

Event Activity Report**2021-2022**

School Name	: School of Science
Event Title	: International Conference on “Current Trends in Waste Treatment, Reuse and Valorization”
Event Date	: 25.02.2022 to 27.02.2022
Time	: 09:45 am to 06:00 pm
Duration in days	: 3 Days
Mode of conduction	: Online
Level of Program	: International
Event Resource Person Details	: Dr. Sachin Munde, Associate Dean, School of Science, Sandip University, Nashik. (Mob: 8007806419) Email: deansci@sandipuniversity.edu.in
Name of Event Coordinator with details	: Dr. Razia Kutty, Head, Dept of Microbiology and Life Science, Sandip University, Nashik. Mob: 9822794581 Email: razia.kutty@sandipuniversity.edu.in
Number of participants attended	: 160+

Event Outline, Objective and Outcome of the event:**Outline of Program:**

Sandip University’s School of Science had taken initiative to host an International Conference regarding “Current Trends in Waste Treatment, Reuse and Valorization” in association with Society for Green Environment, New Delhi, India. The Themes to be discussed in the conference were:

- Emerging Pollutants Characterization
- Current trends in physicochemical methods of remediation
- Microbial remediation
- Hybrid treatment technology in remediation
- Pollutant removal from bio-waste, reuse & recovery of value-added by-products

The conference was hosted for 3 days. Many eminent Speakers were called for the expert talks from India and Abroad. Also, the international e-conference invited abstracts from the delegates. The conference solicited high quality research contributions in the areas of Bioremediation and Waste Reuse and Valorization. Selected abstracts were to be published as proceedings/souvenir.

Objective of Program: The School of Science intended to raise knowledge and create awareness in the society in association with the Society for Green Environment about conservation, reuse and management of all form of air, water, and soil waste. The Society for Green Environment (SGE) is a non-profit, non-government, multi-disciplinary membership based-national organization of Government of India, and principally dedicated to the enhancement of public awareness on conservation and up-gradation of environment and management of all form of air, water, and soil for the development of the happy and healthy society. The society is involved in various activities conducting organizing national/ international conferences, symposia, conferences, workshops, seminars, training, meeting as well as distributing publications on the theme of environmental concern. Society also recognizes young scientists and environmentalists for their contribution to environmental protection and safety.

Outcome:

Day 1: The conference was inaugurated by Dr. Rajendra Sinha, Vice Chancellor, Sandip University, Nashik following addressed by Dr. Chetan Choudhary, Registrar, Sandip University. Dr. Pankaj Chowdhary, President, Society of Green Environment, New Delhi, India briefly introduced with the SGE. Prof. Sunil Kumar, Professor and Head, Waste Water Reprocessing Division, CSIR-NEERI, Nagpur, Maharashtra, India was invited as the keynote speaker. The Session for keynote speaker was chaired by Dr. Raunak Dhanker Assistant Professor, GD Goenka University, Haryana, India.

Sr.No.	Name of the Speaker	Title of Talk
<p>Moderator: Ms. Manasi V. Damale, Assistant Professor, Department of Microbiology, School of Science, Sandip University, Nashik.</p> <p>Session Chair: Dr. Ravikiran Pagare, Associate Professor, Department of Life Science, School of Science, Sandip University, Nashik</p>		
1	<p>Dr. Garima Kaushik, Assistant Professor, Central University of Rajasthan, India</p>	Bioremediation of Emerging Contaminants: Pharmaceutical Compounds
2	Dr. Jastin Samuel	Phyco-remediation: A green approach and Sustainable Solution
3	<p>Dr. Srijoni Banerjee, Assistant Professor, Department of Biotechnology, School of Life Science and Biotechnology, Admas University, Kolkata</p>	Sustainable Approach of Microalgal Biomass and Biofuel Production through Biorefinery Approach with Concomitant Wastewater Remediation
<p>Moderator: Ms. Muskan D. Sharma, Assistant Professor, Department of Microbiology, School of Science, Sandip University, Nashik.</p> <p>Session Chair: Dr. Sachin Munde, Associate Dean, School of Science, Sandip University, Nashik</p>		

4	Prof. V. P Sharma Chief Scientist & Prof. AcSIR CSIR-Indian Institute of Toxicology Research, Lucknow, India	Safeguard Future Generation: Emerging Pollutants and Waste Management
5	Prof. (Dr.) Dinesh Yadav Professor Coordinator Centre for Genomics & Bioinformatics and Nodal officer IPR cell Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, Uttar Pradesh, India	Cost Effective Production of Industrially Important Microbial Enzymes Using Agro-Wastes
6	Prof. Cristiano José de Andrade Professor Department of Chemical Engineering and Food Engineering, Federal University of Santa, Catarina, Florianópolis, 88040-900, SC, Brazil	Hydrophobic Inducers to Enhanced Surfactin Production Using Cassava Wastewater as Low- Cost Culture Medium: A Prospection on New Homologues

Speaker's Sessions followed Oral/Poster Presentation of Students from different Universities and Colleges.

