**Concept Note**

**The 2025 NUOL International Conference on Science, Engineering and Innovation (ICSEI 2025), in Association with AUN/SEED-Net Regional Conference**

**November 27-28, 2025**

**Faculty of Engineering, National University of Laos, Vientiane Capital, Lao PDR**

**1. Title of the Conference**

"Promoting Science, Technology and Innovation for Sustainable Development in Lao PDR and Beyond"

**2. Conference Overview**

The International Conference on Science, Engineering and Innovation 2025 is an annual technical presentation event, hosted by the Faculty of Engineering at the National University of Laos (NUOL), aims to bring together leading academic scientists, researchers, policymakers, and industry experts to discuss and share insights on the critical role of science, technology, and innovation in driving sustainable development, both in Lao PDR and globally. This conference will serve as a platform for presenting cutting-edge research, exchanging knowledge, and fostering international collaborations to address key challenges related to sustainable development in sciences and engineering fields.

**3. Objectives**

The primary objectives of the conference are:

* To provide a forum for researchers, academics, and practitioners to exchange ideas, experiences, and advancements in the fields of sciences and engineering.
* To promote innovative research and technological solutions that contribute to sustainable development in Lao PDR and globally.
* To facilitate partnerships between academic institutions, government agencies, and industry stakeholders for joint research initiatives and practical applications of science and technology.
* To raise awareness of the importance of integrating science, engineering, and innovation into national and regional strategies for socio-economic development and environmental sustainability.

**4. Key Themes and Topics**

The conference will focus on a range of themes related to sciences, engineering, innovation and sustainable development, including but not limited to:

* Renewable Energy and Energy Efficiency
* Water management
* Sustainable Infrastructure Development
* Climate Change and Environmental Sustainability
* Advanced Materials and Manufacturing
* Smart Technologies and Digital Transformation
* Science, Technology, Engineering, and Mathematics (STEM) Education
* Innovation and Entrepreneurship for Sustainable Development
* Circular Economy Applications in waste management

**5. Target Participants**

The conference invites participation from a wide range of stakeholders from Laos, ASEAN countries and around the world, including:

* Academics and researchers from universities and research institutions
* Professionals and engineers from industries and companies
* Policymakers and government officials
* Students and young researchers
* Representatives from international organizations and NGOs

**6. Conference Structure**

The conference will feature a combination of keynote addresses, plenary sessions, panel discussions, and technical presentations. The structure includes:

* Keynote Speeches: Delivered by renowned experts in the fields of science, engineering, and sustainable development.
* Plenary Sessions: Featuring high-level discussions on key topics related to the theme of the conference.
* Technical Sessions: Organized around specific sub-themes, allowing participants to present and discuss their latest research findings.
* Poster Sessions: For young researchers and students to showcase their work.
* Panel Discussions: Bringing together experts from academia, industry, and government to discuss challenges and opportunities for science and technology in sustainable development.

**7. Expected Outcomes**

* Increased collaboration between researchers, government agencies, and industry stakeholders on sustainable development initiatives.
* Publication of conference proceedings with selected papers in a peer-reviewed journal.
* Recommendations for policy frameworks to support the integration of science and technology into sustainable development strategies in Lao PDR and the region.
* Strengthening of the research and innovation ecosystem at NUOL and its contribution to national development goals.

**8. Location and Dates**

* Venue: Crowne Plaza Vientiane, Vientiane Capital, Lao PDR.
* Dates: 27 – 28 November 2025.

**9. Conference Organizers**

The International Conference on Science, Engineering and Innovation 2025 is organized by the Faculty of Engineering, National University of Laos (NUOL), in collaboration with:

* AUN/SEED-Net
* Burapha University (Thailand)
* JICA HUGETECH “The Project for Strengthening Human Resource Development of Engineering and Technology for Industry Development in Lao PDR.”
* Climate Compatible Growth, UK
* Ministry of Education and Sports, Lao PDR.

**10. Sponsorship and Partnerships**

The main sponsors of conference are AUN/SEED-Net and JICA HUGETECH. In addition, we invite government agencies, international organizations, private companies, and other stakeholders to partner with us for this significant event. Sponsorship packages will be available for companies and organizations seeking to enhance their visibility and engagement with key players in the science, technology, and engineering sectors.

**11. Conclusion**

The International Conference on Science, Engineering and Innovation 2025 offers a unique opportunity to connect the academic, industrial, and policymaking communities in a collaborative effort to drive sustainable development. We look forward to welcoming participants from Lao PDR, ASEAN countries and around the world to join us in exploring how science, technology, and innovation can address the challenges and opportunities of sustainable development in the 21st century.

