY AND STANDARDS (VEGAN FOODS) REGULATION, 2022

10/06/2022

According to regulation, “vegan food means the food or food ingredient, including additives, flavorings, enzymes, and carriers, or processing aids, which are not products of animal origin and in which, at no stage of production and processing, ingredients, including additives flavorings, enzymes, and carriers, or processing aids that are of animal origin has been used.” Sellers of vegan foods shall store and display vegan and non-vegan products separately. Every package of vegan food shall comply with regulations specified under packaging regulation and shall have the logo of vegan food.



FSSAI RELEASED AMENDMENT ON ALCOHOLIC BEVERAGES REGULATION

10/06/2022

In a recently released amendment on alcoholic beverages, FSSAI stated that “non-alcoholic counterpart of alcoholic beverage” means non-alcoholic beverage having alcohol content less than or equal to 0.5% alcohol by volume, which shall meet all requirements of the respective alcoholic beverage of origin except ethyl alcohol content. The alcoholic beverage of the origin must go through the fermentation process, and produced alcohol is removed thereafter. FSSAI also stated, “Flavoured beer is a beer containing flavors as per provisions Food Products Standards and Food Additives Regulations, 2011 and such beer shall meet all the other requirements of the beer, specified by regulations.



PROVISIONS FOR 'DISPLAY OF INFORMATION IN FOOD SERVICE ESTABLISHMENTS'

14/06/2022

As per FSS (Labelling and display) Regulations, 2020 which will be effective from 1 July, 2022, “Food service establishments having central license or outlets at 10 or more locations shall mention the calorific value (in kcal/per serving or serving size), nutritional information, allergen information, ingredients information and specific requirements prescribed against the food items displayed on the menu card or booklets or boards wherever applicable”. Regulation also stipulated that, “E-commerce food business operators shall get the requisite nutritional information from respective food business operators and provide on their website wherever applicable.”

# KAMPUS KHABAR

## VALENTINE'S DAY

Valentine's Day was celebrated with – chocolates, handwritten letters and of course a whole lot of love on the 14<sup>th</sup> of February. We were enthralled with wonderfully thrilling, enchanting love letters - everyone bringing out the poetic flair and charm in them. It was a splendid time celebrating love, friendship, and more. The memories of which shall be forever cherished by us all.



## MAHA SHIVARATRI



Maha Shivaratri is the most important sectarian festival of the year for the devotees of the God Shiva. On the 1<sup>st</sup> of March, the IFT Club organized puja in the evening in the IFT Club Office room. The preparation started a day before with the making of the Shivalinga with clay. The decoration of the IFT room was done using mango leaves and flowers with beautiful rangoli drawn in front of Lord Shiva. The puja started by offering Bael leaves and flowers followed by aarti to Lord Shiva. Mr. Abhimanyu Singh Rathore of French Toast Mafia batch had joined the occasion. After the puja, 'panchamrita' was served as prasad with sweets. It was a great evening celebrating the Shivaratri together. Everyone felt the divine blessings of Adidev on the auspicious celebration of Mahashivaratri.

Holi, the festival of colours was more of a festival of getting along, laughter and love in the hostel premises on 19<sup>th</sup> march 2022. The day was nothing less than a colorful chaos. From throwing vibrant shades of red, green and yellow, splashing water, getting dragged to the muddy puddle and applying those never-coming-out golden silver Holi powders to laughing at your batchmate's tinted face, dancing aimlessly to those peppy DJ songs and vigorous attempts to remove the colours later that day. Mr. Abhimanyu Singh Rathore of the French Toast Mafia batch was also with us. Holi is said to be the beginning of spring, and this interestingly did spring within us, CORNquerors and PAVrangers, the love we shared for each other.

## HOLI





## UGADI

Ugadi in literal terms translates to the beginning of a new year. On 2<sup>nd</sup> April 2022, this auspicious day was celebrated in the IFT club. Decorating the room with flowers collected from in and around the campus, CORNquerors arranged a divine ambience with classic Ugadi music echoing the room. Along with the seniors, the juniors relished the traditional festival elixir, the 'Pachadi' which is made with 6 ingredients to depict the six emotions of life. Later that evening, watermelon juice was prepared and served to everyone in customized cups. Pictures were taken to save this lovely memory.