Day 2:

Sr. No.	Name of the Speaker	Title of Talk
Moderator: Ms. Purnima Bhagwat, Assistant Professor, Department of Chemistry, School of Science, Sandip University, Nashik.		
Session Chair: Dr. Leena Patil, Head of Department of Chemistry, School of Science, Sandip University, Nashik.		
1	Dr. Bholu Ram Yadav Scientist CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur, Maharashtra, India	Digitalization in Wastewater Management
2	Dr. Angana Sarkar Assistant Professor National Institute of Rourkela, Odisha	Microbial Dye Degradation: A Clean Approach Of Dye Removal From Pharmaceutical Wastewater
3	Dr. Sukdeb Pal Sr. Principal Scientist Wastewater Technology Division, CSIR- National Environmental Engineering Research Institute, Nagpur 440020, India	Inorganic Nanostructure For Multifunctional Applications In Water Treatment
4	Dr. Achlesh Daverey Assistant Professor Doon University, Uttarakhand	Valorization of waste pine needles for environmental remediation
5	Dr. N.K.S. More Assistant Professor Babasaheb Bhimrao Ambedkar University, Lucknow, India	
6	Dr. Dipankar Ghosh	Systems Biology Approach to Screen and Identify

		Algal Phosphatases for Detecting Heavy Metals: A sustainable platform
<p>Moderator: Ms. Savita Patil, Assistant Professor, Department of Chemistry, School of Science, Sandip University, Nashik.</p> <p>Session Chair: Dr. Nissar Reshi, Assistant Professor, Department of Life Science, School of Science, Sandip University, Nashik</p>		
7	<p>Dr. Kuldeep Boudh Assistant Professor Central University of Jharkhand, Ranchi, India</p>	Remediation of Metal Contaminated Soil using an Industry Important Plant <i>Ricinus communis</i>
8	<p>Dr. Sourish Bhattacharya Senior Scientist Process Design and Engineering Cell, CSIR-Central Salt and Marine Chemicals, Research Institute, Bhavnagar, India.</p>	Circular Economy Model for Bioremediation Of Industrial Wastewater Through Biorefinery Approach
9	<p>Dr. Simranjeet Singh Postdoctoral Researcher, Indian Institute of Science (IISc), Bangalore-560001, India</p>	Adsorption, Kinetic and Thermodynamics Behavior of Cr (VI) by novel GO/UiO-66-NDC Nanocomposite from Wastewater
10	<p>Dr. Soumya Pandit Assistant Professor Lovely Professional University, Punjab</p>	Investigating the Performance Of Datura Peels Derived Biochar-Based Anode For Improved Power Output In A Microbial Fuel Cell Application

Speaker's Sessions followed Oral/Poster Presentation of Students from different Universities and Colleges.

Day 3:

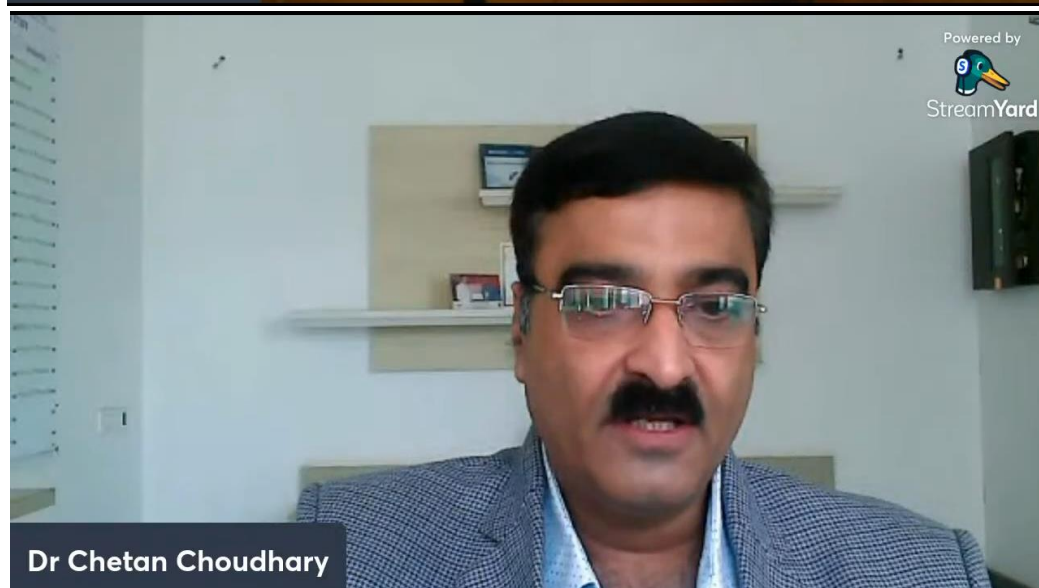
Sr. No.	Name of the Speaker	Title of Talk
<p>Moderator: Ms. Vishakha G. Tomar, Assistant Professor, Department of Microbiology, School of Science, Sandip University, Nashik.</p> <p>Session Chair: Dr. Ravikiran Pagare, Associate Professor, Department of Life Science, Sandip University, Nashik</p>		
1	<p>Prof. (Dr.) Vinod Kumar Garg Professor and Dean Department of Environmental Science and Technology Central University of Punjab, Bathinda, Punjab, India</p>	Nutrient Recovery From Solid Wastes Using Verm technology
2	<p>Dr. Sudipti Arora Scientist and Assistant Director, Dr. B. Lal Institute of Biotechnology, Jaipur</p>	Potential of Earthworms In Removal Of Antimicrobial Resistant (AMR) Bacteria And Antibiotic Resistance Genes (ARGS) During Verm filtration Technology For Domestic Wastewater Treatment

