CRHT-XIII

13th International Symposium on
Current Research in Hydropower Technologies

Date: April 7, 2025				
Kathmandu University				
Program Schedule				
Time	**Programs**			
9:15 – 9:30	Registration			
9:30- 10:00	Opening Ceremony			
Session – Group 1	Parallel session I	Parallel session II	Parallel session III	
10:15-11:15	CV Raman	Mini Auditorium	Senate Hall	
Session – Group 2	Parallel session IV	Parallel session V	Parallel session VI	
11:30- 12:30	CV Raman	Mini Auditorium	Senate Hall	
Lunch Break (KU Central Canteen) (12:30- 13:30)				
Session – Group 3	Parallel session VII (Poster)	Parallel session VIII (Poster)	Parallel session IX (Poster)	Online Session
13:30-14:00	CV Raman	Mini Auditorium	Senate Hall	
Session – Group 4	Parallel session X	Parallel session XI	Parallel session XII	
14:00-14:50	CV Raman	Mini Auditorium	Senate Hall	
10 MINUTE BREAK				
15:00-15:30	Closing Session			
15:30-17:00	Lab Visit			
17:00- onwards	**Dinner in Dhulikhel (Dhulikhel Lodge Resort)**			

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Monday, April 7, 2025					
Venue: CV Raman Auditorium					
Session Time	**Topic**	**Session Chair**	**Title**	**Author**	**Institution**
10:15-11:15	Pelton Turbines	Prof. Bhola Thapa	Develop a method on how to measure the border flow in the buckets of Pelton turbines	Serina Westersjo Strom	Norges teknisk-naturvitenskapelige universitet
			Sediment Erosion in Pelton Turbine Nozzle: Effects on Jet Dynamics	Maia Hegdal Berntsen	Norges teknisk-naturvitenskapelige universitet
			A numerical investigation of Pelton turbines and experimental validation	Jonas Scheuer	RWTH Aachen University
			Test of Efficiency Loss in an Eroded Pelton Turbine	Kristoffer Almås	Norwegian University of Science and Technology
			Analysis discharge flow and losses from an eroded Pelton bucket	Jim Abregu	Norges teknisk-naturvitenskapelige universitet
11:30-12:30	Hydropower	Dr. Thomas Oyvang	Assessment of Hydro Turbine Runner Manufacturing Capabilities in Nepal: Challenges, Opportunities, and Future Prospects	Ram Lama	Kathmandu University
			Risk assessment for total dissolved gas supersaturation in the Nepali hydropower sector	Wolf Ludwig Kuhn	Norsk Institutt for Naturforskning
			Reducing total dissolved gas supersaturation through gas bubbling: Influence of diffuser angle towards the flow direction	Runar Bjørnstad	Norges teknisk-naturvitenskapelige universitet
			Procedure for operating the Turbine Testing Lab at Kathmandu University	Ingrid Leuckfeld Pedersen	Norges teknisk-naturvitenskapelige universitet
			Design Optimization of Micro-Hydro Pelton Turbine: Integration of Static and Modal Analysis Using ANSYS APDL	Anupkumar Chaudhari	Parul Arogya Seva Mandal Trust
Lunch Break (12:30- 13:30)					
13:30-14:00	Hydropower Technology and Erosion (Poster Presentation)	Dr. Jennifer Dietrich	Analysis and quantification of erosion pattern due to sediment containing flow by experimental technique	Abhiyan Dangi	Kathmandu University
			Numerical Study of Erosion in Pelton Injector System: Implementing the Effect of Gravity on Lagrangian Particles with Different Size	Prithivi Gurung	Kathmandu University
			Parametric Modeling of Pelton Bucket and the effect of the bucket depth on sediment erosion	Anjali Bhandari	Kathmandu University
			Performance Analysis of a Sand-Casted Model Francis Runner with Detachable Blades: Efficiency Measurement and Evaluation	Aashish Chhantyal	Kathmandu University
			Analysis and Optimization of a Solar Photovoltaic-Integrated Pumped Storage Hydropower System	Suman Raj Poudel	Kathmandu University
14:00-14:50	Erosion and vibration measurement	Dr. Jennifer Dietrich	Numerical investigation of influence of modal shapes on flow over vibrating body	Dadi Ram Dahal	Norges teknisk-naturvitenskapelige universitet
			Experimental study of the effects of leakage flow erosion in Francis turbine using Guide vane cascade rig	Rakish Shrestha	Kathmandu University
			Erosion behavior of Laser Clad WC-Ni Coatings on CA6NM Steel	Bishow Acharya	Indian Institute of Technology Roorkee
			Study performance characteristics of benchmark test rig at different Reynolds number	Jørgen Bakkeng	Norges teknisk-naturvitenskapelige universitet

