COVID-19 : Management Strategies

Webinar Dated 21st November 2020 from 3:00 PM IST

Dr Sulalit Bandyopadhyay
Post Doctoral Researcher
Department of Chemical Engineering
Faculty of Natural Sciences
NTNU

Prof. Brajesh Kumar Dubey
Associate Professor
Department of Civil Engineering
IIT Kharagpur
SESSION 1

Dr. Sulalit Bandyopadhyay

(COVID-19 Diagnostic Test: An Interdisciplinary Solution)

SESSION 2

Dr. Brajesh Kumar Dubey

(COVID-19 Waste Management, Challenges and Possible Solution)
Attendees:

SESSION BEGINS

Webinar session started with the welcome speech by Mr. Prabhat Kumar, Chair-NTNU Alumni India and Bhutan and Mr. Saud Afzal, Vice Chair-NAIB: There are about 100 + registered alumni located in India & Bhutan and they performing very well in their respective fields. The diaspora is spread in the field of Hydropower and Renewable Energy, Petroleum, Marine Science, Urban Planning, Architecture and more. It is an honor to bear the label of NTNU while acquiring professional degree just like adding gems to a queen’s necklace. NTNU has strong Research and education base and alumni can utilize connection with alma mater to outshine in their professional life. NTNU alumni have potential to co-operate and enrich their valuable knowledge and experience. The webinar session started with welcome of speakers and delegates.
SESSION 1

Dr. Sulalit Bandyopadhyay

(COVID-19 Diagnostic Test: An Interdisciplinary Solution)
I. COVID-19 Diagnostic Test: An Interdisciplinary Solution - Dr. Sulalit Bandyopadhyay.


b. In view of necessity and a challenges, NTNU development test kit crossing many obstacles like lack of time, approvals, Magnetic Beads Needed, Scalability, Collaboration, Testing, Validation, and Administrative Support & Facilities etc.

c. Department of Clinical and Molecular Medicine and the Department of Chemical Engineering of NTNU jointly developed Covid-19 detection test method which involves magnetic nano particles based detection of Covid RNA. In a time span of less than a month NTNU managed to complete whole process from testing till approval.

d. NTNU has successfully geared up and produced 5.1 million kits for Norway. Test kits have been sent to DTU and a manufacturing lab in India.

e. Proposals are in pipeline for partnership with many life science industries for Test-kits.

f. Secret behind achieving such a huge target is a team with a strong knowledge, collaboration & discipline. Which ideally NTNU has and it has been proved.

g. NTNU’s collaboration and work on the COVID-19 test is a good example of how new connections can help to solve social challenges in an effective way.
NTNU
Norwegian University of Science and Technology

Challenges
- Shortage of Kits
- Magnetic Beads Needed
- Scalability?
- Timelines
- Collaboration – Testing – Validation
- Technical Support
- Administrative Support
- Personnel
- Facilities
- Responsibilities
- Ambitions

Timeline

Media Attention

Routes of Distribution

Why did we succeed?
Cross-disciplinary teams with strong experience and excellent collaboration

Corona Team

Production Volumes
SESSION 2

Dr. Brajesh Kumar Dubey

(COVID-19 Waste Management, Challenges and Possible Solution)
COVID-19 Waste Management, Challenges & Possible Solution - Dr. Brajesh Kumar Dubey, IIT-Kharagpur

a) As always the concept of managing waste is Recycle-Reduce-Reuse.

b) It is shocking to know that globally municipal solid waste is about 2.01 billion tons annually.

c) If we don’t apply the formula of RRR i.e. (Recycle-Reduce-Reuse). Then by year 2050 we have to be ready to bear the load of waste of about 3.4 billion tons.

d) Solid waste consists of metal, glass, plastic, paper products and foods. Hence we have to reduce it systematically without effecting human life style and comforts.

e) Segregation of Wet and Dry waste is the key for effective disposal. Making curry of it will create mess and will land the whole thing into jig saw which is very tough to solve.

f) COVID-19 waste management needs to be implemented on high priority basis. As the COVID-19 RNA lifecycles varies from material to material. Hence it involves volunteer especially our youths with immense knowledge of handling it and resources to dispose it. It is duty of every individual to work on it and simultaneously educate others as well.
Waste Management during Covid-19 - Challenges and Possible Solutions

NTNU Alumni India-Bhutan Webinar

Brajesh Kumar Dubey, PhD
Associate Professor
Environmental Engineering and Management Division
Department of Civil Engineering
Indian Institute of Technology Kharagpur

Implications of COVID-19 on Solid Waste Management

Major impact categories
1. Safety of SWM Sanitation workers
2. Redistribution of waste production
3. Changes in waste treatment activity
4. Increased generation of municipal waste making it financially and physically challenging for municipalities to cope
5. Solid and liquid enterprises (SDLs) are being uprooted

WHAT A WASTE 2.0
A Global Snapshot of Solid Waste Management to 2050

The world generates 2.01 billion tonnes of municipal solid waste annually. Unless urgent action is taken, global waste will

Main Types of Waste Generated

Regional Waste Generation (Annually)

East Asia & the Pacific

1.488 million tonnes
2.979 million tonnes

North America
4.868 million tonnes
19.841 million tonnes

South America
1.656 million tonnes
17.341 million tonnes

Africa
1.281 million tonnes
15.541 million tonnes

Europe & Central Asia
1.136 million tonnes
13.741 million tonnes

Solid waste management trends during the COVID-19 crisis

For effective waste disposal, segregation is the key

The Economic Times

By Brajesh Dubey

Segregation is one of the most important activities that we need to promote and enforce for effective waste management in urban areas and its rural habitat. Unless we take concrete and effective action, the situation will get worse. To combat the problem of segregation, India needs a comprehensive mechanism.

For the waste that cannot be recycled or treated, we need to ensure proper waste management. Waste management is not a one-time activity. It is a continuous process. Solid waste management cannot be reversed. If we do not take action now, it will be too late to make a difference.

We don’t have the technology to recycle and treat all the waste that we produce. Therefore, for the waste that cannot be recycled or treated, we need to ensure proper waste management. It is a continuous process. If we do not take action now, it will be too late to make a difference.

Segregation of waste components should be encouraged at source. The new MWM rules 2019 do not require that waste management should be implemented at source segregation. If you and I separate segregation at our homes, we can ensure that the waste gets segregated before it reaches the treatment plant. There is no point in doing source segregation. Also, educating people to do source segregation at home.

63rd edition - 2023
II. Listeners took keen interest in both the session however session-2 was enjoyed by everyone by putting questions and suggestions. Webinar ended with inputs and ideas of Mrs. Rita Kumar & Vote of thanks by Mr. Aravind Kumar Agrawal.

a) This kind of seminar should be conducted regularly as said by Mrs. Rita Kumar.

b) Efforts of Dr. Sulalit & Dr. Dubey was appreciated for presenting such a great session and full of information. Thanks to all the Board Members, Organizers and everyone who attended the webinar and made it successful.

c) Mrs. Rita offered thanks and gratitude to Prof. Saud Afzal & Mr. Prabhat Kumar.

**SOME INTERACTIONS**

| Mrs. Amritha Ballal | Mrs. Rita Kumar | Mr. Prabhat Kumar | Mr. Saud Afzal |