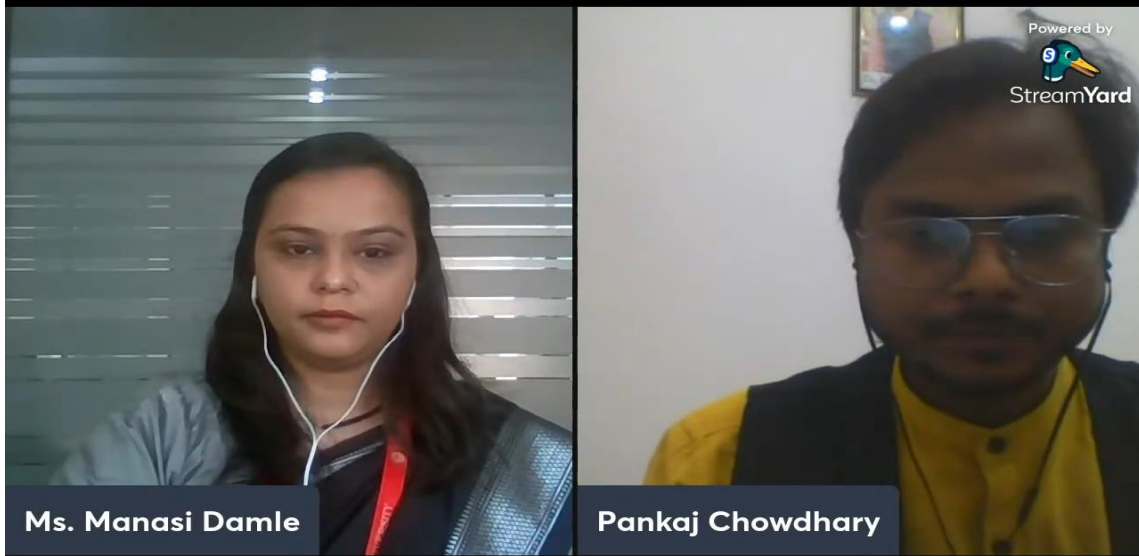
3	Dr. Ritu Singh	Application of Nanotechnology in Environmental Remediation
4	Dr. Sonia Maurya Assistant Professor, Lovely Professional University, Punjab	Valorization of Food Waste and Value Addition
5	Dr. Abhay Raj Principal Scientist CSIR-Indian Institute of Toxicology Research (CSIR-IITR), Lucknow, India	Exploring the Sustainable Approach Towards Bio mitigation of Contaminants in Paper Industry Effluents

Speaker's Sessions followed Oral/Poster Presentation of Students from different Universities and Colleges. The Valedictory Function was addressed by Dr. Razia Kutty, Head of Department of Microbiology and Life Science.

The team School of Science extended great support in hosting and smoothly conducting this International e-conference.

Event photos/ Screenshots such as (photos of Inauguration, felicitation, event conduction and valedictory ceremony:





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Solid Waste Management and Circular Economy: Challenges and Strategies

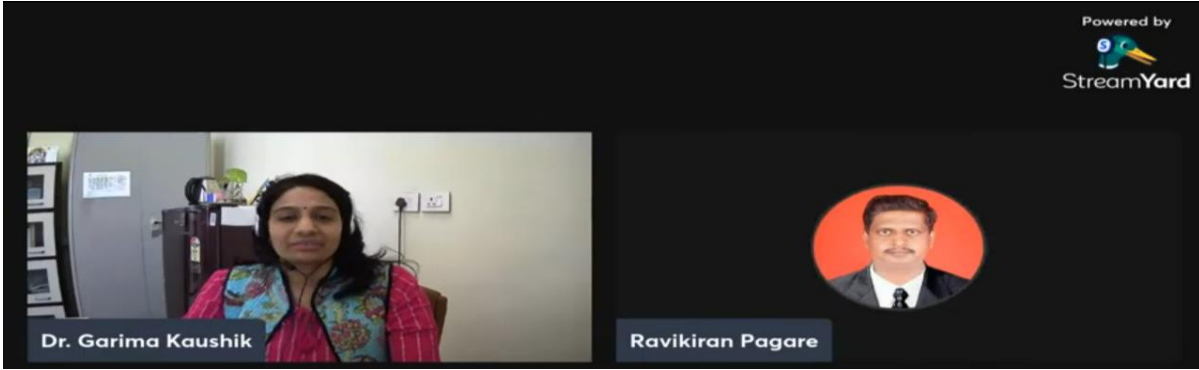
by
Dr. Sunil Kumar
Senior Principal Scientist and Head
Waste Re-processing Division
CSIR-National Environmental Engineering Research Institute
(CSIR-NEERI), Nagpur, Maharashtra, India



Dr Vineet Kumar

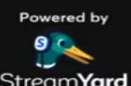
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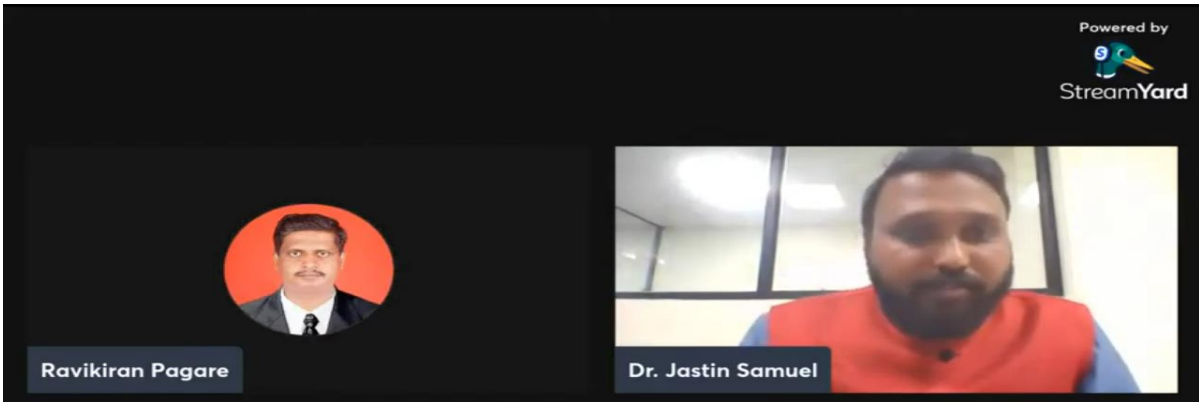
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Dr. Garima Kaushik