Eid is the greatest festival of the Muslims. This festival is also known as "Eid-ul-fitr". The festival of Eid is celebrated after the holy month Ramzan. During this time, Muslims fast from sunrise to sunset. Like all the other festivals, Eid was also celebrated by the M.Sc family in CFTRI on 3<sup>rd</sup> May 2022. Both PAVrangers and CORNquerors gathered in the lawn. We celebrated the festival by cutting chocolate cake. At the end of the celebration, Rafaquat Hussain Ansari of the CORNquerors batch had added a few words about the festival. A special sweet called "Sewain" was prepared in the International Hostel Mess at night. Everyone enjoyed and celebrated the festival happily.

## EID



## TECH-BHARAT



Tech Bharat 3<sup>rd</sup> edition, a three-day conclave, and exhibition was held at CFTRI Mysuru from 19<sup>th</sup> May, 2022 to 21<sup>st</sup> May, 2022. It was a perfect conference that throws the light on the current trends in Agri-tech innovation where many entrepreneurs and state and central government officials participated. It was a great start with the inauguration of the event by Shri. Pashupati Kumar Paras, Union Minister for Food Processing Industries, Govt. of India, Shri. Kailash Choudhary, Union Minister of State for Agriculture & Farmers Welfare, Govt. of India, Smt. Shobha Karandlaje, Minister of State for Agriculture and Farmers Welfare, Govt. of India, and Shri B.C. Patil Hon'ble Minister for Agriculture, Govt. of Karnataka followed by a panel discussion on Agriculture development by Shri. Shrinivit Emanuel, Economist from Israel and Shri. Srinivas Chidumalla.

Digital Capability Lead, APAC. The Second-day event was inaugurated by Dr. Jithendra Singh, Minister of State(IC) for the Ministry of Science and Technology. Also, there was a session on “Food Business Ecosystem-Importance of Marketing Strategy” and a session on “Opportunities for Women in Agritech and Food Pro-Tech” followed by a CXO-Round table. The expo was set up on the ground front of the mansion which had attracted a huge number of visitors to the stalls owning good start-up ideas and new products and technology. The conferences and Talk shows held at IFTTC Auditorium were a huge bundle of knowledge transfer for the audiences by renowned speakers. The drone demonstration was also done in front of the mansion to exhibit its potential in the field of agriculture. It was a great three days of opportunity for learning about real-time problems and opportunities in the field.

## GET-TOGETHER

How great is it when three generations of the M.Sc family meet! The PIETHons, PAVrangers, and the CORNquerors met and had one of the most memorable get together at “The Quorum hotel” on



28.05.2022, Saturday. The party started with all the CORNquerors having a funny introduction. The CORNquerors engaged the session with their performances followed by the PAVrangers. The dance floor was set on fire with a rocking DJ and dance. The dinner was served and all sat together reminiscing and sharing their days on the campus. The night was nothing but people walking down memory lane.



## FRESHER'S DAY- EUPHORIA

“EUPHORIA”- It's a brand-new start. The CORNquerors batch of CFTRI 2021-2023 woke up to the surprise of an invitation at their doors welcoming them to their most awaited fresher's day celebration. The hostel campus was buzzing with all the freshers getting ready and practicing for their day. The event started by clicking

mysterious entry fee of unknown shots. The entire auditorium was decorated with balloons, pictures of seniors and their official juniors, and a stunning stage. With roaring applause and whistles from the crowd, the gorgeous ladies and the handsome lads of the batch walked down the ramp hand in hand. The PAVrangers had come up with special tasks for the CORNquerors to shortlist their Mr. and Ms. Freshers 2022. The event was graced with the presence of our prestigious Guest of honors, Dr. Sridevi Annapurna Singh, Director CFTRI, Dr. P.S. Negi, Head of HRD, Dr. R.P. Singh, Chief Scientist, and Dr. Poornima Priyadarshini C G, Warden of IFTTC (Sr. Scientist). Mr. Abhimanyu Singh Rathore of French Toast Mafia batch, Ms. Anushree G V and Ms. Priya. L of Soup-a-stars batch, Ms. Pooja S T, and Ms. Thanuja B J of PIETHons batch also joined us for the event. The freshers had too many performances lined up starting from a group song, mime, a synchronized swimming skit, a dance mashup, and a lazy dance. After a short energizing dinner, the CORNquerors set the stage on fire with their fusion dance performance, followed by a surprise massive performance of PAVrangers. Mr. A. Pradeep and Ms. Kushi Navin were named as Mr. and Ms. Freshers 2022 respectively. There was a peppy DJ night and the event had a glorious end with cake cutting and embracing the new start for CORNquerors.

