



Friday, 3rd March 2023

## **Session IV: Environment & Sustainability**

### **Textile and dyestuff wastewater treatment through ETPs and CETPs - Case studies**



**Dr Girish R Pophali**

Sr. Principal Scientist, CSIR-NEERI, Nagpur

Dr Girish Pophali, a civil engineer with a Masters degree in Environmental Engineering from Government Engineering College, Jabalpur and a Ph.D. in Environmental Engineering from Nagpur University. is presently Senior Principal Scientist in CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur. He has 26 years of experience in research, engineering design and project management in the area of water and wastewater treatment. Dr Pophali has provided solutions to treat wastewater generated by all kinds of industries including textile, tannery, chemical, pharmaceutical, distillery, dairy, slaughter house, SS rolling mill, etc. He has developed natural treatment systems for domestic sewage. Dr Pophali has successfully completed more than 30 such projects in last ten years including turnkey assignments. He has developed a novel circular secondary clarifier called “Hydroplume” for improved solids-liquid separation in water and wastewater treatment.

Dr. Pophali has received several international and national awards including the UN Habitat Award and the Dubai International Award. Currently, he is working on an Indo – European Project on implementation of technoeconomic solution for sewage and fecal sludge management, upgradation and retrofitting of 7 CETPs in Ahmedabad; upgradation, retrofitting and implementation of 3.5 MLD STP at Special Economic Zone at Chennai, implementation of sewerage system and 2 STPs at Narmada Nagar, MP; and upgradation of large scale slaughter house industries in UP.

Dr Pophali has published more than forty papers in national and international journals and authored five chapters in various books. He has four international and two national patents to his credit. He has guided more than 20 post graduate & undergraduate students for their project work and is currently supervising three Ph.D. students.



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## **Textile and dyestuff wastewater treatment through ETPs and CETPs - Case studies**

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### **Abstract**

This presentation will discuss some case studies dealing with the operation of individual effluent & common effluent treatment plants (ETPs & CETPs) for treatment of textile and dyestuff wastewater. Textile and dyestuff industries wastewaters pose major challenges including a less than 0.20 BOD:COD ratio, high total dissolved solids (TDS) and color. A full-scale evaluation of these ETPs and CETPs reveals that such industrial effluents require a holistic and multi-intervention approach for efficient treatment and compliance with environmental norms. Studies indicate that for textile wastewaters, when BOD: COD ratio is between 0.2 - 0.3, a secondary biological treatment system can be provided after primary treatment. However, for dyeing industrial wastewaters, when BOD:COD ratio is between 0.1 - 0.2, then it is preferable to provide any advanced oxidation process (AOP) such as hydro-dynamic cavitation after pre-treatment, which ensures removal recalcitrant organics and color.