VETOMAC 2022

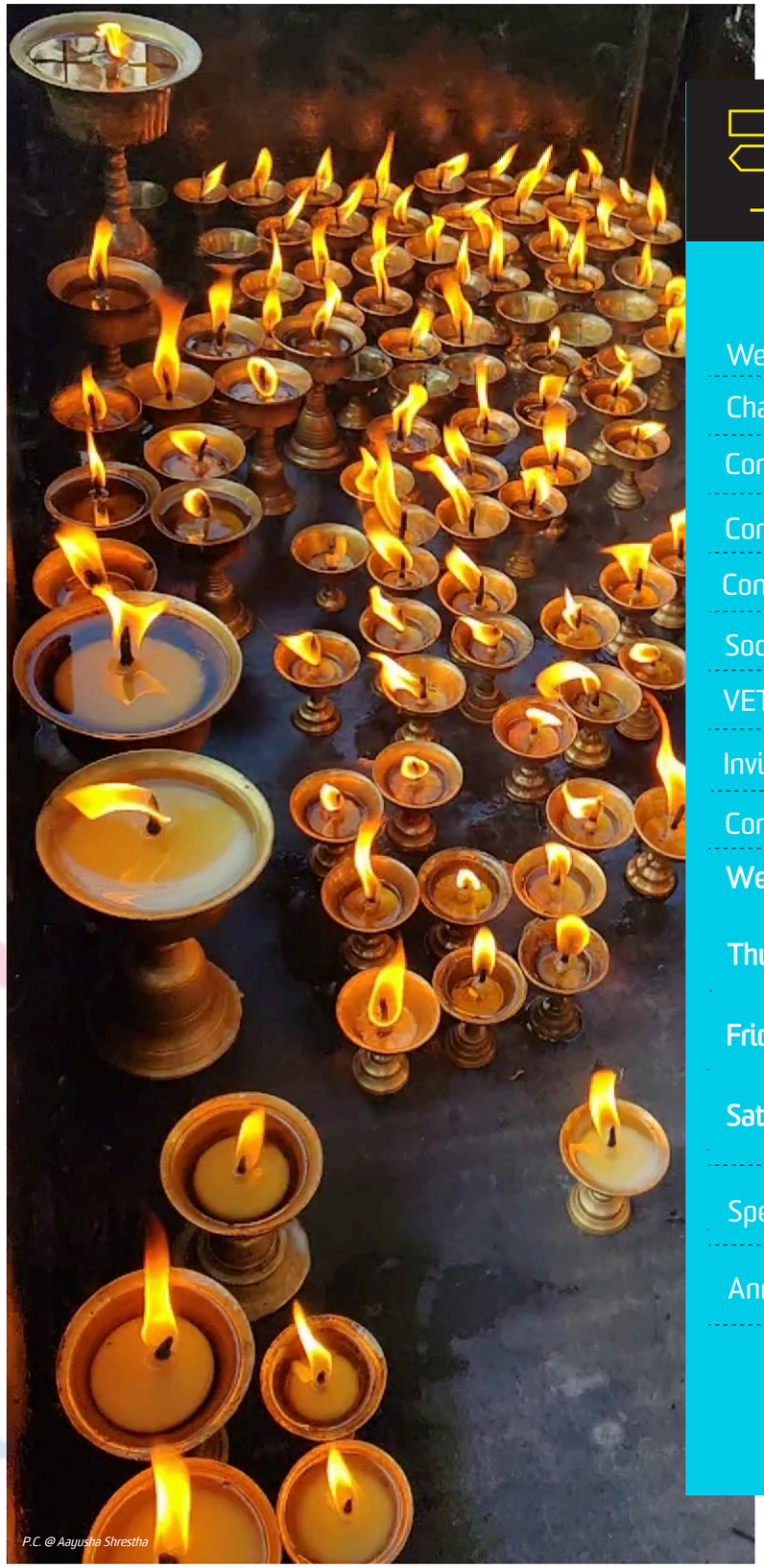
15-17 December

Technical Program

SPRINGER NATURE

TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Department of Mechanical and Aerospace Engineering
LALITPUR PULCHOWK NEPAL

GOVERNMENT OF NEPAL
Ministry of Education, Science and Technology



P.C. @ Aayusha Shrestha

Table of Content

P.C. @ Subodh Gaihre

Welcome Message

Dr. Surya Prasad Adhikari

We are pleased to organize this installment of the prestigious International Conference on Vibration Engineering and Technology of Machinery. The VETOMAC 2022 is the 17th installment of this conference, and the largest and most prominent technical conference ever organized in Nepal. We are proud to be the organizers of the conference after a roster of prominent global institutions in the United Kingdom, Taiwan, Poland, Australia, Portugal, Brazil and India. We are also very delighted to welcome all of our participants to Nepal, and we hope that you'll have a wonderful time here. Finally, I would like to thank our sponsors for supporting this conference, which has enabled us to organize this event as a shining example of what a Nepali institution can accomplish in the global research and academic arena.

Head

Department of Mechanical and Aerospace Engineering

Er. Pramila Devi Shakya Bajracharya

It is our immense pleasure to be associated with the International Conference on Vibration Engineering and Technology of Machinery (VETOMAC 2022). Nepal has tremendous potential of Hydropower Generation. Nepal has entered in the era of energy surplus during the wet season months and we are in the position to export power to neighboring countries, which is backed by the recent data of units of electricity trade with India. The conference's theme "Condition Monitoring of Hydropower Systems" is in line with priority sector of national interest.

Machinery equipment and components including the electromechanical components of hydroelectric plants is one of the major imports of our country. Knowledge dissemination in the field of machinery vibration is of high importance in this regard.

The Ministry would like to appreciate Institute of Engineering, Tribhuvan University for planning this conference and bringing up researchers in this field to share their findings and experiences.

On behalf of Ministry, I would like to welcome you all and wish a great success of the conference.

Secretary

Ministry of Education, Science and Technology

Chairman's Note

Dr. Nalinaksh S. Vyas
Professor
Department of Mechanical Engineering
Indian Institute of Technology Kanpur
Kanpur, 208 016.

Former *Chairman,*
Technology Mission for Indian Railways (*TMIR*)
Ministry of Railways, Government of India

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Former *Vice Chancellor*
Rajasthan Technical University

It gives me immense pleasure to welcome you to the 17th International Conference on Vibration Engineering and Technology of Machinery (VETOMAC 2022), in Kathmandu, Nepal.

