

Online Presentation for UGC Standing Expert Committee (May 6, 2020)



National Institute of Food Technology Entrepreneurship and Management

A Deemed to be University (De-Novo Category) under Section 3, UGC Act, 1956 &
An Autonomous Institution under Ministry of Food Processing Industries, GoI
Kundli, Sonipat, Haryana

NIFTEM Background

- It was setup by MOFPI upon **persistent demand for** solving the following problems **of the Food Industry** and act as **one stop solution provider**:
 - Lack of **qualified and skilled manpower**.
 - **Research** to solve industry problems.
 - Development of **value added food products**.
 - Development of **new technologies/ equipments**
 - Dissemination of **lab proven technologies**
 - **Entrepreneurship development – a key for the growth of the industry**

Vision

*'To be a **centre of excellence** which integrates all facets of **Food Technology, Entrepreneurship & Management** and be recognized as the **focal point** for **catalyzing** the **growth** of the Indian food processing industry in the global context.*

Mission

- 1) To produce **business leaders**, develop **globally competitive processes and technologies** and **international best practices** in the area of **food technology, entrepreneurship and management**.
- 2) To carry out **R&D in frontier areas**, **develop world – class technologies** and **assist the Government** in **policy making** on food processing.
- 3) To be a **premier academic institution** in the areas of **food technology, entrepreneurship and management**, to offer **courses and training programmes** of **global standards**.

Deemed - to - be University

- MHRD declared NIFTEM a **Deemed to be University** under De Novo Category in May **2012**.
- **De-Novo Category** Mandates to work in **Emerging Areas of Knowledge with TECHNO MANAGERIAL APPROACH**
- **First University** of its kind **in India** under **De-Novo Category** after **notification of UGC Regulations** for Deemed-to-be Universities **2010**.
- **AICTE** Approved Programmes.

NIRF Ranking


(Engg Category)

➤ 2019 : 117

➤ 2018 : 101-150

➤ 2016 : 50 (Overall)



Academic Structure: Programme, Departments & Divisions

Programmes	Departments	Divisions / Centers
1. B. Tech (2012-13)	1. Department of Food Science and Technology	1. Skill Development Division
2. M.Tech (2012-13) (FSCM, FSQM, FPEM, FPOM & FTM)	2. Department of Food Engineering	2. Consultancy Division
3. MBA (2016-17) Food Busi. Mngt.	3. Department of Basic and Applied Sciences	3. Centre for Entrepreneurship Development
4. Ph. D (2013-14)	4. Department of Agricultural and Environmental Sciences	4. Corporate Resource Division
	5. Department of Food Business Management	
		Centre of Excellence of Cold Chain Tech Mangt.

ICT for Effective Teaching Learning

- **Digital Podium** installed in classroom
- **Internet:** internet connection of 1GBPS in the entire campus
- **Software:** MATLAB, SPSS, Sigma Plot 14, Origin 7.0 and Other software i.e. Design Expert are in process to procure.
- **Language /Communication lab** – with advanced audio video system
- **Online course delivery module:** NIFTEM supports online teaching learning process through i-Campus/ Website.
- **Academic ERP:** i-Campus to support students and faculty members.
- **Automation of examination system** - Mid-term/end term examination and evaluation will be carried out online.
- **File Tracking system**
- **Complaint Management System**

Students International Exposure

Universities / Institutes / Country	Year	Students Aailed		
		B. Tech	M. Tech	
Purdue University , USA	July, 2017	10	2	
Agriculture and Agri Food Canada, Saint Hyacinthe and Guelph, Canada	July 2018	3	4	
Agriculture and Agri Food Canada, Saint Hyacinthe and Guelph, Canada	July 2019	3	5	
		MBA Immersion Programme		
AIT, Thailand	11-22 February, 2018	15		
World Horti. Centre and Wageningan University, Netherlands	2-11 April, 2019	29		
University of Melbourne, Australia	9 -16 June, 2019	20		