**12. Program**

**Tentative Program/Schedule**

***ICSEI 2025: Promoting Science, Technology, and Innovation for Sustainable Development in Lao PDR***

**Day-1: 27th November 2025**

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| **Time** | **Agenda** | **Moderated by** | **Location** |
| **Grand Opening Session** | | | |
| 08:00-08:30 | Registration | Secretariat Committee | Room 308, Electronics and Telecommunication Engineering, National University of Laos |
| 08:30-08:40 | State the purpose and introduce the guests | Dr. Khamla INKHAVILAY  Vice Head of Research and Academic Service Office, NUOL |
| 08:40-08:50 | Deliver the guidance and opening remarks speech | Prof Dr. Dexanourath SEANDOUANGDETH  President, NUOL |
| 08:50-09:10 | Opening remarks | AUN or AUN/SEED-Net representative |
| 09:10-09:20 | Presentation about AUN/SEED-Net | AUN/SEED-Net representative |
| 09:20-09:30 | Presentation on the ASEAN Engineering Journal (AEJ) | AEJ representative |
| 09:30-09:45 | Group photo and coffee break | All |
| 09:45-10:10 | **Keynote Speech, topic 1​:**  Decarbonization Pathways in Laos: The Challenges and Solutions | ​Prof. Dr. Phouphet KYOPHILAVONG, Vice President of NUOL |
| 10:10-10:35 | **Keynote Speech, topic 2:** Opportunities and challenges in recycling nutrients from wastewater treatments to agriculture for the sustainable development in Lao PDR | Prof. Hidenari Yasui (Japan) |
| 10:35-11:00 | **Keynote Speech, topic 3:** Bioelectrochemical Systems for Simultaneous Wastewater Treatment and Energy generation: Potentials and Challenges | Assoc. Prof. Dr. Md. Maksudur Rahman Khan (Brunei) |
| 11:00-11:25 | **Keynote Speech, topic 4:**  An example of a circular economy for the agriculture industry: Biogas-tannin water model. | Prof. Chantaraporn Phalakornkule (Thailand) |
| 11:25-11:50 | **Keynote Speech, topic 5:**  Energy efficacy modelling | Dr. Vignesh Sridharan (imperial College London, England) |
| 11:50-12:00 | Q & A | All |
| 12:00-13:30 | Lunch Break | All | ​ |
| ***ICSEI 2025 Session*** | | | |
| 13:00-13:30 | Registration | Secretariat Committee | Room 308, Electronics and Telecommunication Engineering Building, Faculty of Engineering (Sokpaluang Campus) |
| 13:30-13:40 | Brief Explanation of the Conference | Mr. Bounpaseuth Oupathana (MC) |
| 13:40-13:50 | Make the Opening Remarks | Prof Dr. Dexanourath SEANDOUANGDETH  President, NUOL |
| 13:50-14:20 | Invited Talk 1:  Strategy Plan for Research of FEN | Vice Dean, Faculty of Engineering |
| 14:20-14:50 | Invited Talk 2: Optimizing the Piping Production Process in Lao PDR for Enhanced Efficiency and Quality | Dr. Langkone Xaignavong  (TOYO Lao Company) |
| 14:50-15:20 | Invited Talk 3: Fostering Collaboration Between the Private Sector and Universities in Water Quality Analysis in Lao PDR | Mr. **V**ongsack Mixay  (Phanthamit Analytical Lab Co., Ltd.) |
| 15:20-15:50 | Invited Talk 4: Innovation for greener development | Mr. Somvang Thamavongsa (INNOGREEN Engineering Co., Ltd) |
| 15:50-16:20 | Invited Talk 5: Enhancing the development of Lao products for export to drive national economic growth | Ms. Latsamy Vetsaphong (Mekong Lao Export-Import Sole Co.Ltd) |
| 16:20-17:00 | Q & A + Panel Discussion |  |
| 17:00 | Closing remark | Dean, Faculty or Engineering |

**Day-2: 28th November 2025, at Faculty of Engineering**

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| **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)** | |
| Sustainable Infrastructure Development | | | Renewable Energy and Energy Efficiency | | Climate Change and Environmental Sustainability | | Smart Techonology and Dgital Transformation | |
| Advanced Materials and Manufacturing | | Water management | | 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 | Chairman | | Brief Explanation of the Session | Chairman | Brief Explanation of the Session | Chairman | Brief Explanation of the Session | Chairman |
| **09:05-09:20** | Topic | Presenter | | Topic | Presenter | Topic | Presenter | Topic | Presenter |
| **09:20-09:35** | Topic | Presenter | | Topic | Presenter | Topic | Presenter | Topic | Presenter |
| **09:35-09:50** | Topic | Presenter | | Topic | Presenter | Topic | Presenter | Topic | Presenter |
| **09:50-10:05** | **Break** | | | | | | | | |
| **10:05-10:20** | Topic | Presenter | Topic | | Presenter | Topic | Presenter | Topic | Presenter |
| **10:20-10:35** | Topic | Presenter | Topic | | Presenter | Topic | Presenter | Topic | Presenter |
| **10:35-10:50** | Topic | Presenter | Topic | | Presenter | Topic | Presenter | Topic | Presenter |
| **10:50-11:05** | Topic | Presenter | Topic | | Presenter | Topic | Presenter | Topic | Presenter |
| **11:05-11:20** | Topic | Presenter | Topic | | Presenter | Topic | Presenter | Topic | Presenter |
| **11:20-11:35** | Topic | Presenter | Topic | | Presenter | Topic | Presenter | Topic | Presenter |
| **11:35-11:50** | Topic | Presenter | Topic | | Presenter | Topic | Presenter | Topic | Presenter |
| **11:50-12:30** | Q&A+Panel Discussion | Chairman & Presenters | Q&A+Panel Discussion | | Chairman & Presenters | Q&A+Panel Discussion | Chairman & Presenters | Q&A+Panel Discussion | Chairman & Presenters |
| **12:30-12:40** | Certificate Handover | Chairman | Certificate Handover | | Chairman | Certificate Handover | Chairman | Certificate Handover | Chairman |
| **12:40-13:30** | **Lunch Break** | | | | | | | | |
| **13:30-16:00** | **Agenda** | | | | | | | **Participants** | **Location** |
| Industry-academia collaboration for the waste valorization of industrial wastewater and water recycling using green technology (IAC-WV&WR) workshop on circular economy on wastewater and waste management | | | | | | | All | Conference Room (IT department) |
| Lao-CCG Workshop on Introduction to CCG Tools and Basic of Energy Engineering | | | | | | | All | 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 |