Founded by Late Prof. J.S. Rao, after the first Conference in Bangalore, India in the year 2000, over the years VETOMAC has been organised at various venues across Asia, Europe, Americas and Australia, with involvement of academic and research institutes and active participation from industry. However, this is the first instance of it being organised in a neighbouring SAARC nation.

The organisers at the Institute of Engineering (IoE), Tribhuvan University, Nepal, have been able to put together an extraordinary effort in hosting the conference within a short period in the aftermath of the COVID pandemic. IoE is one of the five institutes that constitute the Tribhuvan University, which is the first national institution of higher education in Nepal.

The main theme of the conference is Condition Monitoring of Hydropower Systems. More than 92% of electricity in Nepal is derived from Hydropower and its relevance for Nepal and the global vibration community is underlined by the fact that currently, there are 124 projects in operation in Nepal, and another 244 projects have obtained licenses for construction.

Like on earlier occasions VETOMAC – XVII has been successful in bringing together researchers and engineers across the globe, to share their research experiences in the field of vibration engineering and technology of machinery.

Along with the colleagues in the Advisory and Organising Committees, I extended a warm welcome to you at VETOMAC 2022 December 15-17, Kathmandu.

Nalinaksh Vyas.

(Nalinaksh S Vyas)

VETOMAC 2022 Committees

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Prof. Dr. Sushil Bajracharya (*IOE, Nepal*)
Dr. Indra Prasad Acharya (*IOE, Nepal*)
Prof. Dr. Sangeeta Singh (*IOE, Nepal*)

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Prof. Dr. Nalinaksh S. Vyas (*IIT Kanpur, India*)

Conference Co-Chair:
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Prof. Dr. Mahesh Chandra Luintel (*IOE, Nepal*)

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Advisory Committee (current):
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Prof. Dr. Gokarna Bahadur Motra, Head, DCE, IOE Pulchowk, Nepal
Prof. Dr. Laxman Poudel, Coordinator, MS-MSDE, IOE Pulchowk, Nepal
Prof. Dr. Ram Krishna Maharjan, Head, DCEE, IOE Pulchowk, Nepal
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Dr. Sanjay Upreti, Head, DA, IOE Pulchowk, Nepal
Prof. Dr. Ram Kumar Sharma, Head, DASCE, IOE Pulchowk, Nepal

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Dr. Sudip Bhattrai (IOE, Nepal)

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Dr. Ajaya Kumar Jha (*IOE, Nepal*)
Dr. Hari Bahadur Darlami (*IOE, Nepal*)
Dr. Sanjeev Maharjan (*IOE, Nepal*)
Rajesh Kaji Kayastha (IOE, Nepal)
Yasodha Adhikari (IOE, Nepal)

Members:
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Aayush Bhattarai (*IOE, Nepal*)
Laxman Motra (*IOE, Nepal*)
Kamal Darlami (*IOE, Nepal*)
Neeraj Adhikari (*IOE, Nepal*)
Navin Kumar Jha (*IOE, Nepal*)
Tek Raj Subedi (*IOE, Nepal*)
Ashish Karki (IOE, Nepal)
Arun Bikram Thapa (IOE, Nepal)
Chandrika Adhikari (IOE, Nepal)

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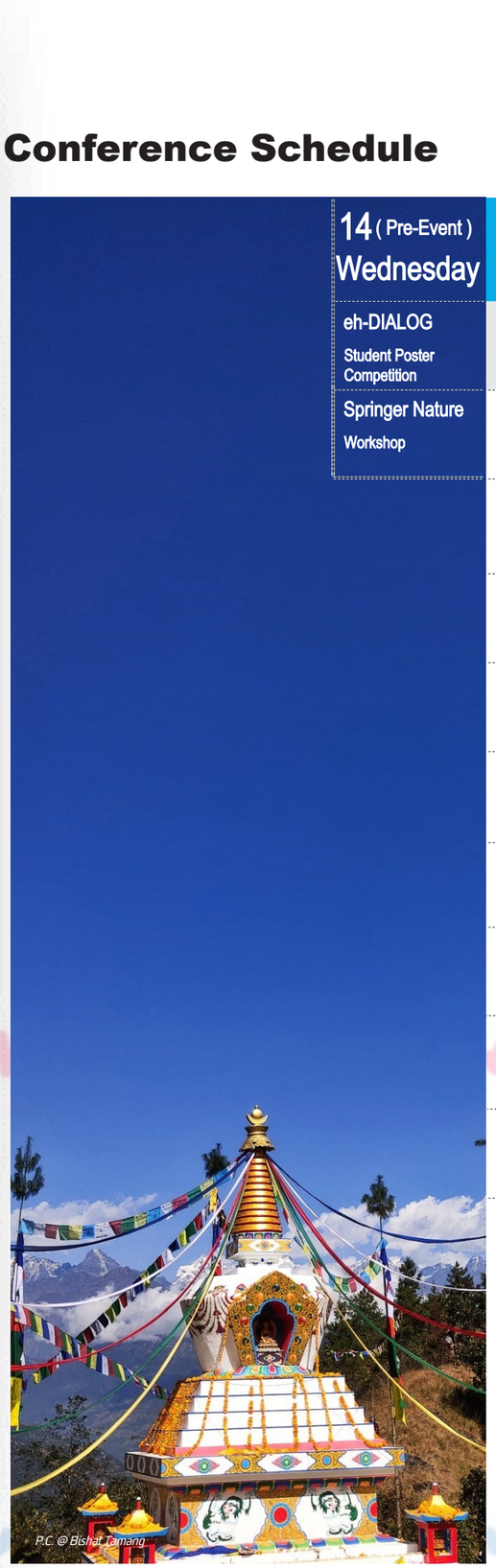
Prof. Rajiv Tiwari, IIT Guwahati, India (Chairman)
Prof. Y. S. Rammohan, B.M.S.C.E, Bengaluru, India
Prof. A. K. Darpe, IIT Deilhi, India
Prof. Mayank Tiwari, IIT Patna, India
Dr. Shree Raj Shakya, IOE Pulchowk, Nepal