# FOOD INCORPORATED

## **iD FRESH FOOD: A COMPLIMENT TO HEALTHY HOMEMADE COOKING**

iD fresh food was founded in the year 2005 by an IIM-Bangalore alumni P C Musthafa and his cousins, Shamsudeen TK, Abdul Nazer, Jafar TK, and Noushad TD. P C Musthafa is the Chief Executive Officer. The idea struck PC Musthafa when his cousin, who had a kirana store, constantly complained about the quality of dosa and idli mixes produced by the local vendor. While spending weekends in the kirana shop, PC Musthafa noticed that the idly dosa batter was being sold in transparent unbranded polythene bags, tied with a rubber band. This marked the beginning of iD Fresh Foods, which was started in a 550 sq. ft room with one batter grinder and a packaging machine. The name iD was suggested by one of the cousins as an acronym for idli-dosa. Eventually, the venture was named 'iD Fresh', indicating an identity for fresh idli and dosa batter. The initial investment was Rs. 25,000. Today, Musthafa heads Rs. 1,000 million company, and products are sold in various Indian metropolitan cities and few overseas locations as well. The complexities of the dual-income group and the hurly-burly urban life have greatly encouraged the entry of a new class of foods called Ready-To-Cook (RTC). iD Fresh foods are known for their traditional recipes and high standards of hygiene.



### **Idli and Dosa Batter**



The batter is completely free from preservatives, chemicals and artificial flavors. The conventional ratio of 1:4 lentil to rice and a 0.01 portion of fenugreek seeds is maintained. The product is in semi-solid state, which is the correct consistency to make idli's and dosa's have an aroma like that of homemade batter. Until 2014, the batter was being packed in sealed packs, where the customers had to cut open the pouch and transfer the contents into a bowl and store. Later, with packaging innovation, they introduced a special type of packaging called the 'transformer pouch'. This is a sealed pouch which, when opened takes on the shape of the container and can also be stored in the same pack.

### **Squeeze and Fry Vada Batter**

Vada is a circle shaped doughnut-like age-old snack that has a problem of shaping it with the hole intact. iD fresh food has come up with a squeeze and fry pack that will form the vada with a hole as the batter is squeezed through the spout. There is no added preservative or soda. The squeeze with ease pouch is provided with a cutter. The cutter is slid upward and the nozzle is opened, squeezing the batter till it attains the perfect-sized ring. The cutter is slid downward to make one vada.





## Coconut range with innovative natural packaging



The brand maintains its reputation of being preservative-free. With the launch of several coconut products which are sold in their natural coconut shell, the company emphasizes plastic-free packaging. The natural packaging retains the product's freshness, aroma, and taste while increasing shelf life. The iD Smart Sip Tender Coconut comes with the core message of “Know Your Coconut” as the packaging includes information about the water content, pulp, sweetness, and total edible quantity, which will offer consumers a choice to purchase as per their needs. Its packaging includes a paper straw and a sticker to be peeled by the consumer before drinking. To scrape out the pulp, there's a bigger circular groove that can be cut open with ease.

## iD Fresh Instant Filter Coffee

iD Fresh Food has three unique blends of first-of-its-kind 'Instant Filter Coffee Liquid'. It is rich, dark and easy to make, by just adding milk and sugar to the liquid. The three exceptional blends are- Strong, Bold and Intense. Strong offers a traditional blend of 70% coffee and 30% chicory; Bold is a combination of 80% coffee and 20% chicory, and Intense is 100% coffee for the purists who like their coffee blended with nothing but coffee.



## iD Natural Thick Curd

Thick, creamy & healthy iD Dahi, made with farm-fresh milk and natural culture like how you would at home. No artificial preservatives or harmful chemicals are added.