Ravikiran Pagare

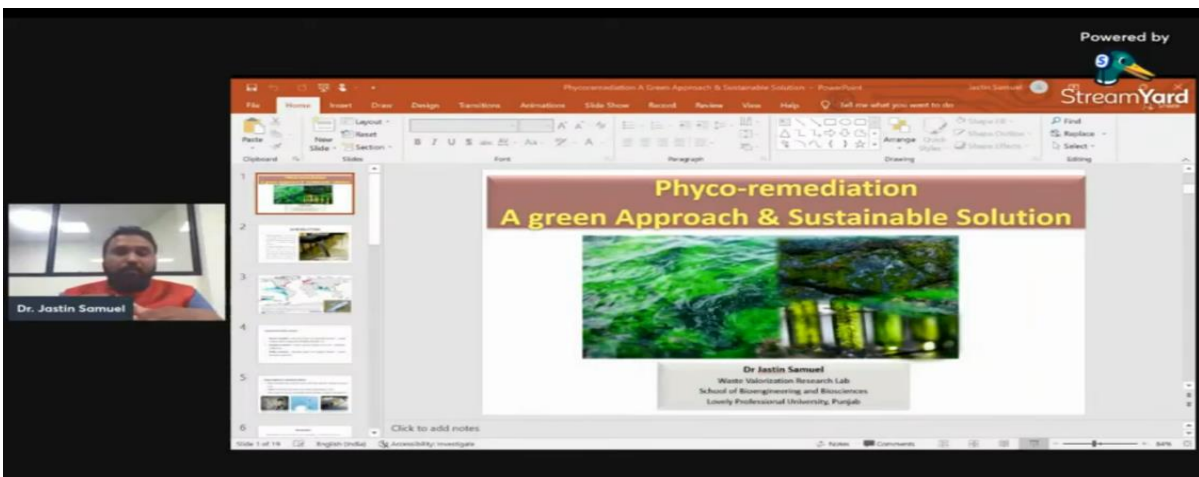
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Ravikiran Pagare

Dr. Jastin Samuel


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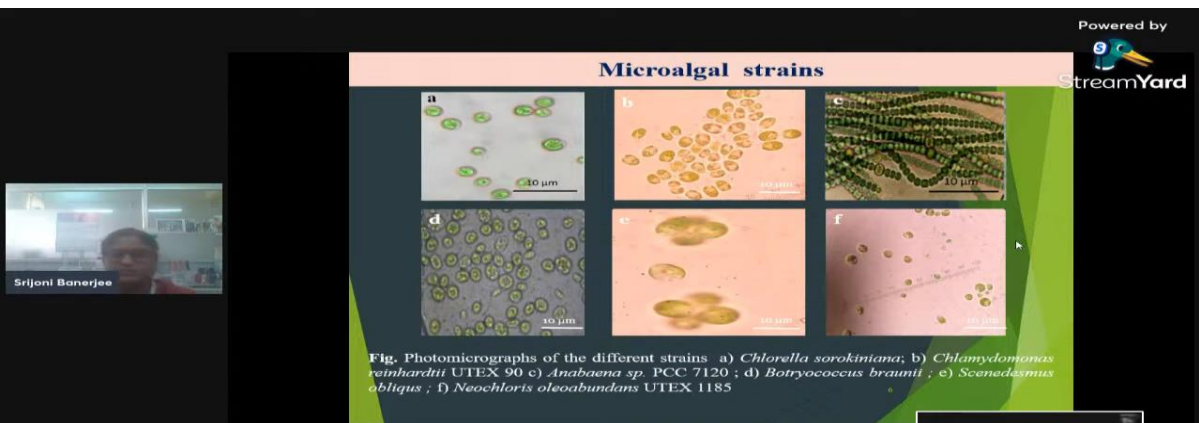


Phyco-remediation
A green Approach & Sustainable Solution

Dr. Jastin Samuel
Waste Valorization Research Lab
School of Biotechnology and Biosciences
Laxmi Professional University, Purgali

Dr. Jastin Samuel

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Microalgal strains


Fig. Photomicrographs of the different strains a) *Chlorella sorokiniana*; b) *Chlamydomonas reinhardtii* UTEX 90 c) *Anabaena* sp. PCC 7120 ; d) *Botryococcus braunii* ; e) *Scenedesmus obliquus* ; f) *Neochloris oleoabundans* UTEX 1185

