Program of Session S4
Quantum Computation and Engineering

(other activities are mentioned in the conference's main program)

Date: October 13-15, 2025
Venue: Phenikaa University, Duong Noi, Hanoi
Organizers: Phenikaa University, NYCU Institute of Physics and Vietnam Physical Society

No.	Time	Title and authors	Presenter
October 13, 2025 Afternoon			
13:30 – 15:10		**Oral session** chaired by **Hung Nguyen;** location: Room 3 (202 A8)	
S4.K1	13:30 – 13:55	Quantum many-body problems in the age of quantum computing	**Assoc. Prof. Tran Nguyen Lan** University of Science, Ho Chi Minh City
S4.K2	13:55 – 14:20	Parameter tracking for continuous quantum measurement via sequential Monte-Carlo estimation	**Assoc. Prof. Areeya Chantasri** Mahidol University, Bangkok, Thailand
S4.I1	14:20 – 14:45	Bridging Dimensions: Quantum Computing Enhanced High-Dimensional Hyperspectral Data for Precision Agriculture	**Assoc. Prof. Pham Tan Thi** Ho Chi Minh City University of Technology
S4.I2	14:45 – 15:10	Critical properties of conformal field theory at the boundary of the AdS/CFT correspondence and its relations in quantum information	**Prof. Nguyen The Toan** VNU University of Science
15:25 – 16:00		**Poster session 1**	
October 14, 2025 Afternoon			
13:30 – 15:10		**Oral session** chaired by **Phan Duc Anh;** location: Room 3 (202 A8)	
S4.I3	13:30 – 13:55	Simulation of Neutrino Oscillations on a Quantum Computer	**Dr. Nguyen Van Duy** Phenikaa University
S4.I4	13:55 – 14:20	Bridging Education and Industry Through OpenVQA: A Global Platform for Variational Quantum Algorithms	**Dr. Mohammad Haidar** OpenVQA hub, Paris, France
S4.I5	14:20 – 14:45	Superconducting sensor network for dark matter detection	**Dr. Le Bin Ho** Tohoku University

S4.I6	14:45 – 15:10	Towards Quantum Utility for Haplotype Inference	**Dr. Nghiem Nguyen Viet Dung** VNU University of Engineering and Technology
15:25 – 16:00		**Poster session 2**	
16:00 – 17:00		**Oral session** chaired by **Hung Nguyen;** location: Room 3 (202 A8)	
S4.O1	16:00 – 16:20	Beyond Classical Probability: Quantum Approaches to Environmental Awareness Research	**Dr. Le Tan Phuc** Duy Tan University
S4.O2	16:20 – 16:45	Hardy's nonlocality for entangled pairs in a four-particle system	**Mr. Doan Manh Duc** VNU University of Science
S4.O3	16:45 – 17:10	Analysis of Man-in-the-Middle Attacks (MITM) on B92 Quantum Secret Sharing (QSS) *[ONLINE]*	**Mr. Marc Andrie M. Bermundo** University of the Philippines Baguio

List of poster presentations

Poster session 1 **October 13, 2025: 15:25 – 16:00** **Chairpersons: Hung Nguyen, Phan Duc Anh**		
S4.P1	Quantum Simulation of Collective Neutrino Oscillations	**Mr. Vu Van Huong** Phenikaa University
S4.P2	Reflection coefficient of a superconducting qubit coupled to a transmission line	**Ms. Tran Thi Thanh Huyen** Phenikaa University
S4.P3	Excited-State Quantum Simulation via Folded-Spectrum Variational Quantum Eigensolver with Quantum Natural Gradient Optimization	**Mr. Nguyen Hoang Anh** Phenikaa University
S4.P4	Shaped Control Pulses for High-Fidelity Single-Qubit Gates in Superconducting Circuits	**Mr. Pham Dinh Duy** Hanoi University of Science and Technology
S4.P5	Determining the Shape of Paper Sheets with Quantum Physics-Informed Neural Networks	**Ms. Bui Thi Bich Ngoc** Hanoi University of Science and Technology
Poster session 2 **October 14, 2025: 15:25 – 16:00** **Chairpersons: Hung Nguyen, Phan Duc Anh**		
S4.P6	Preparation of Nitrogen-doped Graphene Quantum Dots as Fluorescent Reporters on HeLa Cells	**Ms. Bui Le Yen Chi** **Mr. Pham Nam Thang** Vietnam Academy of Science and Technology (VAST)

S4.P7	Nitrogen-doped Graphene Quantum Dots and Nanocomposite for Potential Application in Photoactivity and Biology	**Ms. Nguyen Minh Phuong** **Mr. Pham Nam Thang** Vietnam Academy of Science and Technology (VAST)
S4.P8	Optimizing Au Ion Implantation in ZnO Nanostructures: A SRIM Simulation Study	**Assoc. Prof. Hanh Hong Mai** VNU University of Engineering and Technology
S4.P9	Qsun: An open-source platform towards practical quantum machine learning applications	**M.A. Nguyen Quoc Chuong** Duy Tan University
S4.P10	Quantum Deep Learning Force Field	**Mr. Tran Viet Hung** Phenikaa University