## iD Fresh Food wheat-based products

The brand-new products in the category are – iD Sandwich White bread and iD Wheat Sliced bread. They are free of acidity regulators, flour treatment agents, antioxidants, emulsifiers, or class II preservatives. They have a shelf life of five to six days. Being absolutely free of synthetic preservatives/additives is what makes them different from other similar products in the market.



# WHAT THE FOOD

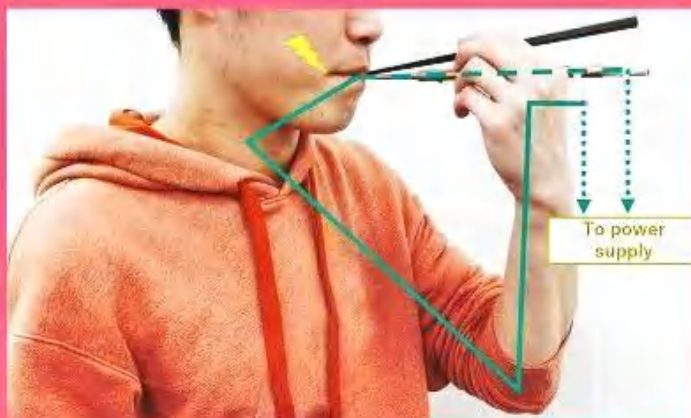
## THE ELECTRICAL CHOPSTICK

"The key to control your sodium intake is in your hands".



The Electrical Chopstick.  
Credits: Meiki University

Can you ever think of fooling your brain?? Yes, you heard it right!!! Researchers in Japan have invented a set of electrical chopsticks that can recreate the taste of salt in the hope to lower sodium intake. Today, most people consume far more salt than the World Health Organisation (WHO)'s recommended daily amount, with an average Japanese person consuming more than 10 grams of salt a day. This is almost twice the WHO's recommended guidelines for daily salt intake. A high salt diet can contribute to high blood pressure, cardiovascular disease and obesity. Lead Professor Miyashita, one of the co-creators of the electrical chopsticks, has explored ways that technology and taste can meet. However, it is currently in an experimental stage, but the team behind these innovative chopsticks is hoping to have the product on shelves and make it available to consumers as early as possible. To solve this problem, researchers from Meiki University and beverage maker Kirin Holdings have made a set of unique chopsticks that use electrical currents to mimic the taste of salt. The hope is that the invention can be used to help reduce sodium levels in diets.



The Chopstick sends electrical simulation

These are the world's first chopsticks that work through a wearable computer, which straps to a user's wrist and connects to the chopsticks via a wire. A faint electrical current then transmits sodium ions to the mouth to recreate salty flavors, enhancing the salty taste of low-sodium food by about 1.5 times.

Isn't it fascinating?

# CAREER CORNER

## TAKING ENTREPRENEURSHIP AS A CAREER OPTION

**“If opportunity doesn’t knock,  
build a door”**

**- Milton Berle**



### Defining a Startup: The Meaning

The Oxford Dictionary defines a startup as “a newly established business” while according to Merriam-Webster, startup means “the act or an instance of setting in operation or motion” or “a fledgling business enterprise”.

But the question here is what comes to your mind when you hear the word “STARTUP”? The common answers that we usually get are influenced by popular media, depicting startups as unsecured jobs, failed companies, free food, beanbags, friday beers, open office landscapes, and sleeping pods whereas no one recognizes the hard work put on by the guys grinding in their garage. It is modernly defined as “The early stage in the life cycle of an enterprise where the entrepreneur moves from the idea stage to securing financing, laying down the basic structure of the business, and initiating operations or trading”. A startup can become a Unicorn, Decacorn, or Hectocorn.

Recently, a reality show namely, Shark Tank India was telecasted on television where budding entrepreneurs got the opportunity of showcasing their business models. Some eminent sharks raised funding for several startups, including those in food domain, such as Ice Popsicles, Get-A-Whey – Sugar-Free Ice Cream, IN A CAN – Can Cocktails and many more.