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Dr. Razia Kutty

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Ms. Savita Patil



Dimple Patil

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Dr. Nissar Reshi



Dr. Kuldeep Bauddh

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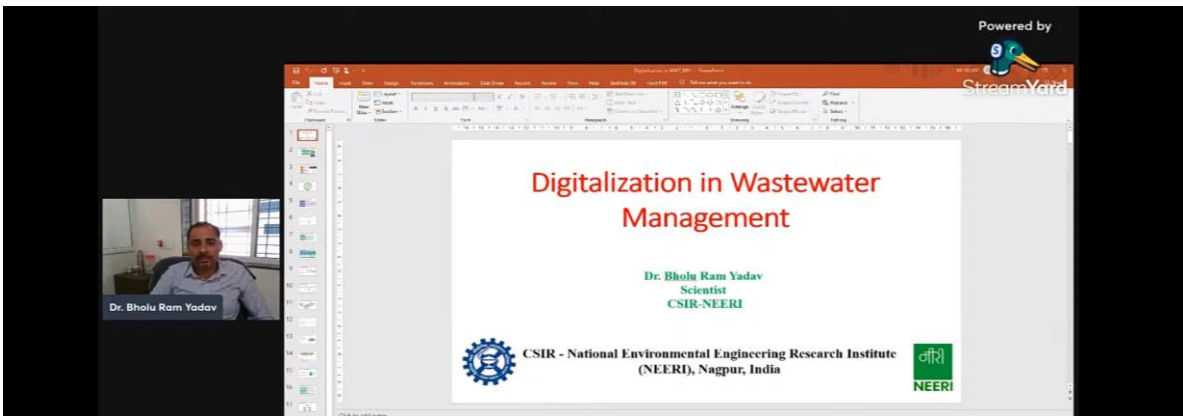
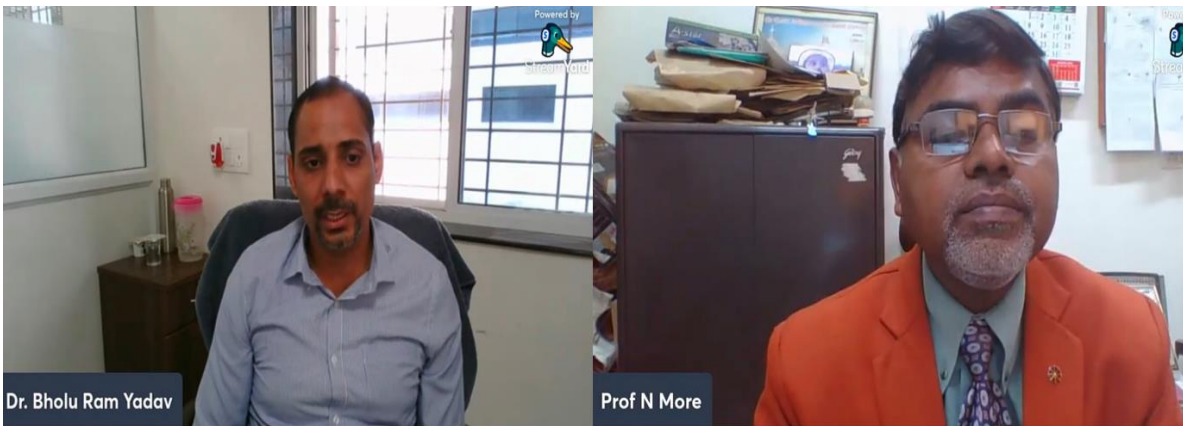
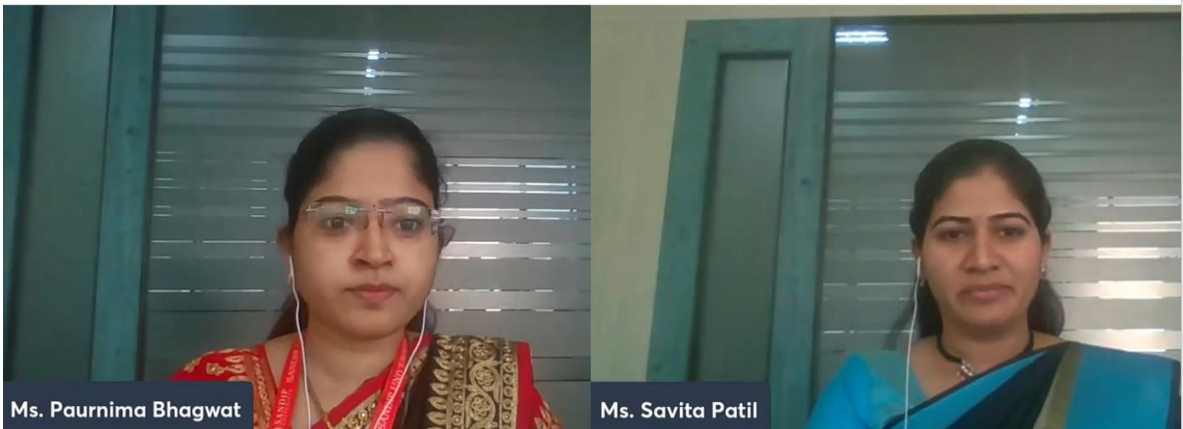
Dr. Leena Patil



Ms. Purnima Bhagwat



Dr. Dipankar Ghosh



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Dr. Sukdeb Pal-CSIR-NEERI

Virtual International Conference on Current Trends in Waste Treatment, Reuse & Valorisation
Organized by School of Science, Sandip University, Nashik, Maharashtra
In Association with Society for Green Environment, New Delhi, India
February 25 - 27, 2022

Inorganic Nanostructure For Multifunctional Applications In Water Treatment

Sukdeb Pal, PhD
Principal Scientist, Associate Professor
Wastewater Technology Division, Chemical Sciences
CSIR, National Environmental Engineering Research Institute, Academy of Scientific & Innovative Research
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AcSIR NEERI

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Ms. Purnima Bhagwat

Dr. Dipankar Ghosh

Systems Biology Approach to Screen and Identify Algal Phosphatases for Detecting Heavy Metals: A sustainable platform

