

**Program**  
**Research Papers from FEN Submitted for The International Conference on Natural Science and Engineering (ICNSE2024): Fostering Science, Technology, and Innovation for Sustainable Development in Lao PDR and Beyond**

**Day-1: 5th November 2024**

Time	Agenda	Moderated by	Location
<b>Grand Opening Session at NUOL (Dongdok Campus)</b>			
08:00-08:30	Registration	Secretariat Committee	Lecture Hall of the Faculty of Economics and Business Management, National University of Laos (Dongdok Campus)
08:30-08:40	State the purpose and introduce the guests	Assoc. Prof. Dr. Sittixay XAYYAVONG Head of Research and Academic Service Office, NUOL	
08:40-09:00	Deliver the guidance and opening remarks speech	Dr. Souroudong Sundara, Vice Minister of Ministry of Education and Sports (MOES)	
09:00-09:10	Comment and give blessing	Ms. KOBAYASHI Miyako, Chief Representative of JICA Laos Office	
09:10-09:25	Report the scientific research of the National University of Laos	Assoc. Prof Dr. Dexanoulath SEANDOUANGDETH Acting President, NUOL	
09:25-09:45	Report of the development of Science, Technology and Innovation (STI)	Mr. Souksavath Sihapanya, Head of Science Supervision Department, MOES	
09:45-10:05	Group photo and coffee break	VIP Guests	
10:05-10:20	Keynote Speech, topic 1: Digital Transformation of the Lao PDR.	Mr. Keovisouk Solaphom, Vice Ministry of Technology and Communication	
10:20-10:35	Keynote Speech, topic 2: Development strategies of Energy and Mines of the Lao PDR.	Dr. Chansaveng Bounnong, Vice Ministry of Energy and Mines	
10:35-10:50	Keynote Speech, topic 4: The Economic Development in Laos: The Roles of Research and Development	Prof. Dr. Phouphet KYOPHILAVONG, Vice President of NUOL	
10:50-11:00	Addresses and Speech	Assoc. Prof. Dr. Piyapong Niamsup Assistant of the President of Chiang Mai University	
11:00-11:15	Q & A		
11:15-12:00	Officially open the exhibition event to celebrate: <ul style="list-style-type: none"> <li>National Science Day on 12 Oct, 37<sup>th</sup> anniversary</li> <li>National University of Laos Establishment, 28<sup>th</sup> anniversary</li> </ul>	<ul style="list-style-type: none"> <li>Science and Innovation Research Institute, MOES</li> <li>Entrepreneurship and Logistic Center, NUOL)</li> </ul>	Conventional Hall, NUOL
12:00-13:30	Lunch Break		
<b>ICNSE2024 Session at Faculty of Engineering (Sokpaluang Campus)</b>			
13:00-13:30	Registration	Secretariat Committee	Room 308, Electronics and



13:30-13:40	Brief Explanation of the Conference	Mr. Bounpaseuth Oupathana (MC)	Telecommunication Engineering Building, Faculty of Engineering (Sokpaluang Campus)
13:40-13:50	Make the Opening Remarks	Assoc. Prof Dr. Dexanoulath SEANDOUANGDETH Acting President, NUOL	
13:50-14:20	Invited Talk 1: Fostering Science, Technology, and Innovation for Sustainable Development in Lao PDR and Beyond	Prof. ABE Naoya, Institute of Science Tokyo	
14:20-14:50	Invited Talk 2: Strategy Plan for Lao Digital Transformation	Vannapha Phommathansy, Deputy Director General, Digital Government Cntr, Ministry of Technology and Communications, Lao PDR	
14:50-15:20	Invited Talk 3: Strategy Plan for Research of FEN	Vice Dean, Faculty of Engineering (TBC)	
15:20-15:50	Q & A + Panel Discussion	Keynote speakers & Moderator (Khamhou Saphouvong)	
15:50-16:00	Certificate Handover	Dean, Faculty of Engineering	
16:00-16:05	Group photo and closing remark for day 1	TBC	