Workshops and Trainings

Activity	Duration	2018	2019
Training	3 days	1	-
	2 days	1	3
Workshops	1 day	2	2
	2 days	3	7
	3 days	2	-
Seminar	1 day	1	-
	Total	10	12
	Overall Total		22
Induction for UG /PG	21 days /1 day	1	1

Food Processing

Food safety

Cold Chain
Management

Research &
Data Analysis

Internet of
Things

Intellectual
Property Rights

Communication
Skills

Infrastructure at *Platinum Rated* *Green Campus*



- Auditorium (1), Seminar Halls (4)
- Lecture Halls (5), Class Rooms (9), Tutorial rooms (6) Training Room (03)
- Laboratories (14), Central Instrumentation Laboratory (1), Small Animal House (01)
- Hostels (03 for boys & 01 for girls), Common rooms (2), Gym (01)
- Residences (68), Studio apartments (24), Porta Cabins (42 rooms), International Guest House (20 Seater)
- Basket Ball Courts (02), Badminton Courts (04), Volleyball Courts (02), Lawn Tennis Courts (02), Cricket Net practicing Pitch (01), Table Tennis (03)
- Bank, Post Office, Dispensary, 24 hours Ambulance and a Shopping centre etc.
- 24 hours power backup and Wi-Fi campus

NIFTEM Knowledge Centre

➤ State-of-the-art NIFTEM Library - a fully automated multi-level five storey 5474.29 Sqmt is housed in aesthetically designed boat shaped signature building of the NIFTEM campus. NKC is currently functioning on ground and first floor.

- NKC Web-OPAC
- NKC has implemented 3M's EM-RFID for security system.
- Self issue/return facility
- E – Reservation facility for books.
- VTLS ILM Software
- **Monday to Sunday:** 9.00 AM to 10.00PM
- **Before 15 days of exam** and during exam: 9.00 AM to 12.00 A.M. midnight.



- NKC News Alert : Bimonthly basis
- Newspapers-Clippings Service: Daily basis
- Database Access & Retrieval
- Online Public Access Catalogue
- Remote access through Ezproxy
- Turnitin anti-plagiarism database service
- Resource Sharing and Networking
- Organization of Book Exhibition
- Technical Demonstration
- User Education etc.

24*7 Access of NKC web OPAC from anywhere <http://nkc.niftem.ac.in:8080>

The *Campus*



- Rich in amenities & neighborhood facilities i.e. crèche
- 800 sitting capacity Auditorium
- Dedicated Student Activity Centre
- 2 MW Solar Power – Roof Top
- Effluent Treatment Plant , STP, waste Mngt System,



Research @ NIFTEM

❖ Criteria for Research

- Innovative
- For public good
- Solve Industry problem

❖ Research Programmes

- M.Tech & B.Tech Research Programs : 6 months - one year
- Ph.D Research Programme : 36 Months
- Internally/ Externally funded Research projects (For faculty)
- Innovation fund scheme for NIFTEM students (M.Tech & B.Tech)
 - Provide students support & platform for realization of innovative solutions to Food processing industries
- Status papers related to aspects of food processing industry
 - An initiative of collecting authentic information on identified important issues to help various stakeholders of the food sector.
- Industry collaborative projects
- Projects under 'Make in India' program

Eco-systems for Research

15 well equipped laboratories with State of the art Equipment

Chem. & Bio-Chem, Microbiology, Food Science & Tech., Food Engineering, Workshops, Electrical & Electronics, Animal product technology, Dairy Engineering,

Central Advanced Analytical Instrumentation (GC, HPLC, GC-MS, ICP-OES, AAS, CHNS, DSC, TGA)

Dedicated Research Lab

**International Centre of Excellence
for Food Safety and Quality –
a state- of- the- art *NABL* Food Testing
Lab**

**International Bakery Research and
Training Centre (IBRTC)**

Pilot Plants- to serve as
incubation centres for
providing Incubation
facilities to new
Entrepreneurship as well
as existing food Industry.
***F&V, Meat and Poultry,
Milk & Dairy Products,
RTE, Traditional Food***