International Conference on Current Trends in Waste Treatment, Reuse, and Valorization
Organizing by Sandip University, Nashik & Society for Green Environment, New Delhi, India
26th February 2022

Dr. Dipankar Ghosh
(Assistant Professor)

Microbial Engineering & Algal Biotechnology Laboratory
Department of Biosciences
JIS University, Kolkata, India


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Dr. Kuldeep Bauddh

Remediation of metal contaminated soil using an industrially important plant *Ricinus communis*



Presented by
Kuldeep Bauddh, Ph.D.
Assistant Professor
Department of Environmental Sciences
Central University of Jharkhand, Ranchi, India
E-mail: kuldeep.bauddh@cuja.ac.in



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Dr. Simranjeet Singh


Adsorption, Kinetic and Thermodynamics behavior of Cr (VI) by novel MOF based nanocomposite

Dr. Simranjeet Singh

Interdisciplinary Centre for Water Research (ICWaR)
Indian Institute of Sciences Bangalore

ICWaR SANDIP UNIVERSITY SOCIETY FOR GREEN ENVIRONMENT भारतीय विज्ञान संस्थान



1




Soumya Pandit

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International Conference (online Mode)
on
Current Trends in Waste Treatment, Reuse, and Valorization
Organizing by
School of Science, Sandip University, Nashik, Maharashtra
in Association with
Society for Green Environment, New Delhi, India

Biochar-based Anode material using *Datura* peels for Microbial Fuel Cell application

Soumya Pandit^{1,*}, Yogesh Kumar², Meenal Gupta¹
¹School of Basic Science & Research (SBSR), Sharda University
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Dr. Sourish Bhattacharya

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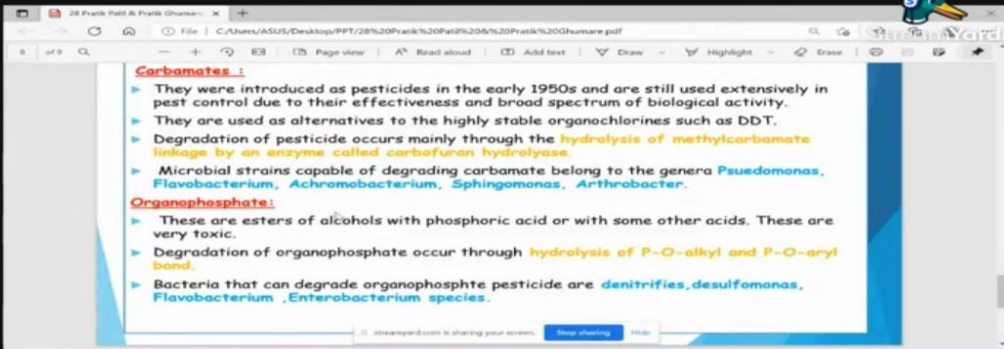
Dr. Achlesh Davrey (Doon University)

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Ms. Purnima Bhagwat

Pratik Patil

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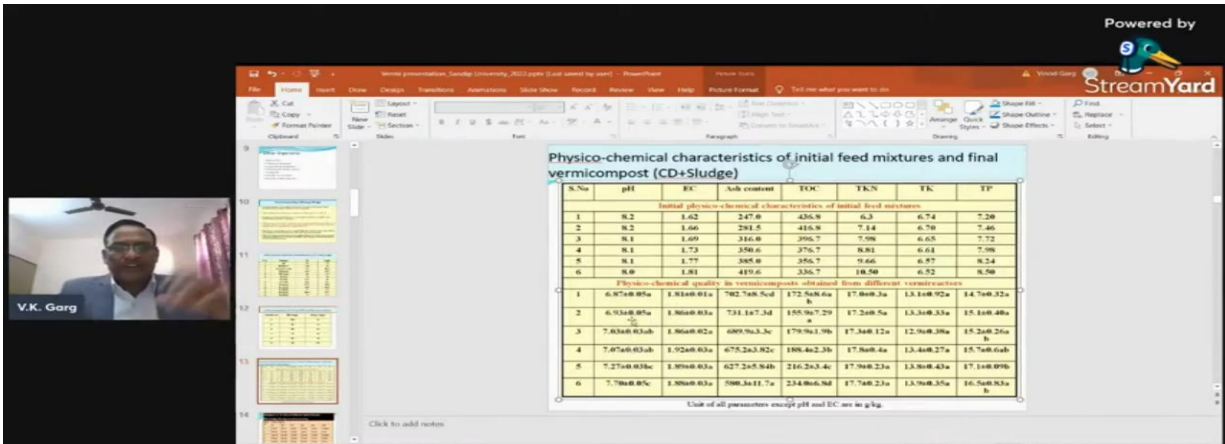
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Carbamates :

- ▶ They were introduced as pesticides in the early 1950s and are still used extensively in pest control due to their effectiveness and broad spectrum of biological activity.
- ▶ They are used as alternatives to the highly stable organochlorines such as DDT.
- ▶ Degradation of pesticide occurs mainly through the hydrolysis of methylcarbamate linkage by an enzyme called carbobifuran hydrolase.
- ▶ Microbial strains capable of degrading carbamate belong to the genera *Psuedomonas*, *Flavobacterium*, *Achromobacterium*, *Sphingomonas*, *Arthrobacter*.