## STARTUP INDIA SCHEME:

Startup India is a flagship initiative of the Government of India, intended to catalyze startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship in India. Launched on 16<sup>th</sup> January 2016, the Startup India initiative has rolled out several programs to support entrepreneurs, build a robust startup ecosystem, and transform India into a country of job creators instead of job seekers.

MSMEs in India: Micro, Small and Medium Enterprises in India allows micro-enterprises (<25 lakhs), small enterprises (25 lakhs to 5 crores), and medium enterprises (5 crores to 10 crores). Startup India provides benefits such as 3 years of income tax exemption that can help reinvest money saved by tax back into the growth of the company. Patents and trademarks documentation get up to 80% lower price and easy trackway. Even startups with no prior experience can apply for government tenders. Startups also get help from banks to access capital funded by the central government.

## Case study: Akiva superfoods: A Step towards healthy Food Transformation in India



Shalabh Gupta, the founder of Akiva Superfoods started his corporate journey with McKinsey & Co. in 2009 and continued in the organization until 2014. During this period, he understood the wellness foods market in the USA and Europe by living and working there. On his return to India, he realized that there was a substantial need to make healthy foods and beverages more accessible, affordable, and convenient for the urban population.

Akiva superfoods is a creator of ayurvedic beverages which does not require refrigeration. These products do not require any mixing or dilution, enabling customers to enjoy drinks in form of shots. After the success of shots, Akiva has introduced a wide range of healthier groceries across categories like ghee, peanut butter, honey, apple cider vinegar, and herbal powders. Currently, Akiva is present in 10,000 stores, serves over a million customers, and has over 100 crores in sales.

# ALUMN COLUMN



**Bhupender Singh**  
2015-17

**Research and Development**  
**Marico Limited Mumbai**

**1. What was your batch name and is there any interesting story behind it?**

Our batch name was Kung Food Pandas. We had done voting for our batch name as there were multiple options and this name was selected after voting in the class group.

**2. CFTRI is full of legacies. Which legacy you would like to acknowledge?**

CFTRI is having a brand name in industry and wherever we go we will always find a CFTRIAN at the senior position, which really helps in adjusting to a new organization or getting better relations with a vendor. This I feel is a significant advantage and our legacy.

**3. Life at CFTRI is full of twists and turns. How would you describe your 2 years here?**

I would describe my two years at CFTRI full of adventure and fun. I was an introvert but after coming to CFTRI, I never spent an entire day in my room. There was always something or other thing, birthdays, festival celebration, outings to markets and restaurants, parties. We explored everything that could be explored in Mysuru and nearby areas. We used to host DJ nights on many occasions that were fun.

In terms of studies, I feel CFTRI has excellent resources for practicals which really helped in understanding the concepts that were taught in theory, plus the support from all the scientists was excellent.

4. How did CFTRI help prepare you for your career?

The curriculum at our time was research focused, which is very different than what is being practiced in the industry. But the research and presentation skills really help in day-to-day office work and the CFTRI hostel environment really helped me in developing my people skills which are essential for working in any organization.



5. Which was your favourite place to hang out in CFTRI campus?

Garden in front of palace.

6. Hostels are the core zone of CFTRI life which block marks the most memorable moments of your stay in hostel?

F-Block that was assigned to me during the first semester of CFTRI. I find it most memorable as the initial semesters were spent here and we were still in the nascent phase of our journey in CFTRI. Also, our seniors used to hold night parties in this block only, so it is most memorable to me.

7. The intro sessions are integral part of the CFTRI legacy please share your most vivid memory regarding the experience.

Before coming to CFTRI I was never part of any hostel, so intro sessions initially were very dreadful experience for me, we were not supposed to laugh and sit still and alert during the session and they lasted for 4-5 hours every night.

Once I was caught laughing and arguing with seniors and was made to sit beside the central chair and recite all the intros of other people who were giving the intro that night. That was the most vivid experience for me.

8. Out of your experience which is that one thing you would advise the students that they must do?

Firstly I would advise everyone to connect with our alumni during our college time itself. It really helps in getting guidance from them during the initial years of your career. Secondly, I would advise everyone to choose their first company very carefully and decide initially what they want to do later in their career and what will be their core area. This helps tremendously in the initial years as our affection to our job really defines our success.