Conference Schedule

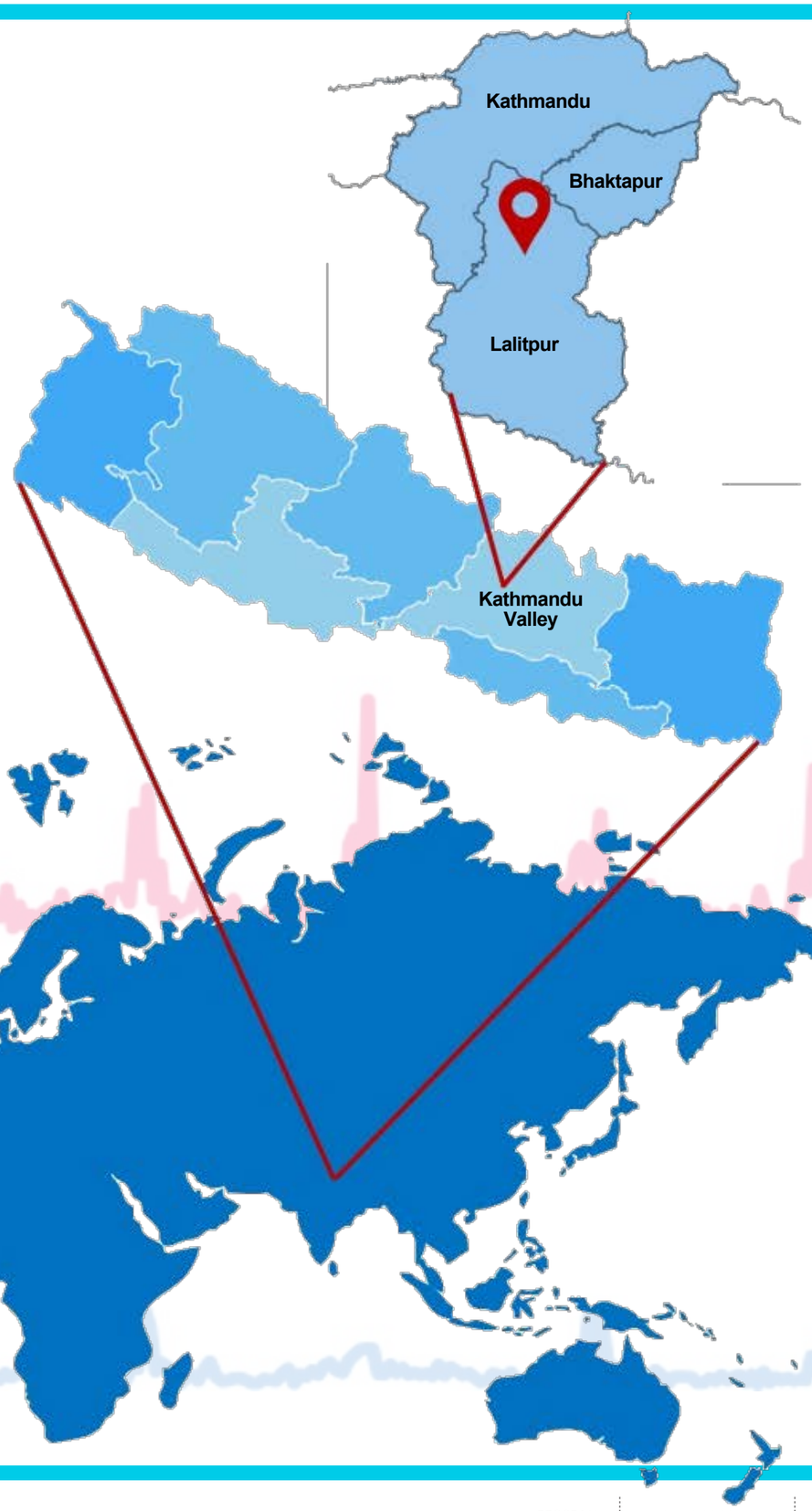
14 (Pre-Event) Wednesday	15 Thursday	16 Friday	17 Saturday
eh-DIALOG Student Poster Competition	8.00 - 9.00 Registration	8.00 - 9.00 Registration	9.00 - 10.00 Networking
Springer Nature Workshop	9.00 - 9.30 Welcome Address	9.00 - 9.30 Sonal Choudhary	10.00 - 10.30 Diego Galar
	9.30 - 10.00 Opening Ceremony	9.30 - 10.00 A.R. Mohanty	10.30 - 11.00 Nalinaksh S. Vyas
	10.00 - 10.30 Tea Break	10.00 - 10.30 Chandrasekhar Natraj	11.00 - 11.30 T. K. Datta
	10.30 - 11.30 Introduction and Instructional Session	10.30 - 11.00 Tea Break	11.30 - 12.00 Jyoti Sinha (online)
	11.30 - 12.00 Ramould Rzadkowski	11.00 - 11.30 Zuzana Dimitrovova	12.00 - 12.30 Len Gelman (online)
	12.00 - 12.30 Asoke Nandi	11.30 - 12.00 C W Lim	12.30 - 13.30 Lunch Break
	12.30 - 13.30 Lunch Break	12.00 - 12.30 Grzegorz Litak	13.30 - 14.50 Technical Sessions
	13.30 - 14.50 Technical Sessions	12.30 - 13.30 Lunch Break	14.50 - 15.20 Tea Break
	15.00 - 15.20 Afternoon Break	13.30 - 15.20 Technical Sessions	15.20 - 16.40 Technical Sessions
	15.20 - 17.00 Technical Sessions	15.20 - 19.00 Excursion	16.40 - 18.00 Closing Ceremony


P.C. @ Bishal Tamang

Conference Venues

IOE, Pulchowk Campus

1. D-Hall
2. ICTC Hall
3. CES Hall
4. Hotel Himalaya



Social Events

The conference will include a packed social program for delegates and accompanying persons including memorable dinners at some of the most outstanding venues in the Nation's capital.

Networking lunches and coffee breaks will also be served throughout the conference for all delegates.

Thursday Evening

VETOMAC Welcome Dinner
Nepali Traditional Cuisine
(for all delegates and accompanying persons)

Enjoy traditional Thakali cuisine which has a blend of Tibetian, Nepalese, and Indian influences. It is renowned for its use of spices and herbs and its distinct flavour profile.

Friday Evening

Excursion
Choose your excursion among the historic places and temples of Kathmandu valley.
(for all delegates and accompanying persons)

Kathmandu is and has been for many years the epicenter of Nepal's beauty and cynosure of the animates arena where flocks of tourists from the worldwide locations pay a call on. Relived the ancient world while exploring the city's ancient monuments, temples, palaces, streets. And explore the rich culture and lifestyle of native people of Kathmandu.