Organophosphate:

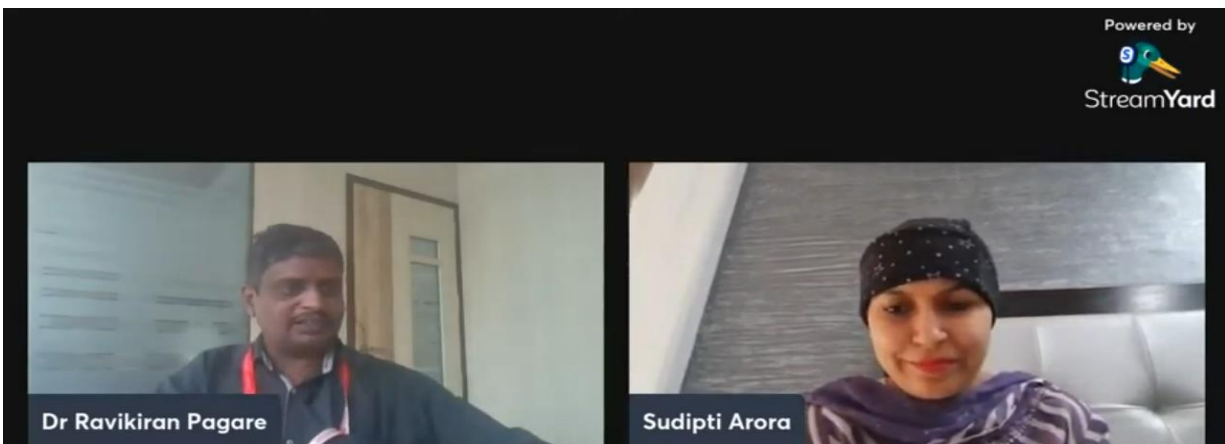
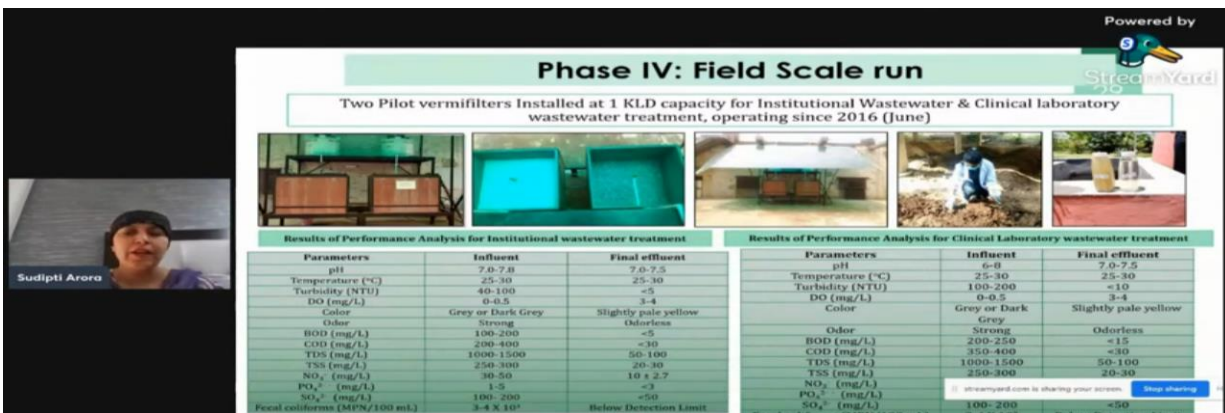
- ▶ These are esters of alcohols with phosphoric acid or with some other acids. These are very toxic.
- ▶ Degradation of organophosphate occur through hydrolysis of P-O-alkyl and P-O-aryl bond.
- ▶ Bacteria that can degrade organophosphpte pesticide are *denitrifies*, *desulfomonas*, *Flavobacterium* ,*Enterobacterium* species.

Physico-chemical characteristics of initial feed mixtures and final vermicompost (CD+Sludge)



S.No	pH	ES	Ash content	TOC	TKN	TK	TP
Initial physico-chemical characteristics of initial feed mixtures							
1	8.2	1.62	247.9	436.9	6.3	6.74	7.28
2	8.2	1.66	281.5	415.9	7.14	6.76	7.46
3	8.1	1.69	216.9	396.7	7.98	6.65	7.72
4	8.1	1.73	356.6	376.7	8.81	6.61	7.96
5	8.1	1.77	385.6	356.7	9.66	6.87	8.24
6	8.0	1.81	419.6	336.7	18.90	6.52	8.98
Physico-chemical quality in vermicomposts obtained from different vermicultures							
1	6.87±0.89a	1.83±0.01a	782.7±8.5cd	172.7±8.6a	17.8±0.3a	13.1±0.92a	14.7±0.32a
2	6.93±0.89a	1.86±0.03a	731.1±7.3d	155.9±7.29	17.2±0.5a	13.3±0.33a	15.1±0.48a
3	7.03±0.03ab	1.96±0.02a	689.9±3.3c	179.9±1.9b	17.3±0.12a	12.9±0.38a	15.2±0.26a
4	7.07±0.03ab	1.92±0.03a	675.2±3.92c	188.4±2.3b	17.8±0.4a	13.4±0.27a	15.7±0.6ab
5	7.27±0.03bc	1.89±0.03a	627.2±5.94bc	216.2±3.4c	17.9±0.23a	13.9±0.43a	17.1±0.09b
6	7.78±0.87c	1.89±0.03a	598.3±11.7c	234.8±6.9d	17.7±0.23a	13.9±0.35a	16.5±0.83a

Note: Unit of all parameters except pH and EC are in g/kg.

