Program Booklet

3rd NOVEMBER 2025

VENUE: SALA NOVELA, BIBLIOTECA Piso 6, TEC, Campus Monterrey, Mexico

TIME	AGENDA
13:30 – 14:00	**Inaugural Session** • **Opening remarks: Prof. Jürgen Mahlknecht** Chair of the Climate and Sustainability Research Core, Tecnologico de Monterrey (TEC); Editor-in-Chief Groundwater for Sustainable Development • **Project Pathways: Prof. Manish Kumar** Distinguished Professor, Faculty of Excellence, TEC, Mexico; Lead PI of Challenge-Based Research (CBR) Project • **Achieving Excellence: Prof. Janet A Gutiérrez Uribe** Associate Dean of Faculty, School of Engineering and Science, TEC, Mexico • **Inaugural Remarks: Prof. Daniel A. Jacobo-Velázquez** Associate Dean of Research and Scientific Graduate Studies, School of Engineering and Science, TEC, Mexico • **Vote of thanks: Danael Aceves Padilla** Faculty of Excellence and Consultancy Coordinator, School of Engineering and Science, TEC, Mexico
14:00 – 14:45 (Keynote-I)	**Water Quality and Quantity Modeling: Theory, Practice, and Future Directions** **By Prof. Vijay P. Singh,** Ph.D., D.Sc., BC WRE (Hon.), D. EWRA (Hon.), P.E., P.H., F. AGU, Academician (GFA), FCAE, NAE, Distinguished Professor Emeritus, Department of Civil and Environmental Engineering, Texas A&M University, USA
14:45 – 15:30 (Keynote-II)	**How Water Quantity Can Affect Water Quality—A Reason to Study Riverine and Deltaic Systems** **By Prof. Saugata Datta,** Chair, Department of Earth and Planetary Sciences, Director, Institute of Water Research Sustainability and Policy (IWRSP), University of Texas San Antonio (UTSA), USA
15:30 – 16:00	**Networking Session with Coffee**

TIME	AGENDA
16:00 – 17:00 **(Panel - I)**	**The Water Quality–Quantity Nexus — Toward Integrated Hydrological Futures**
Moderator: **Manish Kumar (TEC)**	**Panelists:** **Saugata Datta** (UTSA); **Aldo I. Ramírez** (TEC); **Jürgen Mahlknecht** (TEC); **Vijay P. Singh** (Texas A&M)
Key Discussions	Are quality and quantity truly two sides of the same coin when it comes to water? If so, is now the time to address both together? If we focus on one, will the other issue be neglected, or could concentrating on one actually benefit the other? How is climate change reshaping this relationship?
	All Woman Panel
17:00 – 18:00 **(Panel - II)**	**Participatory Systems, and Circular Communities: Gender, Equity, and Knowledge Systems**
Moderator: **Mexitli Eva Sandoval Reyes (TEC)**	**Panelists:** **Danael Aceves** (TEC); **Juan Ignacio Barragán** (Servicio de Agua y Drenaje de Monterrey, SADM); **Thalia Turren Cruz** (TEC); **Pricila Davila** (SADM); **Priyansha Gupta** (TEC); **Ericka Zurita** (TEC)
Key Discussions	The importance of involving communities, especially marginalized groups, in water management. The role of indigenous knowledge, traditional practices, and modern technology in improving water systems. How national and international bodies and networks influence access to and quality of water resources.
	Young-Water Professionals of TEC
18:00 – 19:00 **(Panel - III)**	**Data, Sensors, and AI — Engineering Smart Water Systems for the Anthropocene**
Moderator: **Durga Prasad Panday (TEC)**	**Panelists:** **Jaime Dueñas** (Puebla,TEC); **Shiwangi Dogra** (TEC); **Juan A Torres Martínez** (Queretaro, TEC); **Christian Narváez-Montoya** (TEC), **Pedro Quero** (TEC)
Key Discussions	The Anthropocene is marked by human-driven change — how should water systems adapt to this new reality? How can digital transformation (IoT, AI, data analytics) help build resilience against climate extremes, pollution, and scarcity? Ethical and environmental implications of increased datafication?
19:00 – 21:30	**BREAK**