9. Any hilarious incident you came across in class?

None in class. But as a batch we went to watch Kung Fu Panda movie together, which I find quite hilarious.



# PLACEMENTS



AMAL BOSS



ASHNA XAVIER



DIYA JYOTHIS



UNITED BREWERIES LIMITED



YASHMITA GROVER



ANKITA JHA



MANOJ U



RAM PRASAD NAIK K



Pernod Ricard



SHIVANI DHAKA



SHREYA KHALAI



LEKSHMI VIJAYAN R



# PLACEMENTS



MUSKAN WADHWA



SUREKHA A



YAMINI SEMWAL



SINNI MISHRA



DIVYA AGGARWAL



BHAWNA CHUGH



AKSHAY V



SAMIKSHA JAYGADKAR



SWATHI K





# PLACEMENTS



THEJAS C M



SHAILAJA H POOJARI



SRINIVASA K T



KADAM ANAGHA SUNIL



RASHMITA G



MOHAMMED ASFIYA TABASSUM



SHALINI SINHA



# Food Riddles



## ACROSS

## DOWN

- |   |   |
|---|---|
| <p>4 To cook with vapor produced by a boiling liquid.</p> <p>6 To spoon pan juices, melted fat, or another liquid over the surface of food during cooking to keep the food moist and add flavour.</p> <p>8 To cook in liquid over 212 F.</p> <p>10 To cook in liquid that is barely at boiling point.</p> <p>11 To decrease the quantity of a liquid and intensify the flavor by boiling.</p> <p>12 To soak meat in a solution containing an acid, such as vinegar or tomato juice, that helps tenderize the connective tissue.</p> <p>14 To mix or blend two or more ingredients together.</p> <p>16 To brown the surface of a food very quickly with high heat.</p> | <p>1 To work a dough by pressing it with the heels of the hand, folding it, turning it, and repeating each motion until the dough is smooth and elastic.</p> <p>2 To cut into very small cubes of even size.</p> <p>3 To beat quickly and steadily by hand with a whisk or rotary beater.</p> <p>4 To put through a sieve to reduce to finer particles.</p> <p>5 To cut or chop into very fine pieces.</p> <p>7 To make a liquid more dense by adding an agent like flour, cornstarch, or egg yolks.</p> <p>8 To stir ingredients until they are thoroughly combined.</p> <p>9 To cut food into thin, stick sized strips.</p> |
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# Food Riddles continued...

## ACROSS

- 18 To decorate foods by adding other attractive and complementary foodstuffs to the food or serving dish.
- 19 To heat an appliance to a desired temperature about 5 to 8 minutes before it is to be used.
- 20 To break a food by pressing it with the back of a spoon, a masher, or forcing it through a ricer.
- 21 To remove liquid from a food product.
- 22 To remove the outer layer.
- 24 To turn the surface of a food brown by placing it under a broiler or quickly cooking it in hot fat.
- 25 To incorporate a delicate mixture into a thicker, heavier mixture with a whisk or rubber spatula using a down, up, and over motion so the finished product remains light.

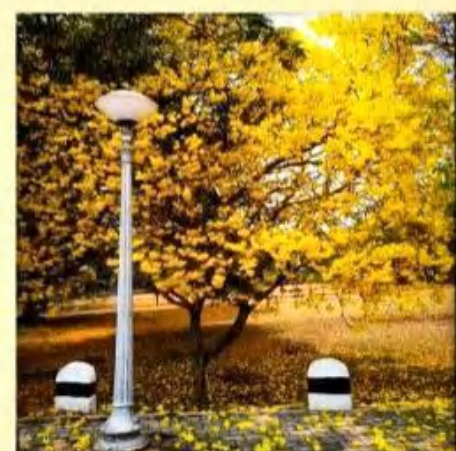
## DOWN

- 13 To boil cook without fat in an uncovered skillet.
- 14 To pulverize.
- 15 To cut into small pieces.
- 17 To separate solid from liquid materials.
- 18 To mechanically break down a food into a finer texture.
- 19 To put food through a fine sieve or a food mill to form a thick and smooth liquid.
- 23 To broil over hot coals or to fry on a griddle.

## ANSWERS



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