

Program of Session S6 and S7

Materials & Semiconductor

- Engineering/Applied Physics

(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	Presenter
October 13, 2025 Morning			
10:45 – 11:45		Oral sessions chaired by Nguyen Huu Lam; location: Room 5 (Grand Hall - 2nd Floor A10)	
S6.K1	10:45 - 11:15	Synergistic Plasmonics and Molecular Recognition: Towards Next-Generation Paper-Based SERS Devices	Prof. Yong-Ill Lee Changwon National University
S6.K2	11:15 - 11:45	Emergence Spin-Dependent Phenomena in 2D Quantum Magnetic Materials	Prof. Phan Manh Huong VinUniversity, University of South Florida
October 13, 2025 Afternoon			
13:30 – 15:10		Oral session chaired by Nguyen Duc Trung Kien; location: Room 5 (Grand Hall - 2nd Floor A10)	
S7.K1	13:30 – 13:55	Solar cells and gas sensors based on organic semiconductors	Prof. Hsin-Fei Meng National Yang Ming Chiao Tung University
S7.K2	13:55 – 14:20	Advanced Functional Nanocomposites: From Large-scale Electrosynthesis to Smart Sensing and Industrial Applications	Prof. Le Anh Tuan Phenikaa University Nano Institute
S6.I1	14:20 - 14:45	Giant Modulation of Longitudinal Magnetoresistance of the $Fe_{5-x}GeTe_2$ with In-Plane Bias	Prof. Sanghoon Kim University of Ulsan
S7.I1	14:45 – 15:10	Closing the plastic cycle for clean water: Melamine-supported PET-derived photothermal carbon evaporator for interfacial solar steam generation	Assoc. Prof. Van Duong Dao Phenikaa University
15:25 – 16:00		Poster session 1	
16:00 – 17:25		Oral session chaired by Dao Van Duong; location: Room 5 (Grand Hall - 2nd Floor A10)	
S7.I2	16:00 – 16:25	CO ₂ Valorization by Photocatalysis	Prof. David Riassetto Grenoble Institute of Technology, France

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S6.I2	16:25 - 16:45	Oxide-Phosphide Heterostructure Interfaces for Green Hydrogen Production via Seawater Electrolysis	Dr. Tran Ngoc Quang Viet Nam National University
S6.O1	16:45 - 17:05	Numerical Study of an integrated fibre optic platform with an achromatic nanostructured vortex phase element for the visible spectral range	Dr. Nguyen Thi Hue Hong Duc University
S6.O2	17:05 - 17:25	Scalable atomic layer deposition for tailoring powder-based materials	Dr. Bui Van Hao Phenikaa University
October 14, 2025 Afternoon			
13:30 - 15:10		Oral sessions chaired by Nguyen Viet Huong ; location: Room 4 (Meeting Room 3 - 2nd Floor A10)	
S6.K3	13:30 - 13:55	Process-Integrated Silicon Architectures for High-Efficiency and Long-Life Lithium-Ion Batteries	Prof. Yu Sheng Su National Yang Ming Chiao Tung University
S6.I3	13:55 - 14:20	Electron-beam irradiation: An alternative strategy for modifying the structure of nanomaterials	Assoc. Prof. Nguyen Quang Hung Duy Tan University
S6.I4	14:20 - 14:45	Advanced in Organic Electrochemical Devices using Self-Doped Polyelectrolytes	Dr. Nguyen Dang Tung VinUniversity
S6.O3	14:45 - 15:10	Advanced Layer-by-Layer Stress Mapping in GaN High Electron Mobility Transistor (HEMT) Structures for High-Performance Power Devices	Dr. Mai Thi Thu University of Science and Technology of Hanoi
13:30 - 15:10		Oral session chaired by Tran Manh Trung ; location: Room 5 (Grand Hall - 2nd Floor A10)	
S7.I3	13:30 – 13:55	Many-Body Quantum Methods for Predicting Optical Properties of NIR-II Organic Semiconductors	Prof. Nguyet Pham NYCU Taiwan
S7.K3	13:55 – 14:20	Low Power Gas Sensor for Environmental Applications	Prof. Hsiao-Wen Zan College of Electrical and Computer Engineering
S7.I4	14:20 – 14:45	Surface modification of Ni-rich cathode for Li-ion batteries and Solid polymer electrolytes for Solid-state batteries	Dr. Vu Ngoc Hung Phenikaa University
S7.O1	14:45 – 15:10	Hydrothermal Synthesis of Erbium-Doped TiO ₂ Photocatalyst toward Water Treatment Applications	Mr. Le Duc Tam Phenikaa University
15:25 – 16:00		Poster session 2	
16:00 – 17:00		Oral session chaired by Bui Van Hao ; location: Room 4 (Meeting Room 3 - 2nd Floor A10)	
S6.I5	16:00 - 16:25	Barkhausen effect: Applications in materials science and engineering	Prof. Le Manh Tu Phenikaa University
S6.O4	16:25 - 16:45	First-principles study on electromechanical and thermoelectric properties of SnSb monolayer	Mr. To Toan Thang Hanoi University of Science and Technology

