



Alumni – India and Bhutan



COVID-19 : Management Strategies

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



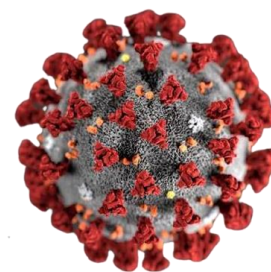
Dr Sulalit Bandyopadhyay

Post Doctoral Researcher
Department of Chemical Engineering
Faculty of Natural Sciences
NTNU



Prof. Brajesh Kumar Dubey

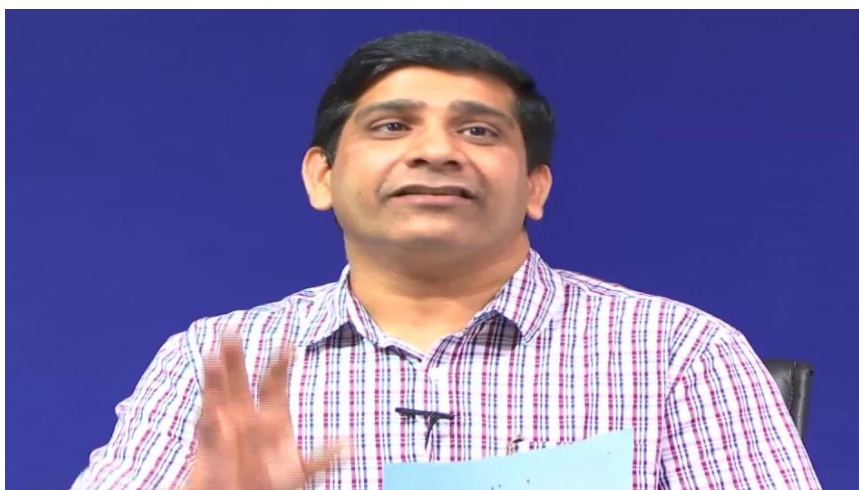
Associate Professor
Department of Civil Engineering
IIT Kharagpur



SESSION 1

Dr. Sulalit Bandyopadhyay

(COVID-19 Diagnostic Test: An Interdisciplinary Solution)

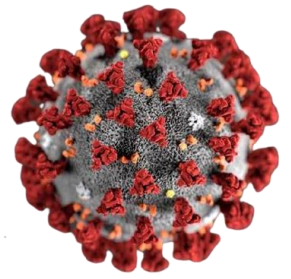


SESSION 2

Dr. Brajesh Kumar Dubey

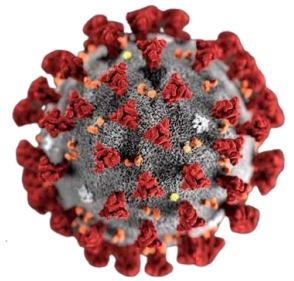
(COVID-19 Waste Management, Challenges and Possible Solution)





Attendees:

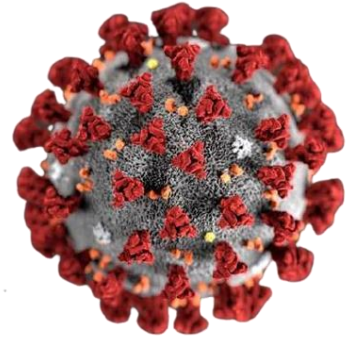
Nipurn Sarbhai, Shilpa Mishra, **Rita Kumar**, Zaid Siddiqui, Capt. Sanjay Tyagi, Tusshar, Amit Kumar, Faizan Khan, Rajesh Chaudhary, Sunil Mandal, **Saud Afzal**, P Kumar, PSarin, Nandini Gupta, Lalit Kumar, HUMAID, Misbah Rufaida, R. Soni, PRAMOD KUMAR RAM, Afreen khan, Aiman, Sunita Tyagi, **Brajesh Dubey**, Rishabh, Debasish, Anubha Putatunda, Ainal Hoque Gazi, Sirsha Bandyopadhyay, Afreen, Zainul, Arijit Pradhan, AK Agrawal, Girija. T.R, **Venugopal**, **Sulalit Bandyopadhyay**, Suditya Sinha, Shekhar Gautam, Shaik Firoj, **Prabhat Kumar**, **Aravind K. Agrawal** & More.



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.



