ABOUT THE SYMPOSIUM

Water is central to sustainable development, environmental security, food production and resilient infrastructure. Rapid urbanization, climate variability, floods, droughts, groundwater depletion and changing river systems demand innovative, interdisciplinary and technology-driven solutions.

The Symposium on Artificial Intelligence and Computational Fluid Dynamics for Next-Generation Hydrology and Hydraulic Engineering provides a platform for academicians, researchers, scientists, engineers, students, policymakers and industry professionals to exchange knowledge, present recent research and explore emerging technologies in water engineering.

The symposium will particularly highlight the integration of advanced hydraulics, computational modelling, Artificial Intelligence, Machine Learning, IoT, GIS, remote sensing and sustainable water-resource management.

THEMATIC AREAS

Hydraulics & Fluid Mechanics
Pipe flow • Open channel flow • Turbulence • Experimental hydraulics

River & Open-Channel Engineering
River hydraulics • Sediment transport • River morphology • Scour • Confluences

Hydraulic Structure
Dams • Spillways • Weirs • Bridges • Energy dissipation • Hydraulic modelling

Hydrology Water Resources
Floods • Droughts • Watershed management • Groundwater • Water security

Computational Hydraulics & CFD
Numerical modelling • CFD • Turbulence modelling • Multiphase flow

AI/ML & Smart Water Systems
Artificial Intelligence • Machine Learning • IoT • GIS • Remote sensing • Digital twins

Climate-Resilient & Sustainable Water Management
Climate change • Nature-based solutions • Water reuse • Sustainable Infrastructure

DISTINGUISHED EXPERTS

Prof. Kishanjit Kumar Khatua
Professor, National Institute of Technology Rourkela

Dr. Pankaj Mani
Scientist 'G' & Head
National Institute of Hydrology
Centre for Flood Management Studies (CFMS)

Dr. Mohit Prakash Mohanty
Associate Professor
Department of Water Resources Management
Indian Institute of Technology Roorkee

Dr. Ashutosh Sharma
Associate Professor
Department of Hydrology
Indian Institute of Technology Roorkee

Dr. Kesheo Prasad
Assistant Professor
Department of Civil Engineering
Indian Institute of Technology (BHU) Varanasi, UP

Dr. Kamalini Devi
Assistant Professor
Department of Civil Engineering
National Institute of Technology Warangal

Dr. Manish Pandey
Assistant Professor
Department of Civil Engineering
Indian Institute of Technology Kharagpur

Dr. Abhishek Kumar Pandey
Assistant Professor
Department of Civil Engineering
Indian Institute of Technology (ISM) Dhanbad

Dr. Gaurav Misuriya
Assistant Professor
Department of Civil Engineering
Indian Institute of Technology Kharagpur

Dr. Jnana Ranjan Khuntia
Assistant Professor
Department of Civil Engineering
Chaitanya Bharathi Institute of Technology (CBIT)



NATIONAL INSTITUTE OF TECHNOLOGY PATNA
राष्ट्रीय प्रौद्योगिकी संस्थान पटना

SYMPOSIUM ON
Artificial Intelligence and Computational Fluid Dynamics for Next-Generation Hydrology and Hydraulic Engineering

SPECIAL FOCUS

"FROM CONVENTIONAL HYDRAULICS TO INTELLIGENT WATER SYSTEMS"

Advanced Hydraulics + CFD + AI/ML + IoT + GIS + Remote Sensing + Sustainable Engineering

21st - 22nd November 2026
Saturday & Sunday

Organized by

DEPARMENT OF CIVIL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY PATNA
Patna, Bihar, India - 800005



TWO-DAY SYMPOSIUM PROGRAMME

21 November 2026 | Saturday

INAUGURAL SESSION
Registration • Welcome Address • Ceremonial Inauguration • Address by Dignitaries • Symposium Overview

EXPERT LECTURES - I
Invited lectures by distinguished experts on emerging developments in hydraulics and water resources engineering.

TECHNICAL SESSIONS
Research presentation covering:
- Hydraulics and River Engineering
- Hydraulic Structures
- Sediment Transport and Scour
- Water Resources Management
- Computational Hydraulics

INTERACTIVE SESSION
Emerging Challenges and Future Directions in Water Resources Engineering

22 November 2026 | Sunday

EXPERT LECTURES - II
Advanced research in hydrology, computational methods, climate resilience and intelligent water systems.

TECHNICAL SESSIONS
- AI/ML and Data-Driven Water Engineering
- CFD and Computational Hydraulics
- Flood and Drought Management
- Sustainable Water Resources
- Smart Water Systems

PANEL/INTERACTIVE DISCUSSION
"Future of Hydraulics and Water Resources Engineering: Research, Innovation and Technology"

VALEDICTORY SESSION
Symposium Summary • Recognition of Contributions • Valedictory Address • Vote of Thanks

EXPECTED OUTCOMES

KNOWLEDGE → COLLABORATION → INNOVATION → TECHNOLOGY → IMPACT

The Symposium aims to encourage interdisciplinary research, develop academic and professional collaboration, promote young researchers and explore innovative solutions for sustainable and resilient water management.

PATRONAGE & ORGANIZING TEAM

CHIEF PATRON
Prof. P. K. Jain
Director, NIT Patna

PATRON
Dr. Sunita Kumari
Head, Department of Civil Engineering
NIT Patna

CHAIRPERSONS
Prof. Ramakar Jha
HAG Professor, Department of Civil Engineering, NIT Patna

Dr. Roshni T.
Associate Professor, Department of Civil Engineering, NIT Patna

CONVENERS
Dr. Bhabani Shankar Das
Assistant Professor, Department of Civil Engineering, NIT Patna

Dr. Joseph Tripura
Assistant Professor, Department of Civil Engineering, NIT Patna

WHO CAN PARTICIPATE?

Faculty | Scientists | Researchers | Ph.D. Scholars | M.Tech Students

UG Students | Engineers | Consultants | Government Professionals | Industry Experts | Start-ups

SCAN/TAP TO REGISTER
Complete the Registration Form & Submit Payment Details

REGISTRATION DETAILS

Category	Early Bird (up to 31 Oct 2026)	After 31 Oct 2026
Scientist/Faculty	4000 + GST	5000 + GST
PhD Scholar	2500 + GST	3000 + GST
M.Tech Student	1500 + GST	2000 + GST
UG Student	1000 + GST	1500 + GST

Mode
Physical Mode

Limited Seats
40

ACCOUNT DETAILS

Account Name	:	NIT Patna CFD Account
Account Number	:	50433562364
Bank Name	:	Indian Bank
IFSC Code	:	IDIB000B810

NATIONAL INSTITUTE OF TECHNOLOGY PATNA
Department of Civil Engineering
Patna Bihar, India - 800005

INTERNATIONAL SYMPOSIUM ON

HYDRAULICS AND WATER RESOURCES ENGINEERING

21 - 22 November 2026



EXPLORE • EXCHANGE • INNOVATE • TRANSFORM

Shaping the Future of Hydraulics and Water Resources Engineering

21 - 22 November 2026 | NIT Patna

VENUE
NATIONAL INSTITUTE OF TECHNOLOGY PATNA
DEPARTMENT OF CIVIL ENGINEERING
PATNA, BIHAR, INDIA - 800005

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