S6.O5	16:45 - 17:05	Se flux-induced structural phase transition and transport modulation in epitaxial FeSe/Al ₂ O ₃ (0001) films	Dr. Tran Nguyen Minh Anh Phenikaa University
16:00 – 17:00		Oral session chaired by Nguyen Van Du ; location: Room 5 (Grand Hall - 2nd Floor A10)	
S7.I5	16:00 – 16:20	From cyan to far-red: spectrum-tailored phosphors for high-CRI WLEDs and plant growth lighting	Dr. Tran Manh Trung Phenikaa University
S7.O2	16:20 – 16:40	High-current triboelectric nanogenerator based on TiO ₂ decorated PVDF porous fiber membrane via vapor phase deposition	Dr. Vu Duy Linh Phenikaa University
S7.O3	16:40 – 17:00	Atomic Layer Deposition and Vapor Phase Infiltration to Enhance the Weathering Resistance of Polymer Composite Materials	MSc. Tran Vu Hung Anh Phenikaa University

List of poster presentations

Poster session 1

October 13, 2025: 15:25 – 16:00

Chairpersons: **Nguyen Duc Trung Kien, Dao Van Duong, Tran Manh Trung, Nguyen Van Du, Nguyen Huu Lam, Nguyen Viet Huong, Bui Van Hao**

S6.P1	Synthesis and luminescent properties of BaSiO ₃ : Bi ₃ ⁺ phosphors prepared by solid-state reaction	Mr. Dao Duy Khanh Phenikaa University
S6.P2	Abnormal-reduction of Eu ₃ ⁺ doped Al ₂ O ₃ -SiO ₂ glass in the air atmosphere	Assoc. Prof. Ho Van Tuyen Duy Tan University
S6.P3	A CNT/MoO ₃ nanohybrid for ultra-sensitive ethanol sensing at room temperature	Mr. Hoang Gia Chuc Phenikaa University
S6.P4	Overcoming the solubility challenges of antidiabetic gliclazide via atomic layer deposition	Mr. Dinh Duc Truong Phenikaa University
S6.P5	Electrodeposition of Sn-Zn alloys on copper electrodes from a non-aqueous solvent	MSc. Kiem Do Van Phenikaa University
S6.P6	Synthesis and Optical Properties of Eu ₃ ⁺ /Bi ₃ ⁺ Co-Doped SrMoO ₄ Red-Emitting Phosphors for WLED Applications	Mr. Le Thanh Duy Phenikaa University
S6.P7	ZnO/Ag Nanocomposite-Modified Electrode for the Development of a Non-Enzymatic Glucose Biosensor	Ms. Quyen Thi Ngo Phenikaa University
S6.P8	Synthesis and enhancement of red luminescence properties of Eu ₃ ⁺ ion-doped ZnMoO ₄	Mr. Nguyen Ba Anh Duong Phenikaa University
S6.P9	Towards Accurate Formation Energy Prediction in Battery Materials: A Study of Multi-Layer Perceptrons, and Kolmogorov-Arnold Networks	Mr. Nguyen Manh Son Phenikaa University
S6.P10	A ZnO/ZnTe nanorod based hybrid for light irradiation enhanced room temperature NO ₂ gas sensor	Dr. Nguyen Minh Hieu Phenikaa University
S6.P11	Effect of SrZrO ₃ doping on the structural and electrical properties of BaTiO ₃ -based piezoelectric ceramics.	Mr. Nguyen Ngoc Minh Hanoi University of Science and Technology
S6.P12	Optical Properties of One-Dimensional ZnS/MoS ₂ Hybrid Materials Synthesized by Thermal Evaporation and Hydrothermal Methods	Mr. Pham Minh Tri Phenikaa University

