



**Potential and Validation  
of Sustainable Natural & Advance Technologies  
for Water & Wastewater Treatment,  
Monitoring and Safe Water Reuse  
in India**

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**Short report of participation in conferences – 1<sup>st</sup> update**

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## Document change history

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v2	22.09.2021	Langergraber(BOKU)	final version including review comments from TTZ

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## 1. Executive Summary

The main aim of the PAVITR project is to validate, develop and deploy fourteen cost-effective & sustainable prototypes to tackle water challenges and ensure the provision of safe water reuse, rejuvenate water quality of rivers, and restore degraded ecosystems in India. The PAVITR prototypes are modular and decentralised systems, that can be further scaled up by local authorities to face wastewater challenges and to ensure the provision of safe drinking water in India.

Deliverable D8.11 "Short report of participation in conferences – 1st update" reports on PAVITR's activities to disseminate results from month 19 (August 2020) to month 32 (September 2021) of the project duration. In particular, current deliverable report activities related to national and international events that have already been carried out, started, and/or are planned, respectively.

Despite the difficult situation due to the ongoing pandemic that caused postponement and cancellation of many events, PAVITR could organise two workshops along international conferences:

- 1) at the 11<sup>th</sup> International Conference on Environmental Engineering and Management – ICEEM11, 8-10 September 2021, and
- 2) at the 9<sup>th</sup> International Symposium on Wetland Pollution Dynamics and Control – WETPOL 2021 virtual, 13-17 September 2021, respectively.

## 2. Introduction

PAVITR aims to present results at major national events (e.g. Indian Water Week; Indian Water Works Association Convention; World Water Summit in India) and major international conferences focusing on India or the neighbouring countries. To facilitate this, PAVITR aims to propose workshops and side events along these events additionally to regular submissions for oral presentations for specific topics.

From August 2020 to September 2021, months in which the events calendar has been heavily affected by the COVID-19 pandemic, PAVITR organised two workshops at major international conferences and prepared a proposal for another (i.e. IWA Water Reuse 2022/23).

In the following, we describe PAVITR's conference activities

- that already have been carried out between month 19 (August 2020) and 32 (September 2021), and
- that have been prepared and that are planned in the future.

### 3. PAVITR's Activities at conferences from August 2020 to September 2021

#### 3.1. 11<sup>th</sup> International Conference on Environmental Engineering and Management – ICEEM11, 8-10 September 2021, MuttENZ, Switzerland

A special session on PAVITR Project was organized in the framework of the 11<sup>th</sup> International Conference on Environmental Engineering. The conference was organized in hybrid mode, and took place in MuttENZ (Switzerland) and online via Zoom from 8-10 September 2021 with in total more than 210 participants.

The PAVITR session took place the 9<sup>th</sup> September from 16.30 to 17.45 and was chaired by Enrica Uggetti (UPC). The session included 6 oral and 3 posters presentations, and was followed by 36 participants (13 online and 13 onsite). After a general introduction about the project carried out by Mirko Hänel (TTZ), partners from IRIDRA, AIMEN, AU, TTZ, AMU, UPC and BIOAZUL presented their results.

**Table 1:** Program of the PAVITR workshop @ ICEEM11 (Parallel session 6 on Thursday 9 Sep 21; Onsite activities are marked in orange; Online presentations are marked in green).

**Chairperson:** Dr. Enrica Uggetti

**TS:** Diana Gabur & Patrick Eckert, Micha Wehrli

Time	Title	Authors
16:30 – 16:40	Domestic sewage management using nature-based solutions for reuse in public park: an Indian experience	Bresciani R., Pophali G. R., Labhasetwar P., Hirulkar D., Lakhiani H., Sahu N., Masi F.,
16:40 – 16:50	Potential and Validation of Sustainable Natural & Advance Technologies for Water & Wastewater Treatment, Monitoring and Safe Water Reuse in India (PAVITR)	Nadeem Khalil, Mirko Hänel, Andres C. Acosta, Carlos A. Arias,
16:50 – 17:00	VFA monitoring using spectroscopy sensor for the waste management control in anaerobic digestion	Miguel Placer, Santiago Gómez-Cuervo, Rocío Pena, Ana Pascual, Juan Antonio Álvarez, Luz Herrero, Francisco Rodriguez,
17:00-17:10	Sanitation and recovery of resources by short-rotation-plantations in India	Mirko Hänel, Andres C. Acosta, Nadeem Khalil, Carlos A. Arias,
17:10-17:20	Production of high value bio-resources from treatment wetland biomass	Marco A. Rodriguez-Dominguez, Birgit E. Bonefeld, Morten A-Jensen, Mirko Hänel, Andres C. Acosta, Hans Brix, Carlos. A. Arias,
17:20-17:30	Hydrothermal processing for biomass conversion from wetland engineered wastewater treatment systems [willow-Salix viminalis]	Andrés C. Acosta, Carlos A. Arias, Patrick Biller, Hans Brix
17:30 - 17:35	Materials for P removal in wastewater treatment and the P bioavailability for plant growth	S.M. Jensen, C. Esposito, D. Konnerup, H. Brix, C.A. Arias,
17:35 – 17:40	Design and development of full-scale high rate algal ponds for wastewater treatment in India under India-EU research collaboration	Enrica Uggetti, Antonio Ortiz, Rubén Díez-Montero, Nadeem Khalil, Joan García,
17:40 – 17:45	RichWater® SBR as a competitive option for the use of reclaimed water in agriculture	Lorenzo-López A., Zapata-Aranda P., Caballero-Hernández A.