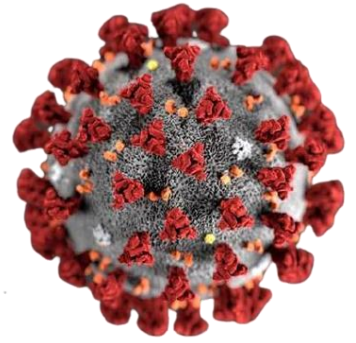


SESSION 1

Dr. Sulalit Bandyopadhyay

(COVID-19 Diagnostic Test: An Interdisciplinary Solution)

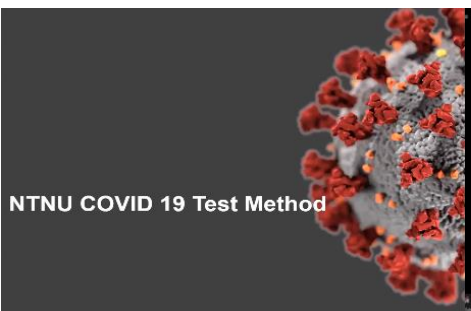
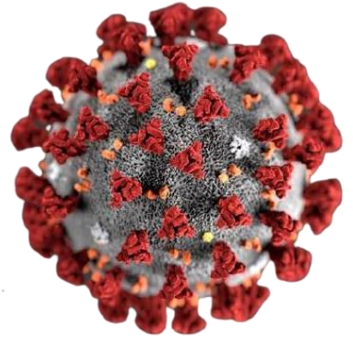




i. COVID-19 Diagnostic Test: An Interdisciplinary Solution - Dr. Sulalit Bandyopadhyay.

- a. Norway went into lockdown on 12th March 2020.
- 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.

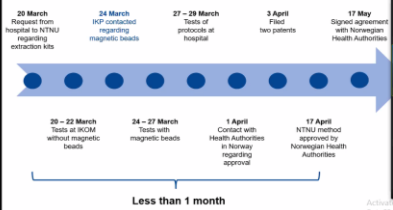




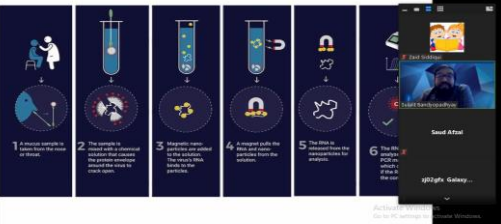
Challenges

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

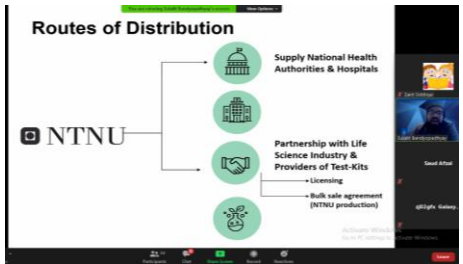
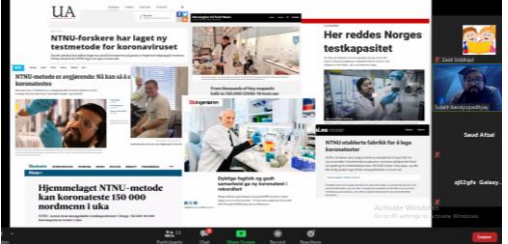
Timeline



How the Test Works?



Media Attention

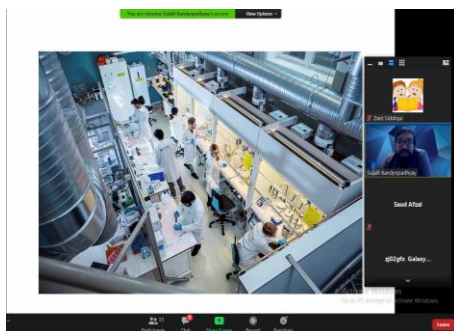


Why did we succeed?

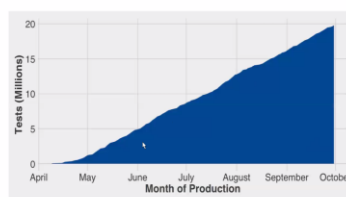
Cross disciplinary team with strong expertise and excellent collaboration

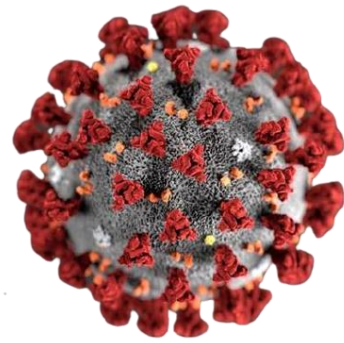


Corona Team



Production Volumes



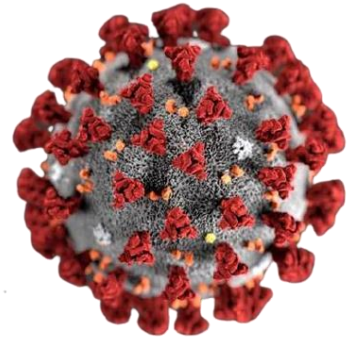


SESSION 2

Dr. Brajesh Kumar Dubey

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

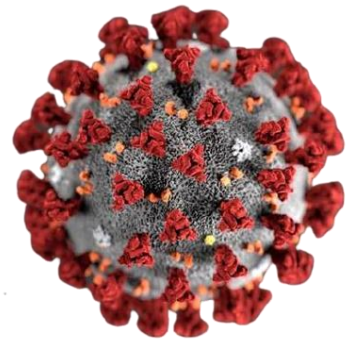




COVID-19 Waste Management, Challenges & Possible Solution - Dr. Brajesh Kumar Dubey, IIT-Kharagpur

- 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.