Eco-systems for R&D at NIFTEM



Extramural Grants

International

- International Collaborative project with Stellenbosch University, South Africa Under DST Bilateral Exchange Grant: Rs 42 lacs (2016-2020)
- Indo-Ethiopia Programme for Strengthening Sustainable Energy Centre of Excellence in Ethiopia (Rs 40.68 lacs) (2018-19)
- Food Testing lab under MoFPI / ICAR Scheme : Rs.8.90 Crore
- ICAR: Rs. 65.00 Lakh for Primary Processing Centre.
- National Horticulture Board (NHB) : Rs 3.0625 Crore
- Mission for Integrated Development of Horticulture: National Horticulture Mission (NHM) : Rs.1.55 Crore
- Research Projects: 10 (worth Rs 5.23 Crore)

Institutional Projects

- Internally Funded projects: 4 (Budget allocated in 2019-20 was Rs 1 Cr.)
- PDA of Rs 3 lacs as seed money for initiating research by faculty members
- Projects under Innovation Fund: 9 (Completed 5)
(Maximum upto Rs.15.00 lakh per project)

ON GOING EXTERNALLY FUNDED PROJECTS

S. No.	Title of project & Highlights	Cost (In Rs)/ Funding agency
1	Setting up of Kerala Nutrition Research Centre (KNRC) at Thiruvananthapuram, A joint Initiative of NIFTEM, deemed to be University under MoFPI and WCD, Govt. of Kerala.	41.99 Lakh / WCD, Kerala
2	Studies on Physico-Chemical And Nutritional Characteristics of Underutilized Millets (Kodo And Kutki) and development of value added products.	105.58 Lakh Tribal Affairs, MP, Govt
3	Effect of thermal processing on proximate composition and antioxidant activity in India edible brown seaweed sargassum wightii and development of nutraceuticals and functional food from it	Rs. 35.86 Lakh / MoFPI, Govt. of India
4	Development of Course Content and Learning Material for 13 selected Job Roles in Food Processing	97.5 Lakh/ MoFPI
5	Designing Extrapreneurial Policy FramDework for Smart Eco-Social Villages Development	5lakh /ICSSR
6	Off-grid, clean energy cooling for affordable storage of perishables for BOP farmers	37 lakhs/ USAID
7	Social Entrepreneurship: Impact Assessment	10.0 lakh /ICSSR New Delhi
8	Development of Instant Probiotic Fruit Juice Powder	37 lakhs/ MoFPI
9	Evaluation of biofilm antimicrobial property of natural compounds against food borne pathogens	Rs 35.0 lacs/ SERB/ DST
10	Synthesis and evaluation of alginate-chitosan microcapsules for targeted delivery of vitamin B12 producing probiotic strain: in vitro and in vivo approach	Rs. 35 lakh/ DST
11	Development of protocol for reduction of acrylamide levels in selected potato based snack foods	37 lakhs /MoFPI

Publications & Patents

Year	No. of Publications
2012	1
2013	6
2014	10
2015	12
2016	16
2017	23
2018	24
2019	47
2020	18
TOTAL	157



Patents

- Patent has been filed and accepted
“Co-precipitation synthesis of economical, layered silver-iron oxides nano-composites for rapid killing of bacterial pathogens”
- Patents under process
 - Multi utility storage cabinet.
 - Water extractor from mature coconut.
 - Gehwar batter preparation machine.
 - Design and fabrication of low cost meat storage structure for local vendors to ensure quality meat.
 - New method for sugarcane juice preservation