3rd NOVEMBER 2025
VIRTUAL PANEL DISCUSSIONS

TIME (MST)	Sizzling Scientists Virtual Panel
21:30-22:30 (Panel - IV)	**From Micro to Macro Risks: Understanding the New Paradigm of Environmental Contaminants**
Moderator: Priyansha Gupta (TEC)	**Panelists:** **Paromita Chakraborty** (SRMU, India); **Anish Warrier** (Manipal University); **Dipa Lalwani** (MKBU, India); **Prasun Goswami** (SRMU, India); **Rakesh Kumar** (Auburn, USA)
Key Discussions	How multiple emerging pollutants interact, overlap, persist, and influence each other in soil and water systems to impact ecosystems and human health. What are associated climate-linked risks, and sustainable mitigation approaches.
	Art of the Artificial Intelligence
22:30 – 23:30 (Panel - V)	**Digital Twins for Integrated Water Quality & Quantity Management under Climatic Extremes**
Moderator: Durga Prasad Panday (TEC)	**Panelists:** **Vivek Agarwal** (Northumbria University, UK); **Kanchan Bahukhandi** (UPES, India); **Siddharth Chaudhary** (NASA, USA); **Asok Raja** (IMD, India); **Ickkshanshu Sonkar** (IIT Ropar, India)
Key Discussions	How can advanced computer models/digital twins, help us manage both the amount and cleanliness of water during extreme event like floods and droughts. How will the virtual tools use real-world data to spot problems early, support quick action, and improve collaboration between communities and decision-makers.

4th NOVEMBER 2025

VENUE: CARRETA, TEC, Campus Monterrey, Mexico

4TH NOVEMBER	Emerging Scientists Virtual Panel
09:00 – 10:00 (Panel - VI)	**Mapping the Invisible: Linking emerging contaminants and ecosystem health**
Moderator: Shiwangi Dogra (TEC)	**Panelists:** **Aseem Saxena** (UPES, India); **Kanika Dogra** (UPES, India); **Luis Terrazas Salgado** (TEC); **Neha Jaiswal** (Pondicherry University, India); **Sachin Tripathi** (TEC)
Key Discussions	How "invisible" pollutants and antibiotic-resistance genes are silently transforming ecosystems across aquatic and terrestrial environments. How to integrate cutting-edge analytical tools, environmental modelling, and biological assessments, to unravel how these contaminants move, interact, and impact ecosystem health.
	Exclusive Spanish Medium Panel
10:00 – 11:00 (Panel - VII) In Spanish	***Olas de Cambio: Desafíos de la calidad del agua y el cambio climático en América Latina – Visiones y soluciones académicas*** **Waves of Change: Water Quality and Climate Challenges in Latin America – Academic Visions and Adaptations**
Moderator: Aldo Ramirez (TEC)	**Panelists:** **Abrahán R. Mora Polanco** (TEC); **María Aurora Armienta Hernández** (Universidad Nacional Autónoma de México (UNAM, MEX); **Ana Yael Vanoye García** (TEC), **Miguel Ángel López Zavala** (TEC)
Key Discussions	En la búsqueda acelerada por el cumplimiento del derecho humano al agua y al saneamiento, son necesarias opiniones expertas del nexo entre la calidad y la cantidad para el monitoreo del agua en áreas urbanas y rurales.
	All Faculty of Excellence Panel
11:00 – 12:00 (Panel - VIII)	**Smart Materials, Microbes, and Microsystems: Converging Technologies for Sustainable Water Futures**
Moderator: Jürgen Mahlknecht (TEC)	**Panelists:** **Francisco J. Falcone** (UPNA, Spain), **J. Gabriel Luna** (TEC); **Kartik Chandran (Columbia University, USA)**; **Marc J. Madou** (TEC); **Manish Kumar** (TEC)
Key Discussions	How cutting-edge materials, microbial systems, and microscale devices are transforming the future of water sustainability. How innovations exposes the water quality-quantity nexus.

MC: Igor Rubio	Invited Talks & Keynote
12:05 – 12:25	**Límites Permisibles de la Calidad del Agua Según la NOM-127-SSA1-2021** ***By* Pablo Tamez** (SADM)
12:25 – 12:45	**PFAS In Groundwater at an Undisclosed Location in Mexico** **By Jerjes Pantoja** (Corporación Ambiental de México)
12:45 – 13:15 (Keynote – III)	**Finding Something or Missing Something: A Twelve-Month Search Operation for Emerging Contaminants in Mexico** **By Manish Kumar** (TEC, Mexico)

13:15 to 14:00	CLOSING SESSION
Valedictory Session **MC: Priyansha Gupta (TEC)**	• **Summary of Colloquium:** Prof. Jürgen Mahlknecht • **Scientific Takeaways:** All the moderators • **Feedback the Future:** Guests/Panelists/Participants • **Concluding Remarks:** Prof. Daniel A. Jacobo-Velázquez • **Felicitation:** Prof. Janet A. Gutiérrez Uribe • **Vote of thanks:** Manish Kumar
THE	END