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Venue: Mini Auditorium

Session Time	Topic	Session Chair	Title	Author	Institution
10:15-11:15	Francis Turbines	Prof. Hari Prasad Neopane	Performance evaluation of an eroded Pelton turbine and components	Jim Abregu	Norwegian University of Science and Technology
			Leakage Flow in Staggered Labyrinth Seals: An Analytical Approach	Abdul Raqib Qaderi	Kathmandu University
			Study on the performance of Francis runner under variable speed operation at different operating conditions	Pawan Lal Bijukchhe	Kathmandu University
			Numerical study of Francis-99 turbine during start-stop: A case of no-load to deep part load	Anker Moi Pedersen	Norges teknisk-naturvitenskapelige universitet
			Numerical Analysis of Cavitation Effects in Low-Head, Medium-Specific Francis Turbines for Small Hydroelectric Power Plants	Pankajkumar Gohil	Sarvajanik Education Society
11:30-12:30	Pump	Dr. Hemant Sagar	Parametric study of the impeller blade shape to improve the performance of mixed flow pump with semi-open casing	Ujjwal Shrestha	Mokpo National University
			Evaluation of vortex generators for pump turbine blade inlet	Anders Haugen	Norges teknisk-naturvitenskapelige universitet
			Design procedure for a reversible pump-turbine	Kristina Flaatten	Norges teknisk-naturvitenskapelige universitet
			Numerical study of reversible pump-turbine at selected operating conditions	Mathias Eikebø	Norges teknisk-naturvitenskapelige universitet
			Effects of submergence on cavitation performance of a Reversible Pump Turbine	Amul Ghimire	Norges teknisk-naturvitenskapelige universitet
Lunch Break (12:30- 13:30)					
13:30-14:00	Automotive, Aerodynamics and Manufacturing (Poster Presentation)	Prof. Pankajkumar P. Gohil	Design and Implementation of an Advanced Maintenance Planning and Resource Allocation Framework for Industrial Processes	Suman Raj Poudel	Kathmandu University
			Design Sizing of Air-Flow Driven Cyclone Separator for Waste Segregation	Amshu Niraula	Kathmandu University
			Iot-Based Low-Cost Indoor Air Quality Monitoring and Data Logging System: Comparative Analysis with Standard Devices	Pradeep Hamal	Kathmandu University
			Exploring the Impact of Biomimetic Flaps on the Aerodynamics of a NACA-2412 Airfoil	Neha Yadav	Kathmandu University
			Regenerative electromagnetic suspension	Niroj Deshar	Kathmandu University
14:00-14:50	Francis Turbines and cavitation	Dr. Pankajkumar P. Gohil	Investigation of Cavitation Impact of a Francis turbine under different load conditions: A Numerical Approach	Prashant Kumar	Indian Institute of Technology Roorkee
			Numerical study of Francis-99 turbine during start-stop: A case of deep part load to the best efficiency point	Mikal Høie Tjølsen	Norges teknisk-naturvitenskapelige universitet
			Efficiency-driven reactive power optimization in multi-machine power plants with synchronous generators	Emil Ghieh Melfald	Universitetet i Sorost-Norge
			Hydroelasticity effects of Cavitation Bubble Collapse	Hemant Sagar	Indian Institute of Technology Roorkee