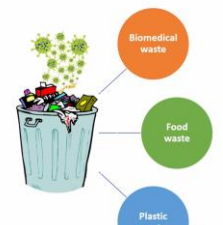

Waste Management during Covid-19 - Challenges and Possible Solutions
NTNU Alumni India-Bhutan Webinar




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

- Safety of SWM sanitation workers
- Redistribution of waste production
- Changes in waste treatment activity
- Increased generation of municipal waste has made it financially and physically challenging for municipalities to cope.
- Small and medium enterprises (SMEs) are being squeezed


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


Itendra Kumar
Dr. Shweta Tyagi
Capt. Sanjay Tyagi
Sumita Tyagi

METAL 4% GLASS 5% PLASTIC 12% PAPER/CARDBOARD 17% FOOD/ GREEN 44%


MAIN TYPES OF WASTE GENERATED

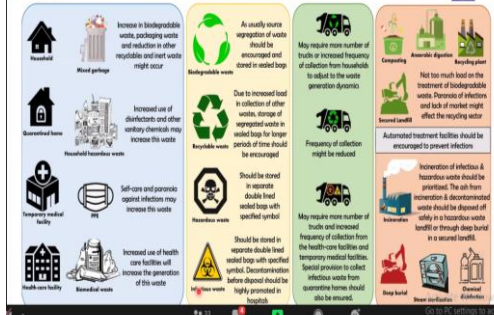
REGIONAL WASTE GENERATION (ANNUALLY)

EAST ASIA & THE PACIFIC	EUROPE & CENTRAL ASIA	SOUTH ASIA	NORTH AMERICA	LATIN AMERICA & THE CARIBBEAN	SUB SAHARAN AFRICA	MIDDLE EAST & NORTH AFRICA
468 million tonnes	392 million tonnes	334 million tonnes	289 million tonnes	231 million tonnes	174 million tonnes	129 million tonnes


Waste management priorities during the pandemic.




Solid waste management trends during the COVID-19 crisis




For effective waste disposal, segregation is the key

BY ET CONTRIBUTORS | JAN 13, 2019, 11:30 PM IST

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 to make landfills reduce in size gradually and finally come to no landfills in four-five decades from now. Even in Western Europe where they have been working on developing a scientific waste management systems for the last 30 years or so, nearly one-third of waste is still going to the engineered landfill. In India, too, we cannot have "zero" landfill or "no" landfill overnight. This is not a realistic expectation.

We don't have the technology to recycle and/or treat all the waste that we produce. Therefore, for the waste that cannot be recycled or treated, we do need a resting place, and that is usually an engineered landfill in developed countries. Even 100% residual from waste incinerators cannot be reused, only few countries are using the ash from waste-to-energy plants and even in those cases they have to discard some of the ashes in landfills.

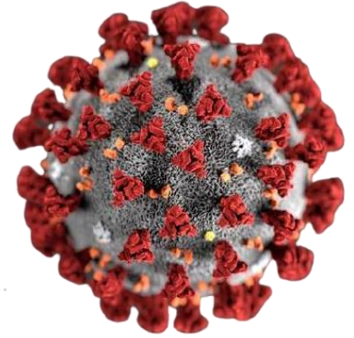
Segregation of waste components should be encouraged at source, the new MSW rules 2016 do that. What we need is to build capacity at the municipal level to enforce and implement source segregation. If you and I do source segregation at our homes but they get mixed up in the collection vehicle along the route to treatment plant, there is no point of doing source segregation. Also, educating people to do source segregation at home



Segregation of waste components should be encouraged at source, the new MSW rules 2016 do that.

Related

- How to make Waste-to-Wealth a reality
- Big Change: The end of Five-Year Plans: All you need to know



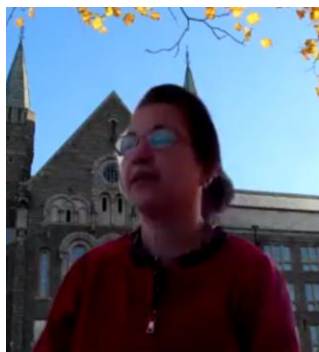
II. Listeners took keen interest in both the session however session-2 was enjoyed by everyone by putting questions and suggestions. Webinar ended with inputs and ideas of **Mrs. Rita Kumar** & Vote of thanks by **Mr. Aravind Kumar Agrawal**.

- 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