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S6.P13	Strain-Engineered Phase Switching in 8-8 ZnS Nanosheets: From Flattened Porous to Cage-Like Architectures	Assoc. Prof. Dr. Tran Thi Hai Dr. Nguyen Thi Thao Hong Duc University
S6.P14	Electrochemical phase formation and growth of copper from Cu(I) in deep eutectic solvent	Ms. Nguyen Thi Thuy Trinh Phenikaa University
S6.P15	Suppression of Thermal Conductivity in Black Phosphorus Polycrystals via Ball-Milling-Induced Multiscale Defects	Dr. Nguyen Viet Chien Phenikaa University
S6.P16	Synthesis and properties of Bi ₂ MoO ₆ : Er/Yb/Ho phosphors	Mr. Nguyen Minh Tu Phenikaa University
S6.P17	Synthesis and Optical properties of novel far-red-emitting GdAlO ₃ : Cr ³⁺ phosphors for plant-growth LEDs	Ms. Nguyen Thi Thuy Linh Phenikaa University
S6.P18	A State-of-the-art review on MoS ₂ preparations and applications	Dr. Nguyen Dac Dien Vietnam Trade Union University
S6.P19	Synthesis and Optical Properties of Ce ³⁺ Doped YAG Phosphors for High-Efficiency White LEDs	Ms. Vu Thuy Duong Phenikaa University
S6.P20	SiP Monolayer as a Promising 2D Material for Optoelectronic and Piezoelectric Nanoscale Devices: A DFT Study	Mr. To Toan Thang Hanoi University of Science and Technology
S6.P21	Atmospheric pressure atomic layer deposition for advanced drug delivery systems	MSc. Cao Viet Phuong Phenikaa University
S6.P22	Enhancement in purity of LTP MnBi synthesized by ball milling method through optimizing its composition	Dr. Nguyen Van Tang University of Science and Technology of Ha Noi
S7.P1	Adsorption - photocatalytic properties of SnO ₂ /g-C ₃ N ₄ nanocomposites synthesized by a simple hydrothermal method	Mr. Ngo Trung Hoc Phenikaa University
S7.P2	Integrating Molecular Dynamics Simulations with Microscopic Theory to Predict Structural Relaxation in Small Organic Glass Formers	Ms. Nguyen Thi Thao Duyen Phenikaa University
S7.P3	Damped fall of a magnet inside a polygonal conducting tube	Mr. Tran Le Thien Nhan Quoc Hoc - Hue High school for the Gifted
S7.P4	Optoelectrical properties of SALD-grown SnO ₂ nanostructure thin films: Effect of post-annealing environments.	Mr. Pham Duc Trung Phenikaa University
<p>Poster session 2 October 14, 2025: 15:25 – 16:00 Chairpersons: Nguyen Duc Trung Kien, Dao Van Duong, Tran Manh Trung, Nguyen Van Du, Nguyen Huu Lam, Nguyen Viet Huang, Bui Van Hao</p>		
S6.P23	Silver Nanoparticle-Functionalized Nanoporous Silicon Electrode for Non-Enzymatic Cholesterol Detection	Ms. Quyen Thi Ngo Phenikaa University
S6.P24	Synthesis of Eu ³⁺ -Doped CaMoO ₄ Phosphors for Solid-State Lighting Applications	Mr. Nguyen Viet Duong Phenikaa University
S6.P25	Two-Fold Photoluminescence Enhancement of CdSe Quantum Dots by ZnO Thin Film on Glass Substrate.	Dr. Phan Van Cuong Nha Trang University