Saturday Evening

Closing Ceremony
Hotel Himalaya ***(by invitation only)***

A networking evening at the close of the conference.

P.C. @ Nitesh Swarnakar

ORGANIZERS

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Acknowledgement

The organizing committee thanks the following bodies for their support.

- IOE Dean's Office
- IOE Pulchowk Office of Campus Chief
- Center for Energy Studies
- Information and Communication Technology Center, IOE

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Keynote Speakers

Prof. Chandrasekhar Natraj
Founding Director of Center for Nonlinear Dynamics & Control

Prof. A.R. Mohanty
Head of Mechanical Engineering
IIT Kharagpur

Prof. Asoke Nandi
Head of Electronic And Computer Engineering
Brunel University

Prof. N. S. Vyas
IIT Kanpur
VETOMAC 2022 Chairman

Prof. C W Lim
Editor of Journal of Mechanics of Materials and Structures City University of Hongkong

Prof. Diego Galar
Division of Operation and Maintenance Engineering
Lulea Univeristy of Technology

Prof. Jyoti Sinha
Head of Dynamics Laboratory And Structures
University of Manchester

Prof. Grzegorz Litak
Head of Department of Applied Mechanics
Technical University in Lublin

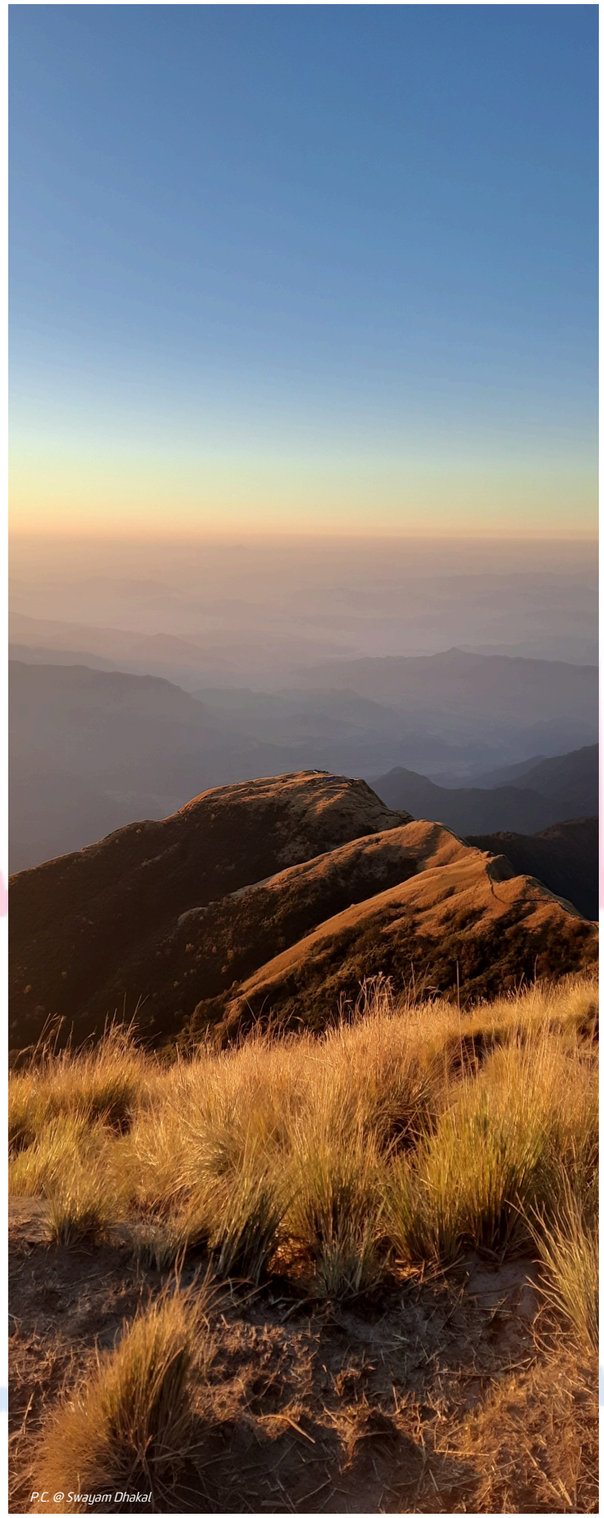
Prof. Len Gelman
Chair in Signal Processing and Condition Monitoring
University of Huddersfield

Emeritus Prof. T. K. Datta
Department of Civil Engineering
IIT Delhi

Prof. Zuzana Dimitrovova
Department of Civil Engineering
Nova University of Lisbon

Prof. Romuald Rzadkowski
Head of Aeroelasticity Department
Polish Academy of Sciences

Conference Delegates



P.C. @ Swayam Dhakal

Er. Pramila Devi Shakya Bajracharya
Secretary of Ministry of Education, Science and Technology

Prof. Sashidhar Ram Joshi
Dean of Institute of Engineering

Dr. Indra Prasad Acharya
Campus Chief of Pulchowk Campus, Institute of Engineering

DIALOG

Student Poster Competition

Time: 11.00-16.00
Venue: IOE Pulchowk

Five finalist posters will be selected for presentation on 17th of December.

Student Committee Members

Abhishek Bhandari
Anjana Thapa Magar
Ganesh Dhungana
Hricha Aryal
Jaya Paudel

Krishna Gupta
Lujaa Maharjan
Nischal Shrestha
Prashant Prasar
Prayash Phuyal

Rakesh Chaudhary
Rupesh Dahal
Saphal Gandhari
Sarthak Pandey
Toran Bahadur Niroula
Yukesh Karki

P.C. @ Dhananjay Shah

SPRINGER NATURE

Workshop for 'Scientific Writing'

Time: 16.00-17.30

Presenter: Ms. Priya Vyas
Editor, Applied Sciences and Engineering

1. Writing for International Journals: Structure, Style and Accuracy
2. Selecting a Journal for your Manuscript
3. Peer Review and you
4. Publication Ethics
5. Plagiarism, Citations, Open Access
6. Avoiding pitfalls