Phase IV: Field Scale run

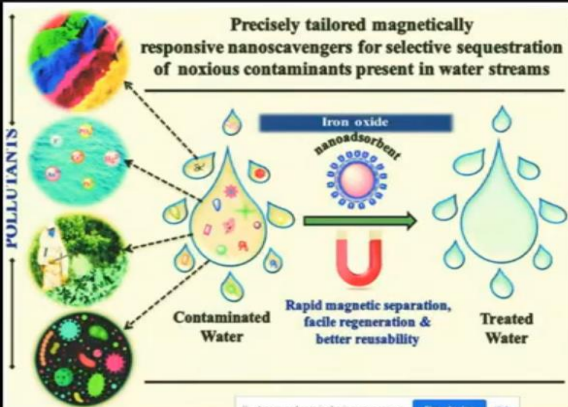
Two Pilot vermifilters Installed at 1 KLD capacity for Institutional Wastewater & Clinical laboratory wastewater treatment, operating since 2016 (June)

Results of Performance Analysis for Institutional wastewater treatment			Results of Performance Analysis for Clinical Laboratory wastewater treatment		
Parameters	Influent	Final effluent	Parameters	Influent	Final effluent
pH	7.0-7.8	7.0-7.5	pH	6-8	7.0-7.5
Temperature (°C)	25-30	25-30	Temperature (°C)	25-30	25-30
Turbidity (NTU)	40-100	<5	Turbidity (NTU)	100-200	<10
DO (mg/L)	0-0.5	3-4	DO (mg/L)	0-0.5	3-4
Color	Grey or Dark Grey	Slightly pale yellow	Color	Grey or Dark Grey	Slightly pale yellow
Odor	Strong	Odorless	Odor	Strong	Odorless
BOD (mg/L)	100-200	<5	BOD (mg/L)	200-250	<15
COD (mg/L)	200-400	<30	COD (mg/L)	350-400	<30
TDS (mg/L)	1000-1500	50-100	TDS (mg/L)	1000-1500	50-100
TSS (mg/L)	250-300	20-30	TSS (mg/L)	250-300	20-30
NO ₂ ⁻ (mg/L)	30-50	1.0 ± 2.7	NO ₂ ⁻ (mg/L)		
PO ₄ ³⁻ (mg/L)	1-5	<3	PO ₄ ³⁻ (mg/L)		
SO ₄ ²⁻ (mg/L)	100-200	<50	SO ₄ ²⁻ (mg/L)	100-200	<50
Fecal coliforms (MPN/100 mL)	3-4 X 10 ⁶	Below Detection Limit			

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ADVANTAGES

- High Adsorption Capacity
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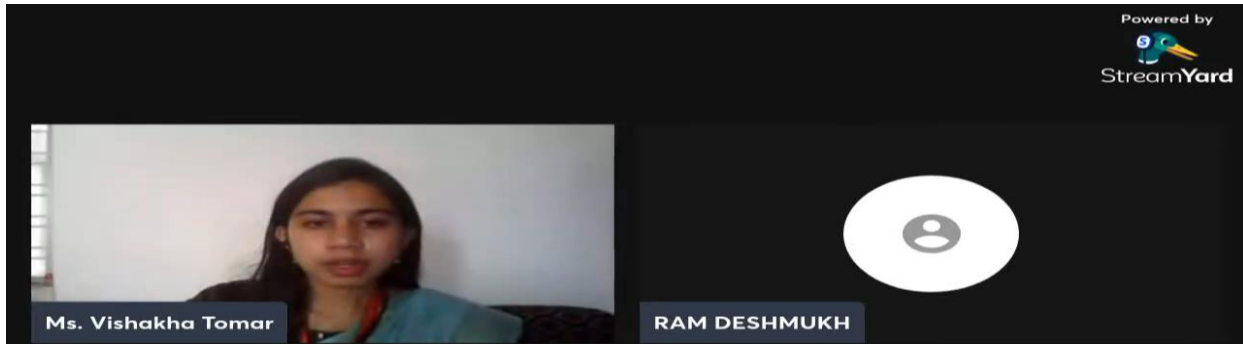
Contaminated Water

Treated Water

Rapid magnetic separation, facile regeneration & better reusability

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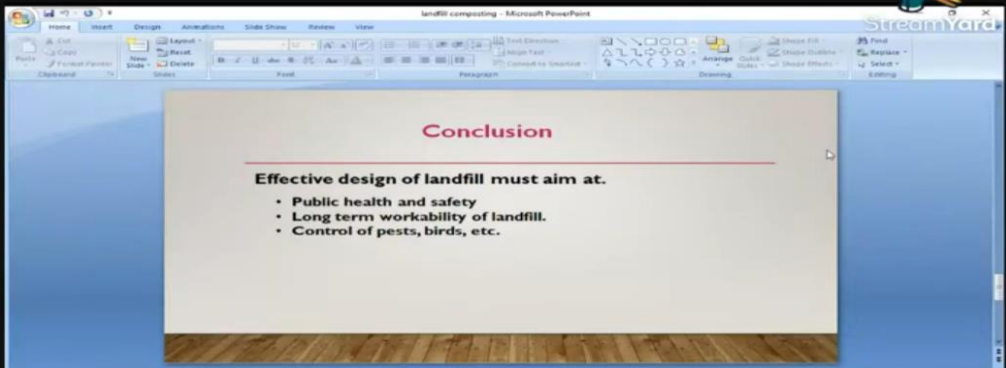
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Ms. Vishakha Tomar

RAM DESHMUKH

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landfill composing - Microsoft PowerPoint

Conclusion

Effective design of landfill must aim at.

- Public health and safety
- Long term workability of landfill.
- Control of pests, birds, etc.

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