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S6.P26	Effect of experimental conditions on optical properties of Cr_3^+ doped NaAlP_2O_7 phosphors synthesized by a simple solid state reaction method	Mrs. Tran Thi Duyen Phenikaa University
S6.P27	Red emitting Mn_3^+ doped $\text{Y}_3\text{Ga}_5\text{O}_{12}$ phosphor for WLEDs applications	MSc. Tran Thi Minh Man Phenikaa University
S6.P28	Unusual tetrahedral occupancy of Mn_4^+ in BaWO_4 and its far-red luminescence properties	Mr. Ngoc Bao Vu Phenikaa University
S6.P29	Pt nanoparticles with narrow size distribution achieved by room-temperature ALD and low-temperature annealing	Mr. Dang Duc Manh Phenikaa University
S6.P30	Enhanced red emission from the $\text{BaSi}_2\text{O}_5 - \text{SnO}_2:\text{Eu}_3^+$ phosphor for NUV-pumped WLED applications	Mr. Hoang Gia Chuc Phenikaa University
S6.P31	Sub-1 nm Pt nanoparticles achieved by temperature-variation atomic layer deposition	Mr. Nguyen Minh Dieu Phenikaa University
S6.P32	Tailoring atenolol release kinetics via atomic layer deposition	Ms. Nguyen Thi Diem Quyen Phenikaa University
S6.P33	Synthesis and study of optical properties of $\text{SrMoO}_4:\text{Pr}^{3+}$ prepared by the co-precipitation method	Mr. Dao Duy Khanh Phenikaa University
S6.P34	High Seebeck Coefficient and Wide Band Gap in GeP Monolayer: A DFT Study Toward Tunable 2D Thermoelectrics	Dr. Dinh The Hung Phenikaa University
S6.P35	Solution combustion synthesis and intense green upconversion emission in $\text{CaZrO}_3:\text{Er}, \text{Yb}, \text{Mo}$ phosphor	Dr. Hoang Nhu Van Phenikaa University
S6.P36	Synthesis and properties photocatalytic of $\text{Bi}_2\text{MoO}_6:\text{Er}/\text{Yb}/\text{Ho}$ phosphors	Mr. Nguyen Minh Tu Phenikaa University
S6.P37	Thermoelectric properties of n-type skutterudite-nanocarbon composites	Dr. Woo Hyun Nam Korea Institute of Ceramic Engineering & Technology
S6.P38	Fabrication and study of structural, magnetic and magnetocaloric behaviours of Fe-doped $\text{Nd}_{0.6}\text{Sr}_{0.4}\text{MnO}_3$ compounds	Assoc. Prof. The-Long Phan VNU University of Engineering and Technology
S6.P39	Room-Temperature VOC Sensing Using Pt-Functionalized SWCNT/ZnO Composite Nanomaterials under UV Irradiation	Assoc. Prof. Nguyen Minh Vuong Quy Nhon University
S6.P40	Photoluminescence properties of Bi^{3+} doped $\text{CaGa}_2\text{O}_4-\text{Ca}_3\text{Ga}_4\text{O}_9$ phosphor for high color rendering index warm white lighting emit diodes applications	Mr. Tran Khac Khoi Phenikaa University
S6.P41	Enhanced thermal stability of cyan-emitting phosphor materials by atomic layer deposition	Mr. Kieu Quang Tuan Phenikaa University
S6.P42	Crystal structures and electrical properties of binary BNT-BKT lead-free piezoelectric ceramics	Dr. Dinh Thi Hinh Phenikaa University
S6.P43	Crank-Nicolson scheme for one-dimensional time-dependent Ginzburg-Landau Equation	Assoc. Prof. Bui Duc Tinh Hanoi National University of Education
S6.P44	Study on the Effect of Polymer Coatings on the Superhydrophobicity of 3D Porous Materials for Oil-Water Separation	Dr. Nguyen Thi Phuong Nhung PetroVietnam University
S7.P5	Development of triboelectric nanogenerator based on PVDF/ TiO_2 membrane fabricated via atomic layer deposition and vapor phase infiltration technologies	Ms. Nguyen Thi Thuong Phenikaa University

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S7.P6	Sunlight-driven enhanced photocatalytic activity of Gradient Sn-doped ZnO thin film prepared by Spatial ALD	Ms. Thi Ly Tran Phenikaa University
S7.P7	Study electrical properties of ultrathin SnO ₂ films by atmospheric pressure atomic layer deposition.	Mr. Nguyen Dinh Nam Phenikaa University
S7.P8	Development of Hydrophobic Coatings for Polymer Composites with Improved Resistance to Water and Contaminants	Mr. Vuong Kha Anh HaNoi Metropolitan University