For more details, visit: mech.pcampus.edu.np

P.C. @ Manish Shrestha

Thursday 15 December

08.00-09.00	**Registration**
09.00-09.30	Welcome Address from Conference Committee
09.30-10.00	Opening Ceremony
10.00-10.30	**Tea Break**
10.30-11.00	About IOE and DMAE
11.00-11.30	Instructional Session and Transition
11.30-12.30	**Plenary Session**
11.30-12.00	**Romuald Rzadkowski** *Flutter Analysis Of Steam Turbines With Taking Into Account Exhaust Hoo*
12.00-12.30	**Asoke Nandi** *Condition Monitoring Using Vibration Signals with Compressive Sampling and Artificial Intelligence*
12.30-13.30	**Lunch Break**
13.30-14.50	**Early Afternoon Session** *Technical Sessions : CM-S01, VAFSI-S02, RD-S03, DCT-S04*
15.00-15.20	**Afternoon Break**
15.20-17.00	**Late Afternoon Session** *Technical Sessions : CM-S05, VAFSI-S06, RD-S07, DCT-S08*

P.C. @ Manoj Bhatta

Early Afternoon Session 13.30 - 14.50

Technical Session CM-S01 : Condition Monitoring — D-Hall

Chair: A K Jain

VETOMAC2022-004

Signal based condition monitoring of rolling element bearings with defects

Chandrasekaran, Sah

VETOMAC2022-005

Comparative Analysis of various Machine Learning and Deep Learning Approaches for Ball Bearings using Case Western Reserve University Dataset

Paudel, Bhatta, Sapkota, Bhattarai

VETOMAC2022-012

Combustion and wake instabilities in oblique detonation waves induced by blunt bodies

Adhikari, Tang, Bhattrai

VETOMAC2022-022

Optimization of noise impact on wheeled mobile robot by Monte Carlo simulation method

Isher, Sapkota, Maharjan

VETOMAC2022-193

Supervised Machine Learning model for condition monitoring using cross modality transfer learning

Ahir, Tewari

Technical Session VAFSI-S02 : Vibration Analysis and FSI — CES-Hall 1

Chair: Pramod Shrestha

VETOMAC2022-006

Experimental vibration analysis and control of a misaligned rotor train system incorporated with active magnetic bearing

Gautam, Tiwari

VETOMAC2022-021

Assessment of the impact of blast wave on subvertical geographical terrain using numerical techniques

Paudel, Bhattrai, Darlami

VETOMAC2022-023

Study of pressure pulsations of a Francis turbine due to eroded guide vanes

Shrestha, Poudel, Shrestha, Thapa, Qian, Guo, Chitrakar

VETOMAC2022-191

Random Vibration Fatigue Life Calculation of Transit Compressor Package

B, B, Valand Thaker

VETOMAC2022-042

Dynamic modelling and response of a pelton bucket

Tiwari, Luintel, Ghimire, Chaudhary

Technical Session RD-S03 : Rotor Dynamics — (Hybrid Mode) — CES-Hall 2

Chair: Rajiv Tiwari

VETOMAC2022-045

Dynamic Stall on Oscillating NACA 4412 Airfoil

Pandey, Timsina, Gautam, Subedi, Darlami, Bhattarai, Bhattrai

VETOMAC2022-084

Rotordynamic analysis of the bridge configured wounded (bcw) induction motor due to electromechanical forces

Deore, ., Brahma, Kalita

VETOMAC2022-086

Modelling and numerical analysis of a gear-rotor system with transmission error and bowed-shaft integrated with active magnetic bearings

DAS, Tiwari, Bordoloi

VETOMAC2022-087

Experimental Evaluation of Payload Induced Oscillations of an Unmanned Rotorcraft System

Bhattarai, Karki, Bhattrai, Rimal

Technical Session DCT-S04 : Dynamics, Characterisation & Tribology — ICTC-Hall

Chairs: Mayank Tiwari

VETOMAC2022-018

Unsteady numerical analysis of transonic buffeting over supercritical airfoil

Acharya, Bhattrai, Poudel

VETOMAC2022-025

Dynamic Characteristics and Flying Quality Assessment of a Twin-Boom Fixed-Wing Unmanned Aerial System

Karki, Bhattrai, Darlami

VETOMAC2022-035

Numerical Study in Straight-through, Staggered and Stepped labyrinth seals of Francis Turbines

Rijal, Poudel, Neopane, Dahlhaug, Chitrakar, Bhattarai

VETOMAC2022-208

Optimal Distribution of Propeller Dynamic Balancing Correction Weights to Match Pre-defined Attaching Points

Thapa, Bhattrai, Poudel

VETOMAC2022-066

Design Development and Analysis of Flywheel Energy Storage System: A Review

Khan, Tiwari, Nemade

Late Afternoon Session 15.20 - 17.00

Technical Session CM-S05 : Condition Monitoring — D-Hall

Chair: Tri Ratna Bajracharya

VETOMAC2022-024

Theoretical Investigations on a Tunable Linear Piezoelectric Vibration Energy Harvester

R, B, Saha

VETOMAC2022-031

Phase field modeling for fracture mechanics applications

Sidharth, Rao

VETOMAC2022-041

Experimental Study of Characteristics Signals Produced in Francis Turbines Exposed to Erosive Environment

Poudel, Kapali, Thapa, Zhongdong , Zhiwei, Sapkota, Chitrakar, Chitrakar

VETOMAC2022-063

Robust Featurization Technique for Fault Diagnosis and Prognosis of Rolling Element Bearing Using AI and ML Methodologies.

KANDAGAL, Abbigeri

Technical Session VAFSI-S06 : Vibration Analysis and FSI — CES-Hall 1

Chair: Mahesh Chandra Luintel

VETOMAC2022-120

Vibration analysis and control study of offshore jacket platform using sma dampers for wave and seismic loadings

Hazarika, SRINIVAS

VETOMAC2022-049

Coupled field harmonic analysis on a flat cantilever plate for deicing studies

KUMAR, S, S, Charantimath, K V, KANDAGAL

VETOMAC2022-072

Study and Analysis of PEEK material for In-house manufacturing of 1U CubeSat Structure in Nepal

Sapkota, Shrestha, Silwal, Sayanju, Dhungana, koirala, Shrestha, Thike, Maskey

VETOMAC2022-118

Harvesting energy with two loosely coupled horizontal beams

Wolszczak, Litak, Koszewnik, Naifar, Bradai, Kanoun, Rysak

Technical Session RD-S07 : Rotor Dynamics (Hybrid Mode) — CES-Hall 2

Chair: Sudip Bhattrai

VETOMAC2022-198

Effects of variation of mid-spiral angle of bevel gear on the vibration of a gearbox

