



***FSSAI- NIFTEM –CHIFSS***

***TWO DAYS WORKSHOP***

***ON***

**PREDICTIVE MICROBIOLOGY AND MODERN  
BIOLOGICAL TOOLS IN FOOD SAFETY**

***ANNOUNCEMENT MAILER***

***Organized At***

***National Institute of Food Technology  
Entrepreneurship and Management (NIFTEM)  
Kundli  
11-12 December, 2019***

## BACKGROUND ABOUT THE WORKSHOP

Microorganisms in foods remains one of the biggest food safety and quality challenges, leading to a high burden of food borne illnesses and remain one of the biggest public health challenges for the country. Food producers and industries suffer from huge losses due to lack of proper and timely detection of spoilage. However, understanding of responses and behavior of microorganisms in food systems can help develop strategies to control them. Quantitative Microbiology and Microbiological Risk Assessment are very effective approaches that have been leveraged across the developed world to prevent food borne infections and food spoilage.

This workshop at NIFTEM in collaboration with CHIFSS is designed with an objective to enhance skills and expertise about quantitative microbiology and risk assessment in food industry. The workshop will also enable capacity building on the practical application of Predictive Microbiology and its associated tools and techniques relevant for various food categories and sectors.



## BENEFITS:

- Develop understanding of key principles of Quantitative Microbiology (QM) and Microbiological Risk Assessment (MRA) for efficient food safety management.
- Better appreciation of key microbiological safety issues encountered by consumer, industry and the government, enhance and update knowledge of predictive microbiology, and learn new approaches for modelling food borne pathogens.
- Hands on training on use of microbial modelling software's to obtain accurate estimates on growth, survival and lethal effects of processing environments on food borne pathogen, that will help participants to predict the outcome of a process, e.g., number of log reduction, resulting from the processing conditions, e.g. residence time and temperature.
- Opportunity to learn how to acknowledge intrinsic barriers during formulation while designing intervention processes that ensure safety against pathogens in foods.

### FACULTY:

Dr Vijay K Juneja, Lead Scientist ,USDA-Agricultural Research Service

Dr Balkumar Marthi, Principal Consultant, DaQsh Consultancy Services

### WHO CAN PARTICIPATE

- Professionals from various segments of Food Processing Industries, Food Analysts from Industries, Academicians, Scientists from R & D institutions, Students with microbiology, Research scholars, regulatory agencies, Microbiologists, Biotechnologists, Entrepreneurs in food industry.

### REGISTRATION FEE

Delegate Category	Early Bird Offer	After 5 <sup>th</sup> Nov	Spot Registration
	INR	INR	INR
Faculty / Scientists	2000	2500	3000
Industry personnel	2500	3000	3500
Students and research scholars	1000	1500	2000

Registration fees includes: Workshop, material, Participation in lectures and hands-on training sessions, Morning and evening tea and Lunch.

### ONLINE REGISTRATION

Submit your Registration and Accommodation Form online at [www.niftem.ac.in](http://www.niftem.ac.in). Before submitting carefully read the instructions for online submission. Payment can be made by Demand Draft/ multicurrency cheque in favor of NIFTEM, Payable at Delhi or through bank transfer as per the account details given below. The registration fee covers accommodation, meals and study material charges.

The filled registration form should be sent to the email id [microworkshop.niftem@gmail.com](mailto:microworkshop.niftem@gmail.com)

Account name	NIFTEM
Bank Name	State Bank of India
Branch	NIFTEM Campus, Kundli, Sonepat, Haryana, India
Branch Code	15479
Account No.	32565106213
IFSC Code	SBIN0015479
SWIFT Code	SBININBB231

Cancellation must be notified in writing to the coordinators before December 1<sup>st</sup>, 2019. No refund of fees once registered for the workshop.

## ACCOMMODATION

Luxury and budget hotels are available near the venue for booking of accommodation. Limited guest house accommodation will be available on first come first serve basis. Accommodation on behalf of the delegate would be booked by the organizing committee only after receiving a draft of tariff for two days. Kindly fill the accommodation form online available at the website before December 1, 2019.

S.No.	Accommodation	Per Day Charges (INR)
1.	Luxury Hotels	6000 - 9000
2.	Business Hotels	3500 - 6000
3.	Budget Hotels	2000 - 3500
4.	Student Accommodation	200 per person*

\*shared accommodation.

## TRAVEL ARRANGEMENTS

It is expected that the participants shall make their own travel arrangements. However transport from Railway/Bus station/ Airport to the venue or place of stay may be provided on prior request on payment basis.