Only Scopus Indexed Publication are given

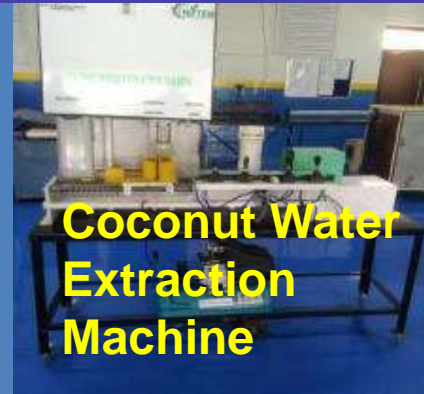
Technologies / Products Developed

1. Enzyme-free optical nano-biosensor for the detection of l-lactate in food samples
2. Label-free nano-sensor for total aflatoxins in food
3. Development of cellulose nano-whiskers based biodegradable food packaging material using agro waste (potato peel)
4. Coconut water extraction machine
5. Linus domestic refrigerator
6. Evacuated tube solar dryer
7. PCM assisted flat plate collector solar dryer
8. *Boondi* dispenser machine
9. NIFTEM advanced drying unit
10. Low cost meat storage structure
11. Protein rich granola bar
12. IBRTC developed healthy cookies 4 Muffins
13. High protein sugar free cookies
14. Multi grain muffins – Herbal cookies

New Equipment Developed for Product Commercialization



Ghewar butter making machine



Coconut Water Extraction Machine



Walnut Decorticator Sheller



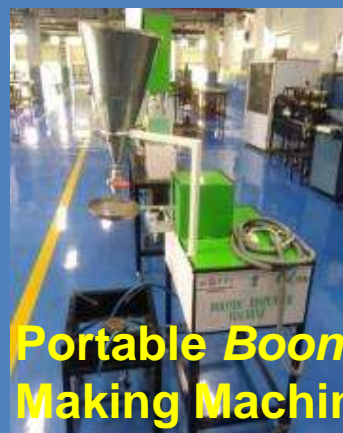
Kheer making machine



Low Cost Domesticator Refrigerator



Superheated Steam Dryer



Portable Boondi Making Machine



Parantha Making Machine



Food Grain Roster

Industrial Research/ Consultancy Projects

Sl. No.	Project Title	Funding Agency and year of funding	Project cost
1	Consultancy for Establishing Food Processing Plants at 7 locations in MP	M P Government, 2018	35 lakhs
2	Illrd party inspection of plant and machinery of Ghazipur Slaughter House and rendering plant	East Delhi Municipal Corporation and Frigirofico Allana Sons, 2017	2.0 Lakh+ Taxes
3	Extension of shelflife of <i>Dhal Badi</i>	Shraddha Foods, 2018	0.5 Lakh+ Taxes
4	Poly vinyl acetate as fruits and vegetable coating additive:	Jubilant Agri and consumer pd., 2019	4,13,000.00 (inclusive all taxes)
5	Quality control, Packaging and branding of selected food processing units under PMEGP	KVIC, Ambala, 2019	1.0 Lakh

Salient MoU's 2017-2020

- University of Melbourne, Australia
- Queen's University, Belfast, UK
- Agriculture and Agri-Food of Canada (“AAFC” - Canada)
- Wageningen University, The Netherlands
- Association of Lady Entrepreneurs of India (ALEAP)
- Indian Institute of Toxicology Research (IITR), Lucknow
- Danfoss Industries Pvt Ltd.
- Government of Himachal Pradesh for Horticulture Development Project
- Indian Institute of Packaging
- Bundelkhand University, Jhansi
- Lala Lajpat Rai University of Veterinary and Animal Sciences, Hissar
- Chandra Shekhar Azad University of Agriculture and Technology, Kanpur
- National Agri-food Biotechnology Institute (NABI), Mohali
- Women and Child Development Department, Govt. of Kerala
- All India Institute of Ayurveda, New Delhi
- National Institute of Solar Energy