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Venue: Senate Hall					
Session Time	**Topic**	**Session Chair**	**Title**	**Author**	**Institution**
10:15-11:15	Electrical, Wind and others	Prof. Bhupendra Bimal Chhetri	Future operation of wind and hydropower plants in Norway	Dina Strøm	Norges teknisk-naturvitenskapelige universitet
			Future operation of wind- and hydropower in Norway	Mathilde Stadaas	Norges teknisk-naturvitenskapelige universitet
			Numerical simulation on thermal performance of flat and rib heat exchangers based solar food dryer under no load conditions	Navaraj Adhikari	Kathmandu University
			PMV based assessment for Summer Thermal Comfort in Sub Tropical, Temperate and Mountain regions of Nepal	Raghav Sharma	Kathmandu University
			Iot-Enabled Smart Metering to Enhance Energy Management for Day-Ahead Electricity Price Forecasting	Kushal Bhatta	Kathmandu University
11:30-12:30	Hydrogen and others	Mr. Chiranjeevi Mahat	Evaluation of Seasonal Hydro-Excess Energy for Green Hydrogen Production a case study of Solu Hydropower Project	Nawaraj Kafle	Kathmandu University
			Introducing socio-technical safety barriers for hydrogen systems	Abhishek Subedi	Norges teknisk-naturvitenskapelige universitet
			Decarbonization Potential of Hydrogen-Enriched Natural Gas (HENG)-Fueled Boilers in Industrial Applications	Lakshman Lama	Kathmandu University
			Numerical Study of Hydrogen Pre-chamber Jet Ignition: for Lean-burn of Ammonia in an Internal Combsution Engine	Aanan Ghimire	Kathmandu University
			Emission reduction potential of green hydrogen in heavy-duty transport sector of Nepal	Manika Manandhar	Kathmandu University
Lunch Break (12:30- 13:30)					
13:30-14:00	Energy Storage (Poster Presentation)	Prof. Ramesh Kumar Maskey	Thermal and economic assessment of incorporating ice batteries in cold storages to take advantage of varying hydropower electricity tariffs: A theoretical and numerical approach.	Aakash Mali	Kathmandu University
			A Comparative Study of Metal Hydrides as Efficient Storage Solution for Green Hydrogen	Ashutosh Aman	Kathmandu University
			Trend Analysis of Repair and Maintenance Capacity in Context of Nepalese Hydropower	Sachin Tandukar	Kathmandu University
			Pumped Storage Hydropower Systems: A Comprehensive Review of Innovations, Resilience, and Climate Adaptation	Bibek Bhattarai	Kathmandu University
			Integrating Green Hydrogen as an Energy Storage Solution for Nepal's Seasonal Hydropower Fluctuations	Lakshman Lama	Kathmandu University
14:00-14:50	Hydropower repair and maintenance	Prof. Ramesh Kumar Maskey	Repair and Maintenance of Francis Runners in Nepal: Issues and Challenges	Atmesh Poudyal	Kathmandu University
			Comprehensive Review of Sediment Erosion Mechanisms and Their Impact on Francis Turbines	Abdul Raqib Qaderi	Kathmandu University
			Strategic Maintenance Optimization of Hydropower Facilities along Nepal's Marsyangdi River	Pasang Ghising	Kathmandu University
			Design and optimization of rim type thruster	Gustav Oskar Ludvig Ambjörnsson	Norges teknisk-naturvitenskapelige universitet

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Venue: Online (https://meet.google.com/zyf-dkhp-kva?authuser=0)					
Session Time	**Topic**	**Session Chair**	**Title**	**Author**	**Institution**
13:30-14:00	Hydropower and Erosion	Dr. Sailesh Chitrakar	Erosive Wear Analysis of Labyrinth Ring of Francis Turbine	Rohit Kumar Sahu	Indian Institute of Technology Roorkee
			Influence of Geometrical Parameters on the Sealing behavior of Band side Stepped Labyrinth seals of Francis turbine.	Mamata Rijal	Kathmandu University
			Design-Centric Approach for Cavitation Control in Francis Turbines Across Dynamic Loading Conditions	Saaif Showkat	Indian Institute of Technology Roorkee
			Assessing the Effects of Water-Level Fluctuations from Small Hydropower Stations on Erosion in Latvia's Small Rivers	Inga Grinfelde	Latvijas Biozinatnu un tehnologiju universitate