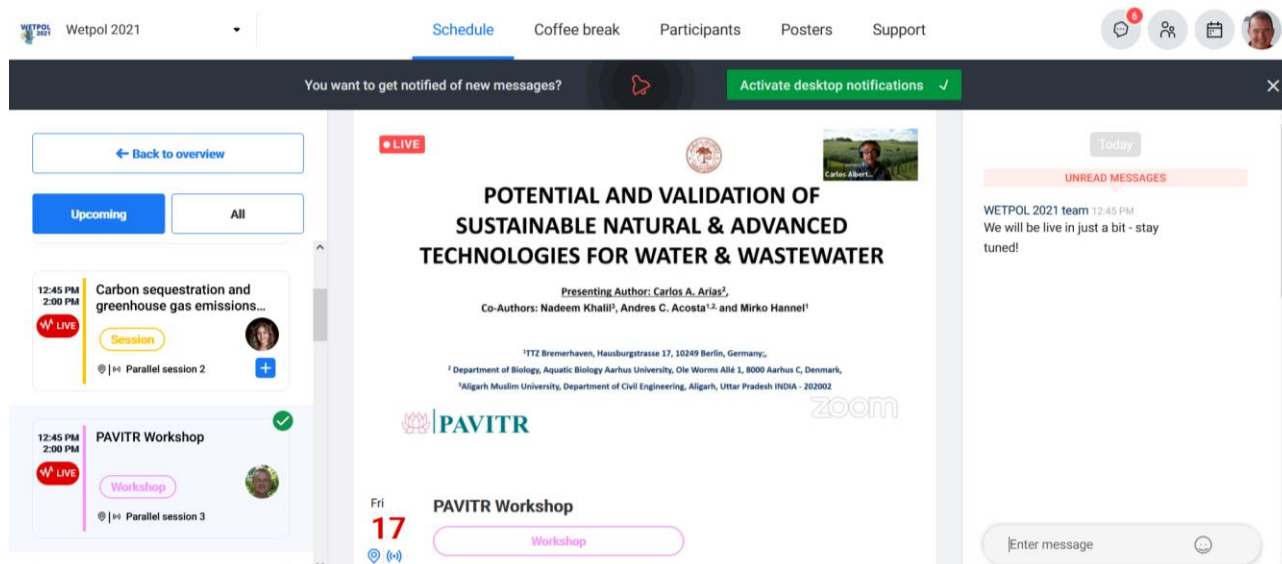
**Figure 1:** Participants of the PAVITR workshop at ICEEM11.

### 3.2. 9<sup>th</sup> International Symposium on Wetland Pollution Dynamics and Control – WETPOL2021 virtual, 13-17 September 2021

A PAVITR session was also organised at the 9<sup>th</sup> International Symposium on Wetland Pollution Dynamics and Control - WETPOL 2021 that was organised as virtual conference by BOKU from 13-17 September 2021. See below the program of the PAVITR workshop (**Table 2**), as well as screenshots from the live streaming in the Talque tool (**Figure 2**) and the participants from the PAVITR team (**Figure 3**).

**Table 2:** Program of the PAVITR workshop @ WETPOL 2021 on 17<sup>th</sup> September 2021.

Topic	Speaker/moderator
Welcome and introduction	Carlos Arias (AU)
Constructed Wetlands Technology for Sewage Treatment in India: 5 Years of Experience of Innovative and Novel Installations	Nadeem Khalil (AMU)
Sanitation and recovery of resources by shirt rotation plantations in India	Mirko Hänel (ttz)
Implementation of different types of Constructed Wetlands in India; a new experience	Girish R. Pophali (NEERI)
Fluorescence-Based pathogen sensor for water quality monitoring	Santiago Gómez-Cuervo (AIMEN)
Summary and closing	Carlos Arias (AU)



The screenshot displays the Talque virtual conference interface. At the top, there are navigation tabs: 'Schedule', 'Coffee break', 'Participants', 'Posters', and 'Support'. A notification banner asks to activate desktop notifications. The main content area shows a 'LIVE' session titled 'POTENTIAL AND VALIDATION OF SUSTAINABLE NATURAL & ADVANCED TECHNOLOGIES FOR WATER & WASTEWATER'. The presenting author is Carlos A. Arias, and co-authors are Nadeem Khalil, Andres C. Acosta, and Mirko Hannel. The session is part of the PAVITR Workshop on Friday, September 17th. A sidebar on the left shows a list of sessions, including 'Carbon sequestration and greenhouse gas emissions...' and 'PAVITR Workshop'. A message box on the right indicates unread messages from the WETPOL 2021 team.

**Figure 2:** Carlos Arias (AU) opening the PAVITR workshop at WETPOL 2021 as seen in the virtual conference platform Talque during the live streaming.





**Figure 3:** Presenters and participants from the PAVITR team.

#### 4. Conference activities prepared and planned

The *13th IWA International Conference on Water Reclamation and Reuse* was originally planned to be held from 13-17 January 2021 in Chennai, India. Due to the COVID-19 pandemic, the conference was first postponed to January 2022 and finally further postponed to 17-21 January 2023 and is planned now to be held in presence.

In May 2020, PAVITR submitted a proposal for the conference planned originally in January 2021; this proposal was resubmitted in April 2021 for the conference planned in January 2022 before the final postponement to January 2023 was announced.

Due to the unclear situation for most events no other activities have been planned beside the Chennai event so far.

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