Gollapudi , Prasad, Shakya, Sekhar

VETOMAC2022-016

Mathematical simulation of vibration signature of the defective bearing element

Chandrasekaran, J, K, Rao

VETOMAC2022-Keynote

Prof. Rajiv Tiwari

Technical Session DCT-S08 : Dynamics, Characterisation & Tribology — ICTC-Hall

Chair: Surya Prasad Adhikari

VETOMAC2022-099

Comparison of new fuzzy logic controller algorithm and classical proportional–integral–derivative controller (PID) controller for trajectory tracking

Ghimire, Dulal, Rawal

VETOMAC2022-068

Dynamic Analysis and Optimal Control of a Single-Link Flexible Manipulator

Ranjan, Dwivedy, Dwivedy

VETOMAC2022-076

Design, Modeling, and Control of Active Hydraulic Suspension System for Vehicles

Subedi, Koirala, Luintel

VETOMAC2022-077

Study of Motorcycle Rear Suspension Behavior with Length of Swing Arm and it's Inclination Angle

Subedi, Pandey, Luintel, Bhusal

P.C. @ Batsal Bhusal

Friday 16 December

08.00-09.00	**Registration**
09.00-09.30	**Sonal Choudhary** *PEP talk about Journal of Vibration Engineering and Technologies: Meet our Editors!!*
09.30-10.30	**Plenary Session**
09.30-10.00	**A.R. Mohanty** *Recent Trends in Digital Technologies for Machinery Condition Monitoring*
10.00-10.30	**Chandrasekhar Nataraj** *Fault Detection in a Gear-Train System: Some Recent Research Results*
10.30-11.00	**Tea Break**
11.00-12.30	**Plenary Session**
11.00-11.30	**Zuzana Dimitrovova** *Semianalytical Approaches in Moving Load Problems*
11.30-12.00	**C W Lim** *Topologically Protected Wave Propagation in Acoustic Metamaterials*
12.00-12.30	**Grzegorz Litak** *Mechanical Energy Harvesting with Nonlinear Effects*
12.30-13.30	**Lunch Break**
13.30-15.20	**Early Afternoon Session** *Technical Sessions : CM-S09, VAFSI-S10, REFM-S11, DCT-S12*
15.20-19.00	**Excursion**
15.20-15.30	**Pick up at Pulchowk Campus Gate** *Participants will be picked for different sightseeing locations according to their preference*
15.30-19.00	**Buses depart for their respective locations** *Professional guide and student volunteers for all buses*

Early Afternoon Session 13.30 - 15.20

Technical Session CM-S09 : Condition Monitoring — D-Hall

Chair: Budhaditya Hazra

VETOMAC2022-047	VETOMAC2022-53	VETOMAC2022-058
Active Vibration Suppression with Disturbance Observer in In-pipe Inspection Robot **Sharma, Bashyal, Pillai, Suthakorn**	Development of Condition Monitoring of Hydropower System Using Vibration Sensor **Paudel, Sapkota, Chitrakar, Aryal, Bhattarai**	Numerical investigation of pressure fluctuations in Francis Turbine due to Fatigue crack in Runner blades **Bhattarai, Neopane, Dahlhaug, Chitrakar, Rijal**
VETOMAC2022-085	**VETOMAC2022-089**	**VETOMAC2022-Keynote**
A novel approach to quantitative identification of chaos in vibrational systems with hysteresis **Semenov, Meleshenko, Borzunov, Proshunin, Proshunin**	Experimental study of vibration level of mining dump truck: a comparative study **Dewangan, Mohanty, Mohanty**	**Prof. A. K. Darpe**

Technical Session VAFSI-S10 : Vibration Analysis and FSI — CES-Hall 1

Chair: Prem Nath Maskey

VETOMAC2022-207	VETOMAC2022-125	VETOMAC2022-136
Across - wind response control of chimneys with tuned mass dampers **Rahman, Jain, Jha, Datta, Bharti**	Transient Response Analysis of Simply Supported Pelton Turbine During Starting and Shutdown **Chaudhary, Tiwari, sherpaili, Luintel**	Nonlinear forced vibration analysis of laminated composite conical shells **Parvez, Beg, Saood, Husain Khan**
VETOMAC2022-137	**VETOMAC2022-143**	**VETOMAC2022-Keynote**
On the Nonlinear Steady State Periodic Forced Vibration Response of Rectangular Plates **Saood, Ali Khan, Beg**	Nonlinear Dynamic Analysis of a Span Morphing Telescopic Beam **Singha, Murugan**	**Prof. Y. S. Rammohan**

Technical Session REFM-S11 : Renewable Energy and Fluid Mechanics (HM) — CES-Hall 2

Chair: Rajendra Shrestha

VETOMAC2022-010	VETOMAC2022-011	VETOMAC2022-044
Performance analysis of gravitational water vortex power plant with spiral-conical basin and prospects of installation of stay vanes **Bajracharya, Niraula, Timilsina, Lama, Rasaily, Pathak**	Cfx analysis to study the effects of blade exit angle on performance of the centrifugal pump **Sah, Ghimire, Tamang, Adhikari**	Numerical Study of Pump as Turbine from the Perspective of Dynamic Stability **Pandey, Pokharel, Ghimire, Neopane, Chitrakar, Chitrakar**
VETOMAC2022-081	**VETOMAC2022-213**	**VETOMAC2022-Keynote**
Torque Curve Analysis in Pelton Turbine Bucket Based on Two-phase Unsteady Flow **Sapkota, Darlami, Bajracharya, Timilsina**	Statistical features of vibrations systems forced by stochastic impulses **Ozga, Litak , Wolszczak, Sulewski, Frankowska, Frankiewicz**	**Dr. Shree Raj Shakya**

Technical Session DCT-S12 : Dynamics, Characterisation & Tribology — ICTC-Hall

Chair: Sanjeev Maharjan

VETOMAC2022-104	VETOMAC2022-119	VETOMAC2022-129
Design of Chemical Propellant Thruster to Deorbit Nano satellite: StudSat-II **Sherpaili, Sah, Hegde, Chaudhary**	MPC-based trajectory generation for wheeled robot navigation **Subedi, Koirala, Luintel, Maharjan, Kharel, Acharya**	Investigation of chatter vibration on wire arc additive manufactured products during the milling operation **Rajput, Sharma, Mittal, Kapil**
VETOMAC2022-131	**VETOMAC2022-164**	**VETOMAC2022-Keynote**
Experimental investigation on air film thickness measurement of airfoil thrust bearing leading to performance evaluation under different operating conditions. **R N**	Influence Of Boundary Conditions On Dynamic Performance Of Railway Pantograph-Catenary System In Overlap Section **Jain, Vardhan, Krishna K, Paul Singh, Darpe, Saha**	**Prof. Mayank Tiwari**

