

Low Cost & Affordable Technology for Improving the Sanitation & Hygiene: Automatic Mechanical Urinal-Toilet Flusher “**NEERFLUSH**” for Swachh Bharat Mission

Sustainable Development Goal 6 focuses on “Clean Water and Sanitation”. The Govt. of India launched *Swachh Bharat Mission*, in order to eradicate open defecation by 2019. As more and more toilets are being built across the country to improve sanitation infrastructure, the need for effectively keeping the toilets clean has increased. Public toilets that are badly designed, badly maintained, and poorly located generate a *sense of neglect, attracting vandalism, anti-social behaviour and social disorder*. Even places with toilets-urinals facility people are reluctant to use it, as are normally *dirty, stinky and un-hygienic* in absence of regular cleaning and water availability for flushing (as Urinals-toilets consumes 28-40% of the total water use). And which is one of the major reasons for open defecation in areas even with toilet facilities. As per WHO, of the various diseases cause due to poor sanitation globally 99.8% deaths due to ‘Diarrhoea’ occurs in developing countries of which 90% are children's. Thus there is a great need for developing the proper sanitation facility in the rural as well as urban areas and more importantly keeping it clean and hygienic in order to enhance its usability restricting water wastage in flushing.

Innovation ‘**NEERFLUSH**’ which is field demonstrated and deployed, offers a Low Cost & Affordable Technology for improving the Sanitation & Hygiene facility. It consists of a bulged portion acting as a temporary water reservoir with the cross section of inlet and outlet of the pipe, in conformance with the shape mutually connected inlet and outlet. When the person stands for using the urinal-toilet the pre-specified minimum requisite quantity of water automatically get loaded in the temporary water reservoir and when the person leaves, the collected water automatically get dispense in to urinal-toilet i.e. Flushes specified quantity of water in urinal-toilet. Further, contact free flusher operation eliminates the exposure to disease-causing bacteria which may occur when users operate manual flush fixtures.

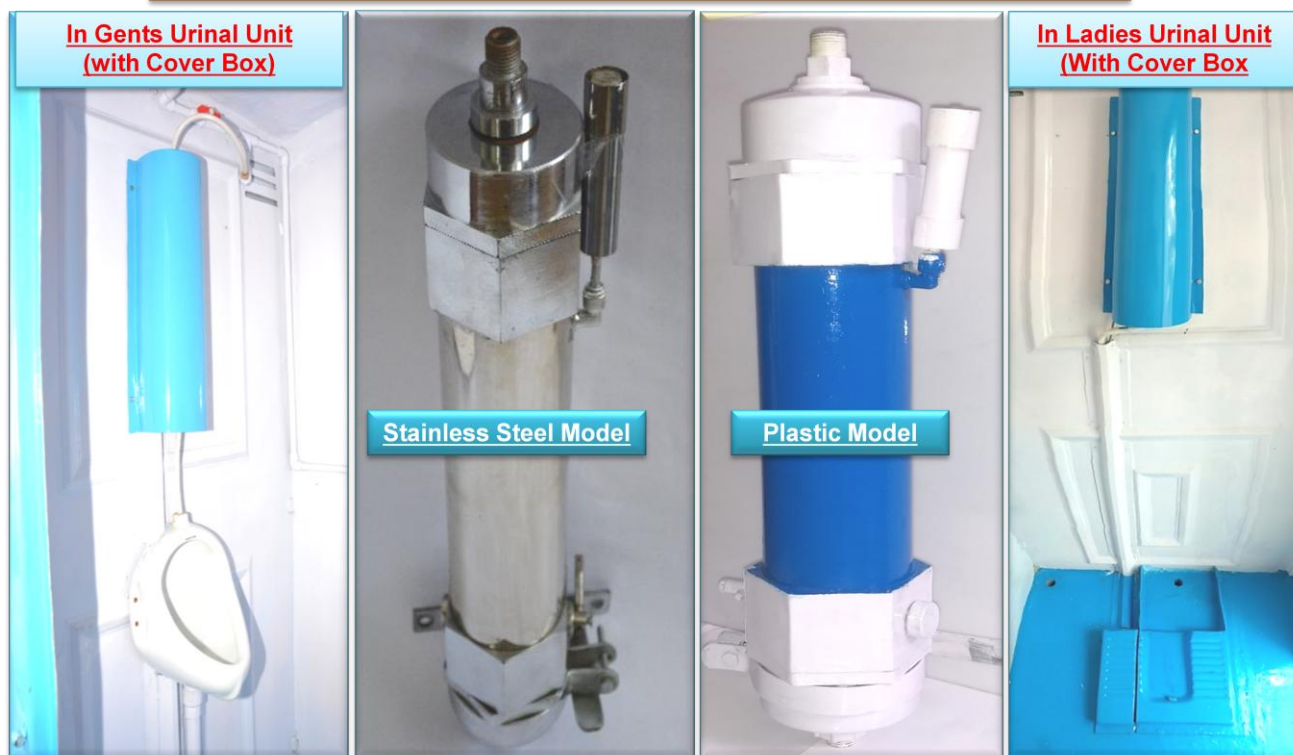
‘**NEERFLUSH**’ overcomes the drawbacks / limitations of the existing flushing systems available in market such as Expensive Sensor based flusher, Waterless Urinals, Tap or Knob fitted mechanical flushers, etc.

