

## Low Cost & Affordable Sanitation Technologies for Improving the Sanitation & Hygiene:

### **Automatic Mechanical Urinal-Toilet Flusher “NEERFLUSH” and Water Efficient Urinal Pot-“NEERSWACHH” 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 Urinals-Toilets are improperly developed and located, without any proper maintenance making it un-usable. 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 deceases 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 and restricting water wastage during flushing.

In view of this, CSIR-NEERI’s field demonstrated sanitation technologies ‘**NEERFLUSH**’ and ‘**NEERSWACHH**’, offers low cost & affordable solution for improving the sanitation & Hygiene in Urinals-Toilets facility. It overcomes limitations/drawbacks of the existing technologies available in the market, such as expensive sensor based flusher, waterless urinals, tap or knob fitted mechanical flushers, etc. Further, hands-free flusher operation eliminates the exposure to disease-causing bacteria/germs in urinals-toilets, and also ensures water conservation as uses minimum requisite quantity of water per flush

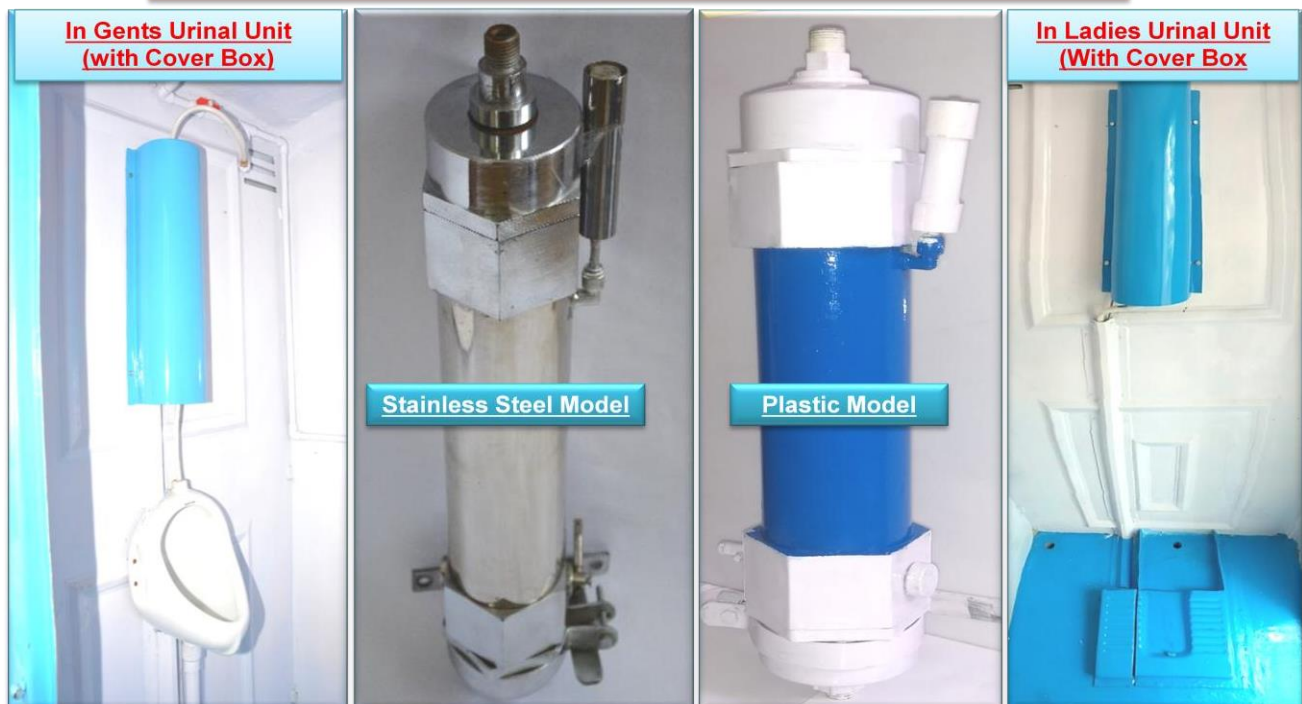
Depending upon the requirement & place of use/esthetics, it can be made using PVC or UPVC or CPVC or Acrylic or Composite or Glass or MS or SS, etc. material. Various prototypes are already developed and tested using alternative materials such as PVC, Plastic, Acrylic, Stainless Steel, etc. which ensures 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

### ‘NEERFLUSH’- Automatic Mechanical Urinal-Toilet Flusher

- 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



### NEERSWACHH: Water Efficient Urinal Pot

- **Specific design facilitates complete draining of liquid waste (Urine).**
- **Less water per flush require for effective cleaning of pot**
- **Reduce bad odour** problem in Urinals.
- Can be **fitted in existing and new** Urinals.
- Will produce **synergistic effect** when fitted **with ‘NEERFLUSH’** for **improving sanitation and hygiene facility** and thus may reduce associated health risk.

## Water Efficient Urinal Pot- NEERSWACHH



### IPR Status

#### Patents

National	International
India: 194DEL2013	United States : 14/890273 (Granted) South Africa : 2016/00020 (Granted) European Union: 14736464.0 PCT: IN2014/000329

#### Design Registration

- ❖ A Low Cost Mechanical Automatic Urinal-Toilet Flusher- '*NEERFLUSH*'  
1) 302473 2) 302474
- ❖ Water Efficient Urinal Pot "NEERSWACHH"

### Innovator

Er. Sushant B. Wath (Senior Scientist)

### Awards / Recognition

- ❖ "Low Cost and Affordable **Innovation NEERFUSH & NEERSWACHH** for SWACHH BHARAT MISSION" was awarded with '**IconSWM-Springer Excellence Paper Award 2018**' by the Hands of Executive Vice Chairman-Swachh Andra Mission, Govt. of Andra Pradesh at Guntur-Vijayawada.
- ❖ Awarded with IconSWM 2016 Excellent Paper Award at **Indian Institute of Science and Technology (IISc), Bengaluru** for "A Mechanical Automatic Urinal-Toilet Flusher for Swachh Bharat Mission"

### 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

### Technology Package

The total cost of Technologies is Rs. 5.0 lakhs (+ GST) as license fee with 5% royalty on Annual sales of units, on non-exclusive basis for a period of five years.

And Technology Package is already made available for *Licensing to interested Stake Holders* (Industries, SMES, Entrepreneurs, etc.). The following things associated with the technology will be offered in the technology package to licensee.

- ✓ Technology Dossier/Know How documents which includes:
  - Assembly Drawings
  - Detailed Engineering Drawings
  - Bill of Materials
- ✓ Necessary Technical Guidance and support
- ✓ Information cum advertisement Brochures Template (in Hindi and English)

### Contact Details

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# Media Coverage

Har Sapna Sachh Karega India  
**BANEGA SWACHH INDIA**

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

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

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

Madhya Pradesh 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

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

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Earlier this year, a documentary called Swachh uncovered the grimy conditions of public toilets in various parts of rural India. Now the swachh task of sanitation workers will also focus on these areas.

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