**Day-2: 6th November 2024, at Faculty of Engineering (Sokpaluang Campus)**

Time	Group 1- LAB-1&2 (IT dept)		Group 2- LAB-3&4 (IT dept)		Group 3-Room A308 (ET Dept)		Group 4- Conference Room (IT dept)	
	1. Sustainable Infrastructure Development		2. Renewable Energy and Energy Efficiency		3. Climate Change and Environmental Sustainability		5. Smart Techonology and Dgital Transformation	
			4. Advanced Materials and Manufacturing				6. Science, Technology, Engineering, and Mathematics (STEM) Education	
	Agenda	Speaker	Agenda	Speaker	Agenda	Speaker	Agenda	Speaker
Presentation Session								
08:30-09:00	Registration							
09:00-09:05	Brief Explanation of the Session	Duangmixay Duansouvanh & Anousack Thammavong	Brief Explanation of the Session	Keonakhone Khounvilay & Youthanalack Vilaisarn	Brief Explanation of the Session	Sounthisack Phommachanh & Phoummixay SIHARATH	Brief Explanation of the Session	Khamphet Bounnady & Phosy Panthongsy
09:05-09:20	The Settlement Analysis of NT1HPP Roller Compacted Concrete Dam	Khamhou Saphouvong (ID26)	A Smart Lighting System in a Corridor for Effectively Energy Efficiency	Valasy Chounramany (ID01)	Air Quality, Climate Change issues: Challenges to Sustainability	Kraichat Tantrakarnapa (ID29)	Metaverse of Virtual Campus: Enhancing Education, Campus Tours, and Historical Engagement through Virtual Reality	Khamxay Leevangtou (ID27)
09:20-09:35	Predicting Soaked and Unsoaked California Bearing Ratios Using Simple and Multiple Linear Regression Models Based on Soil Index Properties	Khamphuey BOUNVILAY (ID23)	Design and Modeling the Energy Consumption Monitoring of the Irrigation Pumping Controller by Using IOT	Soumek INTHALA (ID02)	Personal Exposure of PM2.5 and PM1 among University Students and Researchers in Bangkok, Thailand by Using Low-cost Sensor	Htoo Wai Aung (ID28)	Strengthening the ICT Skill for Academic Staff of Public Schoolsin Vientiane Capital, Lao PDR.	Manolom CHANTHAVONG (ID03)
09:35-09:50	Feasibility Study To Use Crushing Stone Filler Instead Of Sand In Low Strength Concrete	Vernsone Phengsoulith (ID22)	Energy Increase through regulated Hybrid Production – Case study of Namkhan 3 Hydropower Plant	Sengprasong Phrakonkham (ID35)	Descriptive Analysis on the Impact of Thermal Environment on Construction Labor Productivity in Cambodia	Kinnaeth Vongchanh (ID32)	Vientiane Wardriving for Improving ICT Security and Safety Touristic Route in Urban	Sanouphab PHOMKEONA (ID04)
09:50-10:05	Break							
10:05-10:20	A Potential Development on Laos-Thailand Border Checkpoints	Sisouphanh PHOMMANIVONG (ID05)	Epoxy Coatings for Corrosion Protection of Steel rebar used in Reinforced Geopolymer Concrete	Sengphet Keokangdong (ID14)	Study on the process of coconut shell, bamboo and general charcoal briquettes	Phoummixay SIHARATH (ID08)	The Proposal of the performance of Web3JS and EtherJS base on Private Blockchain	Phonepadith Phoummavong (ID25)
10:20-10:35	Improvement Of Sub Base Materials With A California Bearing Ratio (Cbr) Lower Than 25% By Mixing The Lime Stone Powder (Caco3)	Vernsone Phengsoulith (ID21)	Characterizations and Electrospinning of PLMC/Fe3O4 Nanofibrous Composites for Biomedical Applications	Vilay Vannaladsaysy (ID24)	Removal of Lead from Synthesized Aqueous Solutions Using Bioadsorbents Derived from Anagricultural Waste	Chindavone SOMPASONG (ID19)	Design and Validation of Wireless Soil Monitoring System for Precision Crop Management	Thephalak CHANTHABOURY (ID15)
10:35-10:50	A Study on the Logistics and Multimodal Transportation System Connecting Lao PDR and Neighboring Countries Under the “Belt and Road Initiative: BRI” Strategy	Anousone OUTHAILATSADY (ID06)	Study the utilization of biochar derived from sugarcane waste combined with zero valent iron to enhance the biogas efficiency during the anaerobic digestion process for treating pig farm wastewater	Orlavanh Sonesouphap (ID17)	Environmental Heat Stress and Labor Productivity: A Case Study of Cambodian Construction Workers During Hot Months	Latin Heang (ID30)	Application of RTK-GNSS Network in Position Tracking of Seeding Robot	Pinkeo Khemkhamphoumee (ID16)