Saturday 17 December

09.00-10.00	**Networking and Tea Break**
	Hotel Himalaya and IOE Pulchowk Campus Visit
	Poster Workshop: ehDIALOG
10.00-11.30	**Plenary Session**
10.00-10.30	Nalinaksh S. Vyas *Deep and Shallow-Parallel Machine Learning Protocols for Single and Multi-Label Fault Diagnosis in Rotating Machinery*
10.30-11.35	**HUC Video on Female Leadership in Academia**
10.35-11.00	Diego Galar XXXX
11.00-11.30	T. K. Datta *Control of the Nonlinear Dynamic Response of Offshore Semisubmersibles*
11.30-12.30	**Online Plenary Sessions**
11.30-12.00	Jyoti Sinha *Industrial Challenges in Vibration-based Monitoring in Faults detection, Diagnosis and Prognosis*
12.00-12.30	Len Gelman *XXXXXX*
12.30-13.30	**Lunch Break**
13.30-14.50	Early Afternoon Session *Technical Sessions : DCT-S13, CM-S14, CM-S15, VAFSI-S16*
14.50-15.20	**Tea Break**
15.20-16.40	Late Afternoon Session *Technical Sessions: CM-S17, VAFSI-S18, VAFSI-S19*
16.40-18.00	**Closing Ceremony**
16.40-17.25	Closing Remarks
17.25-18.00	Networking
18.00	**END OF CONFERENCE**

Early Afternoon Session 13.30 - 14.50

Technical Session DCT-S13 : Dynamics, Characterisation & Tribology — D-Hall

Chair: Rajesh Kaji Kayastha

VETOMAC-2022-154

Modal analysis of a flexible rotor supported on granular lubricated journal bearing

Rahmani, Dutt

VETOMAC-2022-155

The Analysis of Chucking of Workpiece on Chatter During Turning of Inconel 718 for Gas Turbine Application

Gururaja, Singh, Panigrahi, S

VETOMAC2022-157

On the unique mathematical analysis of magneto-rheological elastomers under large tension-compression oscillatory loadings

Vatandoost, Sedaghati, Rakheja, Packirisamy , Chandramohan

VETOMAC2022-161

A parametric study of effect of three-axle railway bogie wheelbase on vertical dynamics of track.

Karn, Yadav, Gautam, Vyas

Technical Session CM-S14 : Condition Monitoring — CES-Hall 1

Chair: Sailesh Chitrakar

VETOMAC2022-090

A case study of noise control in domestic mixer grinder

Pradhan, Kumar, Mohanty

VETOMAC2022-106

Erosion and cavitation induced vibration in kaligandaki a hydropwer plant: a case study

Aryal, Chitrakar, Shrestha, Jha

VETOMAC2022-111

Impact of Maintenance on Performance and Reliability for Hydropower Plant: A Case Study of Panauti Small Hydropower Plant

Pandey, Shrestha, Bhattarai

VETOMAC2022-128

Condition monitoring of pump systems in water supply facilities using vibrational analysis

Dhakal, Pandey, Paudel, Shrestha, Adhikari, Pandey

Technical Session CM-S15 : Condition Monitoring (Hybrid Mode) — CES-Hall 2

Chair: Laxman Poudel

VETOMAC2022-133

Single-sensor analytics for real-time monitoring of dynamical systems through error-feedback mechanism

Panda, Bhowmik, Hazra

VETOMAC2022-152

Machine learning based fault classification for helicopter gearbox using acceleration signals

Subramaniam Ashwin, Mohan, Chandramohan, Ali

VETOMAC2022-149

Analysis of occupational exposure to whole-body vibration in the activity of mechanized extraction of eucalyptus wood

Miyajima, Andrade Lima, Soares Rocha, Simões

Technical Session VAFSI-S16 : Vibration Analysis and FSI — ICTC-Hall

Chair: Nawaraj Bhattarai

VETOMAC2022-144

Static and Dynamic Behaviour Analysis of a Composite Material for Wind Turbine Blade using Finite Element Analysis

Bhandari, Adhikari, Bhandari , Timilsina, Bastakoti

VETOMAC2022-159

Design and Analysis of Radial Flux MR Damper for E-bike applications using Radial Basis Function with different control strategies

Pinjala , Pendyala, Kumar

VETOMAC2022-169

Signature Investigation of Erosion Induced Vibration in Francis Turbine

Shrestha, Gurung, Ghimire, Chitrakar, Pradhan

VETOMAC2022-187

Analytical and numerical Investigations on an NES based vibration absorber energy harvester system

B, I R, Philip

Late Afternoon Session 15.20 - 16.40

Technical Session CM-S17 : Condition Monitoring — D-Hall

Chair: Chandrasekhar Natraj

VETOMAC2022-156

Multi-parametric model predictive control applied to semi-active suspension system

Saini, KUMAR, Chandramohan, Sedaghati, Packirisamy

VETOMAC2022-160

Suspended Microfluidic Platform for Engine Condition Monitoring

Oseyemi, Sedaghati, Pillay, Rakheja, Chandramohan, Packirisamy

VETOMAC2022-205

New Tip-Timing Model For Analysis Of Steam Turbine Rotor Blades

Jerzy, Rzadkowski, Miroslaw, Ryszard

Technical Session VAFSI-S18 : Vibration Analysis and FSI (Hybrid Mode) — CES-Hall 2

Chair: Zuzana Dimitrovova

VETOMAC2022-040

Study on the effect of lateral-torsional coupling on the dynamic vibrational characterstics of flexible rotating cantiliver shaft-disk system

Ghimire, Tiwari, Bajracharya , Luintel

VETOMAC2022-124

Initial investigation on tunnable bandgaps created by vibration absorbers made of magnetorheological elastomers

Marques, Cesar, Cassol, Gonçalves, Silveira

VETOMAC2022-051

Effect of Hybridization of a GLARE Plate With Central Cut-off Subjected to Offset Low Velocity Impact