Village Adoption Programme- *an Initiative to Empower Rural Entrepreneurship*

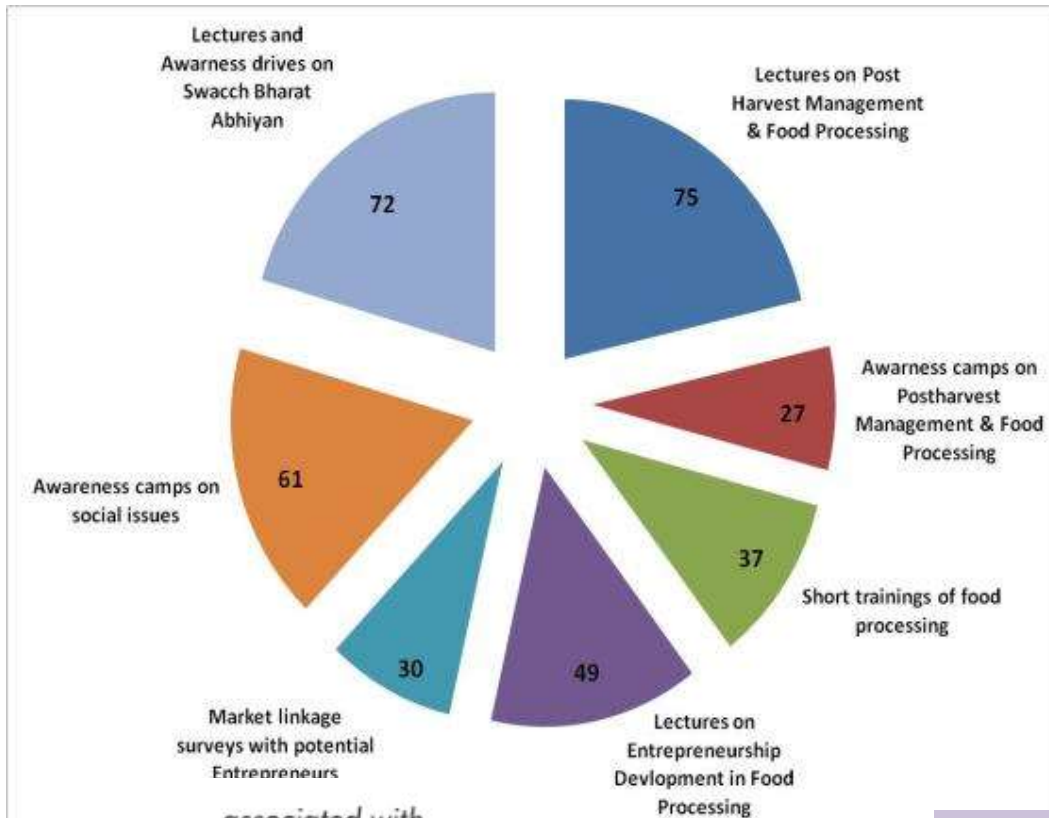
- NIFTEM initiated a **unique Nation Building Initiative** called the “Village Adoption Programme”.
- **Conceptualized for Linking Rural Entrepreneurs and Farmers to the Mainstream Economy**
- VAP implemented since **2012**.
- Aims to **help the Indian Food Processing Sector** accomplish its objective of **all-inclusive growth** and facilitate the process of integrating the underprivileged sections of our population with the mainstream economy.
- **Compulsory: part of B. Tech., M. Tech. & M. B. A. Course curricula** with four credits in one year and an induction course for students.