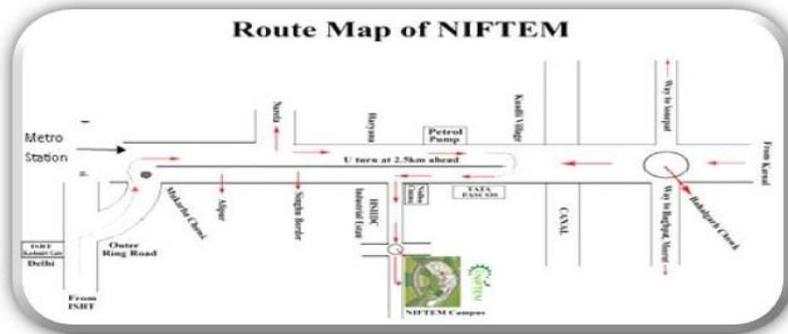
### Contact Persons

<b>For Accommodation</b>	Dr. Chakkarvarthi	Assistant Professor	<a href="mailto:chakkaravarthiniftem@gmail.com">chakkaravarthiniftem@gmail.com</a>
<b>For Transport</b>	Er. Kumar Rahul	Assistant Professor	<a href="mailto:kumarrahul.niftem@gmail.com">kumarrahul.niftem@gmail.com</a>

## REACHING NIFTEM

NIFTEM is located in Kundli on Delhi-Haryana Boarder (Singhu Border-GT Karnal Road). Delhi Bus Stand (ISBT- Kashmiri Gate) and New Delhi Railway Station are about 30 Km and 40 Km, Respectively and International Air Port is less than 70 Km from NIFTEM. Nearest Metro Station is in Jahangirpuri, Delhi about 20 Km from NIFTEM.

During December, the weather is cold and temperature ranges from 10-15<sup>0</sup>C at night and 20-25<sup>0</sup>C during the day. Light winter clothes are sufficient during the period.



### Organizing Committee:

#### CHIFSS

Ms Surbhi Datta (Counsellor)  
[surbhi.datta@cii.in](mailto:surbhi.datta@cii.in)  
 9873233583

Ms Shivani Singh  
[shivani.singh@cii.in](mailto:shivani.singh@cii.in)  
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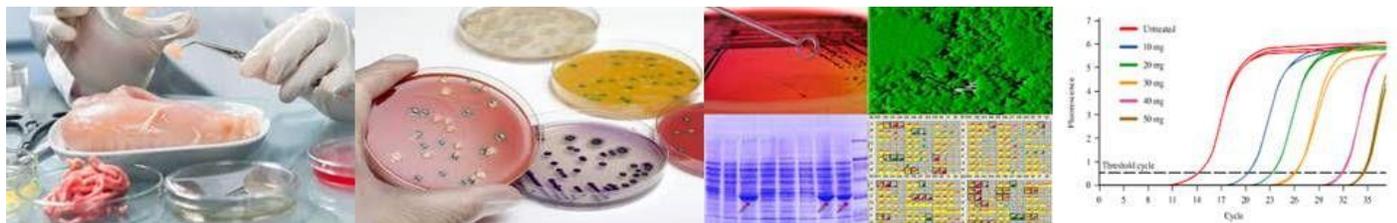
#### NIFTEM

Dr. Vijendra Mishra  
 Convener

Dr. Manjeet Aggarwal  
 Convener

Dr. Neetu Kumra Taneja  
 Coordinator  
[drneetu.niftem@gmail.com](mailto:drneetu.niftem@gmail.com)

Dr. Komal Chauhan  
 Coordinator



### TENTATIVE WORKSHOP SCHEDULE

Mins	Topic/title	Speaker/ Facilitator(s)
<b>DAY 1</b>		
<b>09:00 -09:30</b>	<b>Opening Remarks</b>	<b>NIFTEM/FSSAI/CHIFSS</b>
	Introduction to the workshop	
	Quantitative Microbiology in food manufacturing <ol style="list-style-type: none"> <li>Pathogens and food Products of concern</li> <li>Food Spoilage and shelf life</li> <li>Existing and emerging technologies for food preservation               <ul style="list-style-type: none"> <li>Hurdle Concept</li> <li>Shelf life extension</li> </ul> </li> </ol>	Dr Vijay Juneja and Dr Balkumar Marthi
	HACCP Principles <ul style="list-style-type: none"> <li>Microbiological Hazards</li> <li>Processing Guidelines</li> <li>Temperature Control</li> </ul>	Dr Balkumar Marthi
	Fundamentals of Predictive Microbiology <ol style="list-style-type: none"> <li>Experimental design and data collection.</li> <li><b>Primary models:</b> describe the microbial population with time (fitting curves to data) – Growth, survival, inactivation, measuring parameter values.</li> <li><b>Secondary Models:</b> describing changes in parameter values of primary model with changes in environmental conditions (T, pH, aw, preservatives).</li> </ol> <p><b>Square root growth, regression equations</b></p> <ol style="list-style-type: none"> <li><b>Tertiary modes (mode interface):</b> software tools to input data, predict results. E.g. Pathogen Modelling Program.</li> </ol>	Dr Vijay Juneja
	Industry Visit – to be decided	Dr Vijay Juneja
<b>Day 2</b>	<b>End</b>	
	Application of Predictive Microbial modelling- <ol style="list-style-type: none"> <li>Overview and demonstration of software tools               <ul style="list-style-type: none"> <li>Predictive Microbiology Information Portal</li> <li>Pathogen Modeling program</li> <li>ComBase</li> </ul> </li> </ol>	Dr Vijay Juneja
	Case Studies demonstrating their application	Dr Vijay Juneja
	Wrap up and future direction of food safety capability building in the area of Predictive Microbiology <ul style="list-style-type: none"> <li>Action Planning for Practical Application of Predictive Microbiology</li> <li>Building of Indian network of Risk Assessment Practitioner (by means of train the trainer program) with specialized application in Predictive Microbiology.</li> </ul>	Dr Vijay Juneja/ NIFTEM/FSSAI/ CHIFSS/