Depending upon the Requirement & Place of Use/Aesthetics, it can be made using PVC or UPVC or CPVC or Acrylic or Composite or Glass or MS or SS, etc. material. Various prototypes are already developed and tested using alternative materials such as PVC, Plastic, Acrylic, Stainless Steel, etc. which ensures its production possible for both higher end Commercial places (Urban) utility as well as in Public Places/Rural places without compromising the basic working and functional properties of flushing.

Unique Salient Features of 'NEERFLUSH', are

- Needs 'NO', electronic or electrical, operation.
- Hands free, that is without hand contact, and unintentional, that is automatic and effortless flushing.
- Uses minimum requisite quantity of water per flush, as uses 75% Less Water than standard facility.
- Leads to assured, regular, and compulsory flushing and cleaning, of urinals-toilets.
- Low cost, compared with the existing systems.
- Can be customized and retrofitted, to new as well as existing urinals-toilets.
- Easy and low maintenance.
- Reduces, associated health risk.

"NEERFLUSH" for Swachh Bharat Mission



IPR Status

Patents

- **India:** 194DEL2013
- **US:** 9803349 Granted on Oct. 31, 2017
- **EU:** 14736464
- **PCT:** IN2014/000329
- **South Africa:** 2016/00020 Granted on May 31, 2017

Design Registration

Automatic Mechanical Urinal-Toilet Flusher "NEERFLUSH"

Innovator

- Er. Sushant B. Wath (Senior Scientist)

Awards / Recognition

Awarded with IconSWM 2015 Excellent Paper Award at **Indian Institute of Science and Technology (IISc), Bengaluru** for “A Mechanical Automatic Urinal-Toilet Flusher for Swachh Bharat Mission”

Technology Licensee

None

Potential Areas of Application

- Public Toilets
 - Sulabh Shauchalaya
 - Municipalities' Toilets
 - Urban Public Toilets
 - Village Panchayat / Local bodies
- Commercial Complexes:
 - Railway Stations
 - Bus Stands
 - Markets and Malls
 - Air Ports, Sport Complexes, etc.
- Office/ Residences
- Academic Institutions
- Tourist Places
- Social and Religious Gathering Places

Media Coverage

NDTV

Her Sapna Sachh Karaga India
BANEGA SWACHH INDIA

Urinals Can Soon Have Hands-Free Flushing, Courtesy A New Toilet Flusher Developed By The National Environmental Engineering Research Institute

The Hitavada THE PEOPLE'S VOICE

NEERI's low cost urinal system a boon for Swachh Bharat Abhiyan

Urinals Can Soon Have Hands-Free Flushing, Courtesy A New Toilet Flusher Developed By The National Environmental Engineering Research Institute

THE BETTER INDIA

Low-Cost, Saves Water & Automatic: This Toilet Wants to Solve Our Sanitation Problem

THE TIMES OF INDIA

Neeri scientists develop mechanical low-cost flusher to improve rural toilets

News from The Times of India | Aug 22, 2017, 9:41:57

Nagpur: Prime Minister Narendra Modi's ambitious target of building toilets in rural India has been facing crippling hurdles like no proper water supply, poor sanitation facility and lack of maintenance.

As per various media reports and surveys, 60% population in rural areas lacks improved sanitation facilities.

Love reading positive news? Help The Better India grow

Support our mission by becoming a paid member or by donating to our cause.

Earlier this year, a documentary called *Wastors* witnessed the deplorable conditions of public toilets in almost all parts of rural India, and the inevitable loss of sanitation services when they failed to clean them.

The situation is not very novel in other parts of India either. This, of course, is not news.