VAP Activities in Pictures



VAP: Salient Achievements

Various activities since 2017



associated with

SMARTGRAM

Pilot Project of Rashtrapati Bhavan



Awards & Honor

- Agricultural Leadership Award in Entrepreneurship Development in Food Sector (2015)
- Association of NIFTEM with Rashtrapati Bhavan's SMARTGRAM Project & adopted Five villages of Haryana
- 13th Standing committee of the Parliament on Agriculture and Food Processing appreciated VAP and asked to strengthen the programme

**Platinum Award 2020 from
HR Association of India for
Best Employability Initiative**



Achievements of Students

- Selected NIFTEM students invited to attend Republic Day Parade at Rajpath in 2016.
- Won 3rd Prize in National Student Research Convention (2016) in Basic Science Category.
- Bagged 1st and 3rd Prize at North Zone Student Research Convention, Anveshan – 2015 in Basic Science.
- NIFTEM Students secured 2nd Prize in International Convention of Pulses. The prize winning students invited to attend IFT Chicago convention.
- Prestigious National Citizenship Gold Medal award by GEPR.
- Students participated in AMATHEON (Cultural fest of IIM Ahmedabad) and won prizes.
- Students invited to chair sessions at Model United Nations (MUN)
- Selected NIFTEM Student Interacted with Hon'ble President of India on 10th August, 2016.

Landmarks on Entrepreneurship Development / Skilling

- E-Summit - 2020: *Entrepreneurship Summit 2020 saw participation of over 1500 delegates. Over 33 major events organised by CED in last three years.*
- Organic Food Festival for Women Entrepreneurs in Collaboration with MoFPI and MoWCD at JLN Stadium New Delhi 21-23 Feb 2020 (100 Women Entrepreneurs and 50 SHG participated)
- NIFTEM Food Festival at NIFTEM in Feb 2019
- NIFTEM is lead partner of Plant Food Group for Scientific Cooperation (NetSCoFaN) with 5 more support national instt
- "The Idea Machine " and " Value Innovation": Workshop
- Business Plan Bootcamp – by Mr.Pavan Soni, founder of start-up "Inflexion Point" and an adjunct faculty at ISB Hyderabad and IIM Bangalore
- Regularly Conducting trainings for FSSAI, KVIC, NHB, and state skill mission.
- NIFTEM being Institute of Repute; conducts all high end trainings like Training of Master Trainers, Training of Trainers, Training of Assessors, etc under PMKVY

Sl. No.	Type of Programme	No. of Beneficiaries (No. of Programme)			Total
		2016-17	2017-18	2018-19	
1	One day Outreach programme	4305(15)	404 (5)	202 (3)	4911(23)
2	One/Two/Four weeks Skill dev. Programme	431(9)	20 (1)	44 (4)	495(14)

NIFTEM Placement- The Journey of Success

(2014-2019)

Year	B.Tech (%)	M.Tech (%)	MBA (%)
2019	90%	95%	100%
2018	92%	100%	100%
2017	95%	95%	-
2016	100%	100%	-
2015	-	100%	-
2014	-	100%	-
Overall avg. %age	94.25%	98.33%	100%



Achievements Internship

- *All students are assisted for internship with reputed Industries.*
- *In 2019 total 138 companies across India offered Internship.*
- *Based on Internship performance, Pre Placement Offers are on increasing trend.*
- *On-Campus internships are also provided at Pilot Plants.*
- *Many M.Tech students get opportunity to complete their final projects at industry sites with extended internships.*



Future Plans and Major Initiatives

- **Academic plans:**

- Aspire for “Institute of National Importance” status
- Online teaching learning platform and exam system
- Launch of Certificate and Diploma courses
- Admission of International students
- Collaborations foreign Universities for Sabbatical Teaching
- To establish TBI and Contract Research
- New Degree/Diploma Programmes (in case INI)



- **Infrastructure development:**

- Establishment of a pilot plant for bakery and grain processing
- Development of advance research laboratories
- Second Phase Infrastructure : to construct Students Sports complex, Students Welfare Block, Lecture Complex and Residential Complex etc.

Details of budget allocations and Expenditure of NIFTEM during the last two year (2017-19) Including internal resource generation

Rs. In Crore

Year	Capital Budget	Capital Expenditure	Revenue Budget.	Revenue Expdr.
2017-18	15.00	15.99	21.00	33.48*
2018-19	58.20	53.01	19.75	34.29*

*The difference in expenditure is being met from internal resources.



Thank You