**Pathogen Modeling Program (PMP).** A desktop version 8 that is available as a free download at the link: <http://ars.usda.gov/services/docs.htm?docid=6786>

PMP, a user-friendly computer software, is a package of models that can be used to predict the growth and inactivation of foodborne bacteria, primarily pathogens, under a wide variety of environmental conditions. These predictions are specific to certain bacterial strains and specific environments (e.g., culture media, food, etc.) that were used to generate the models. PMP was designed for food manufacturers, regulatory agencies, and research institutions. It allows food producers to design processing and handling practices to ensure microbiological safety of their products. PMP is used throughout the world to help food companies comply with food safety regulations and to reduce the risk of human illness from their products through better process and food product design. It has also been used in high schools and universities for educational and teaching purposes. The PMP was downloaded more than 5,000 times every year and routinely used by 30% of the food industry. Thus, the PMP is the most widely used product of this type.

**Predictive Microbiology Information Portal (PMIP).** Website: <http://portal.errc.ars.usda.gov>

A comprehensive web portal for predictive microbiology that includes food pathogen data, predictive models and other useful information about microbial food safety. This user-friendly internet based food safety portal assists small and very small processing companies in the use and interpretation of predictive models. The processors obtain information about the underlying principles of predictive models as well as the use and interpretation of these models. It assists processors in achieving the greatest possible safety, quality and wholesomeness of their products. Since its release in August 2007, the portal is being used by users to ensure the microbiological safety of their processed foods and to determine compliance with the regulatory performance standards. The PMIP links users to numerous and diverse resources associated with models (PMP), databases (ComBase), regulatory requirements, and food safety principles. Several models of the PMP are also accessible on-line at <http://pmp.errc.ars.usda.gov/>

**ComBase.** Website: <https://www.combase.cc/>

ComBase is a database that contains thousands of data of growth, survival, and inactivation of bacteria under various food processing and environmental conditions. Through a user-friendly interface, users can quickly retrieve microbial data of their interest. After searching the database for the desired information, the results can be downloaded and used for model development or validation. ComBase is designed for food manufacturers, regulatory agencies, research institutions and anyone interested in the food safety and quality of foods. ComBase helps food researchers identify research needs that lead to the improvement of product safety, and help food producers to better design their processes and products to reduce the risk of illness and recalls of their products from non-compliance with food safety regulations.

**PREDICTIVE MICROBIOLOGY AND MODERN  
BIOLOGICAL TOOLS IN FOOD SAFETY  
(December 11-12, 2019)**

**REGISTRATION FORM**

Affix a latest  
passport  
size photo

<b>Name</b>	
<b>Designation</b>	
<b>Organization</b>	
<b>Complete address</b>	
<b>Contact No.</b>	
<b>E mail</b>	
<b>Payment details</b>	
<b>Accommodation required (Y/N)</b>	
<b>Signature</b>	
<b>Date</b>	
<b>Place</b>	

### **About NIFTEM**

National Institute of Food Technology Entrepreneurship and Management (NIFTEM) was conceptualized by Government of India on persistent demand of the food industry to have an Apex Body as a One Stop Solution Provider for the various problems of the sector. Ministry of Food Processing Industries, Government of India has set up this institute with an initial investment of Rs 500 crore (US \$100 million). The institute is spread over an area of 100 acres. The institute intends to act as a centre of excellence in the area of Food Technology and Management. It will cater to the needs of various stakeholders such as entrepreneurs, industry, exporters, policy makers, government and existing institutions. NIFTEM being an apex institution under Ministry of Food Processing Industries (MoFPI) has developed strong linkages with industries. The academic courses like B.Tech. (Food Technology and Management), M.Tech. in five specialized areas, Ph.D. and M.B.A (Food & Agri-Business Management) are run at NIFTEM. <http://www.niftem.ac.in/>

### **About FSSAI**

The Food Safety and Standards Authority of India (FSSAI) has been established under Ministry of Health and Family Welfare, Government of India, for laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption. The Food Safety and Standards Act, 2006 (FSS Act) was operationalised with the notification of Food Safety and Standards Rules, 2011 and six Regulations w.e.f. 5th August, 2011. In order to fulfill its large mandate, FSSAI has built effective alliances with other organizations and created network of relationships with organizations like NIFTEM, CHIFSS and other institutions of national importance. <https://www.fssai.gov.in/>

### **About CHIFSS**

CII-HUL Initiative on Food Safety Sciences (CHIFSS) was set up by Confederation of Indian Industry (CII) in financial and technical partnership with Hindustan Unilever Limited (HUL) with the purpose of 'Driving activities related to science based food safety' in the country by engaging with all relevant stakeholders. CHIFSS operates in technical collaboration with FSSAI. <http://www.chifss.in/>