Kakati, Chakraborty

Technical Session VAFSI-S19 : Vibration Analysis and FSI — CES-Hall 1

Chair: N S Vyas

VETOMAC2022-210

Signature investigation of erosion induced vibration in francis turbine

Shrestha, Gurung, Ghimire, Chitrakar, Pradhan

VETOMAC2022-212

Vibration Analysis of Carbon Steel pipes in Oil industry

Zarog

VETOMAC2022-064

Nonlinear Active Vibration Absorber For Simultaneous Primary, Principal Parametric And Subharmonic Resonances With 1:2 Internal Resonance Conditions

Mohanty, Dwivedy

VETOMAC2022-121

Fixed-Guided Beam Based Piezoelectric Energy Harvester (FG-PEH): An Experimental Investigation

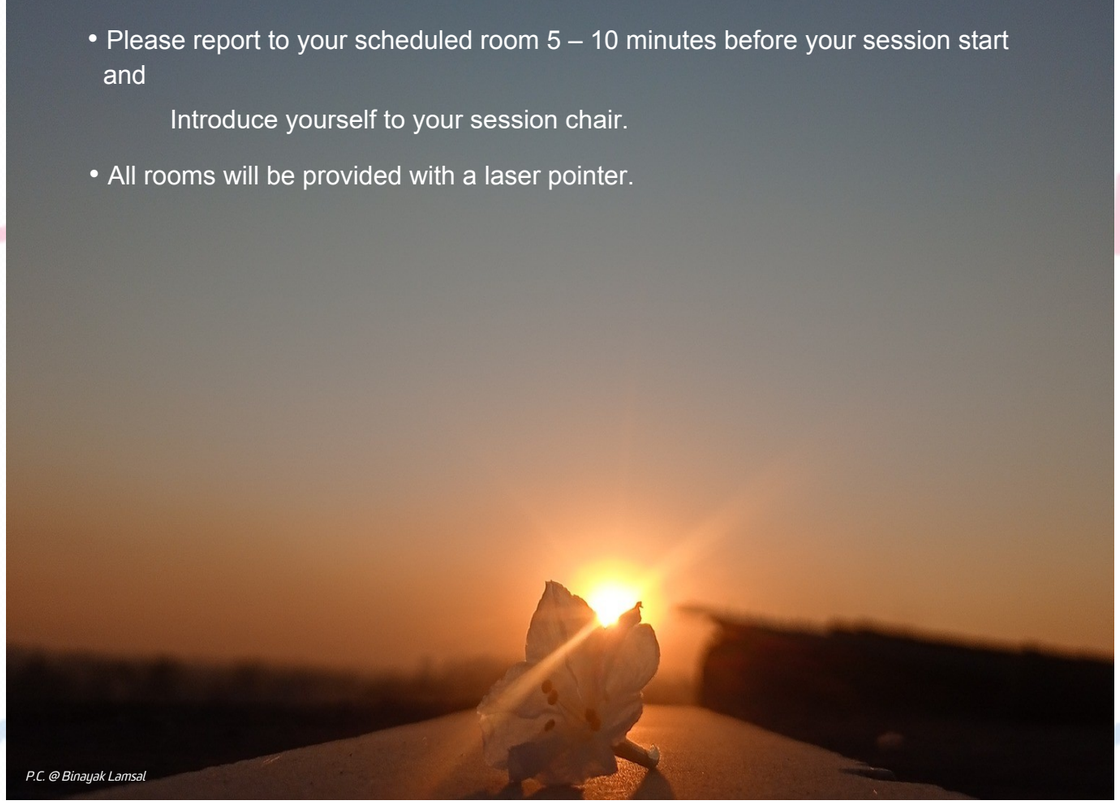
Roy, Garg, Borgohain, Dwivedy

Speaker Instructions

Please follow the instructions below when preparing and presenting your presentations for VETOMAC2022

- 18-min speaking session have been assigned to all speakers (excluding Keynotes). Please keep your presentation to 10 – 15 min. The remaining time will be for a short Q&A and presenter changeover, and audience room change.
- Presenters will be given a 3min and 1min warnings when approaching 15min total speaking time. Speaking time will be strictly monitored to maintain scheduling across the parallel sessions.
- If using slides, the preferred format is 16:9, however, 6:4 is also supported.
- You are to bring your slides to the speaker preparation room no later than the morning of your presentation. Slides will then be uploaded to the conference computer.
- Please report to your scheduled room 5 – 10 minutes before your session start and

  Introduce yourself to your session chair.
- All rooms will be provided with a laser pointer.



P.C. @ Binayak Lamsal

The Tribhuvan International Airport is 5 km from the conference venue. Adequate lodging and boarding facilities are also available within a radius of 2 km from the conference venue. The IOE Pulchowk campus is located at the heart of the Lalitpur district, and it is within walking distance of the popular Jhamsikhel as well as Patan Durbar Square areas, with many historical sites and popular restaurants. A small area around IOE Pulchowk alone hosts all amenities that the Kathmandu valley can provide. Public transportation, walkways, and cycling lanes are available around the campus, and the Pathao ride-sharing app is popular in the valley, so getting around is never a problem.

P.C. @ Bijaya Mandal

Hotel options available in the close vicinity of the conference venue are:

1. Hotel Himalaya, Lalitpur
2. Hotel Shangrila Blue, Lalitpur
3. Hotel Kutumba, Lalitpur

The Jhamsikhel, Mangal Bazaar and Sanepa areas host a large number of Airbnb accommodations at affordable rates. Please visit airbnb.com and search for accommodations within a radius of 2 km from Institute of Engineering, Pulchowk Campus, and you'll find whatever you prefer.

Restaurant options recommended just around the conference venue, within a 5 minute walk, are:

1. Dee's Cafe, Pulchowk Campus
2. Entrance Cafe, Chakupat
3. Annapurna Sweets, Patan Dhoka
4. Dhokaima Cafe, Patan Dhoka

The Jhamsikhel/Sanepa area, which is at 10-15 minutes walk from the conference venue, is the most vibrant area in Lalitpur for restaurants, cafes and bars. You'll find a place where you can watch the world cup over a cold pint of Nepali draft beer (e.g., visit Moksh Bar or Dokodeli). If you have a very specific taste or requirement, just ask one of the organizers or volunteers and it'll be sorted.