10:50-11:05	The Properties of Geopolymer Lightweight Cellular Concrete Using Fly Ash from Hongsa Power Plant	Chanthaphone SENGONKEO (ID34)	Bioethanol production from spoilage rice	Sangkhom singhalard (ID18)	Transition to Electric Mobility in Laos: A stated choice experiments to analyse willingness to pay and elasticity of EV demand	Tang Li (ID31)	Potassium Salt (KCL) Exploration Using The Electrical Resistivity Tomography (ERT) Survey At Nongbok District, Khammouane Province, Lao PDR	Khamvanh PHENGNAONE (ID20)
11:05-11:20	Stability Analysis and Evaluation Performance of EarthFilled Dam Under Extreme Climate: Case Study of Houy Lamphan Hydropower Dam, Xekong Province, South of Lao PDR.	Anan MANIVON (ID12)	Study the Effectiveness of Briquetted Biochar for Wastewater Treatment Case Study: Wastewater from Khouvieng Drainage Canal	Ouy OUTTHALANSY (ID09)	Spatial-Temporal Optimisation for Green Hydrogen Production: A Case Study of Laos	Lukas Schiren (ID33)	Q&A+Panel Discussion (11:05-11:50)	Chairman & Presenters
11:20-11:35	Inspection and Evaluation of damage Existing Bridge (Case study: Xechamphone Bridge and RC Bridge)	Khimmy OUNMANY (ID13)	Q&A+Panel Discussion (11:20-12:00)	Chairman & Presenters	Q&A+Panel Discussion	Chairman & Presenters	Certificate Handover (11:50-12:00)	Chairman
11:35-11:50	The construction management difference between Laos and China: the three dimensions model of Glonda and mobile accounting	Fushichang (ID36)	Certificate Handover (12:00-12:10)	Chairman	Certificate Handover	Chairman		
11:50-12:30	Q&A+Panel Discussion	Chairman & Presenters						
12:30-12:40	Certificate Handover	Chairman						
12:40-13:30	Lunch Break							
Roundtable Discussion & Workshop								
13:30-16:00	Agenda						Participants	Location
	Roubd table report outcomes of discussions and research, future plan						All chairmans and Moderator from FEN	Conference Room (IT department)
	Lao-CCG Workshop on Introduction to CCG Tools and Basic of Energy Engineering						CCG Committee	A308, Electronics and Telecommunication Engineering Building, Faculty of Engineerin
16:00-16:10	Closing Remarks/Dean, Faculty of Engineering						All	Room A308, Electronics and Telecommunication Engineering Building, Faculty of Engineerin





## AGENDA

### Lao-CCG Workshop on Introduction to CCG Tools and Basic of Energy Engineering

6<sup>th</sup> November 2024

Faculty of Engineering, NUOL

	Time	Agenda Item	Speaker
1	13:00-13:30	Solar Energy Engineering	Prof. Dr. Khamphone Nanthavong
2	13:30-14:00	Green Hydrogen and Ammonia	Dr. Phengxay Deevanhxay (FNS)
3	14:00-14:30	Waste to Energy Engineering	Dr. Keonakhone Khounvilay (FEN)
4	14:30-15:00	Biomass Energy Engineering	Assoc. Prof. Sengratry Kithavone
5	15:00-15:30	Introduction to Lao-CCG Network, CCG Tools, Open learn Course (Open University) and Funding Opportunity	Dr. Kirsty Mackinlay (CGE, UK)
6	15:30-16:00	Energy Modelling Tools (OSeMOSYS & FlexTool)	Dr. Sounthisack Phommachanh (FEN)

**Target Participants/Audience:** Representatives from government ministries, industry professionals, and Master's and bachelor's students.

#### Session Managers

Ms. Orlavanh Sonesouphap