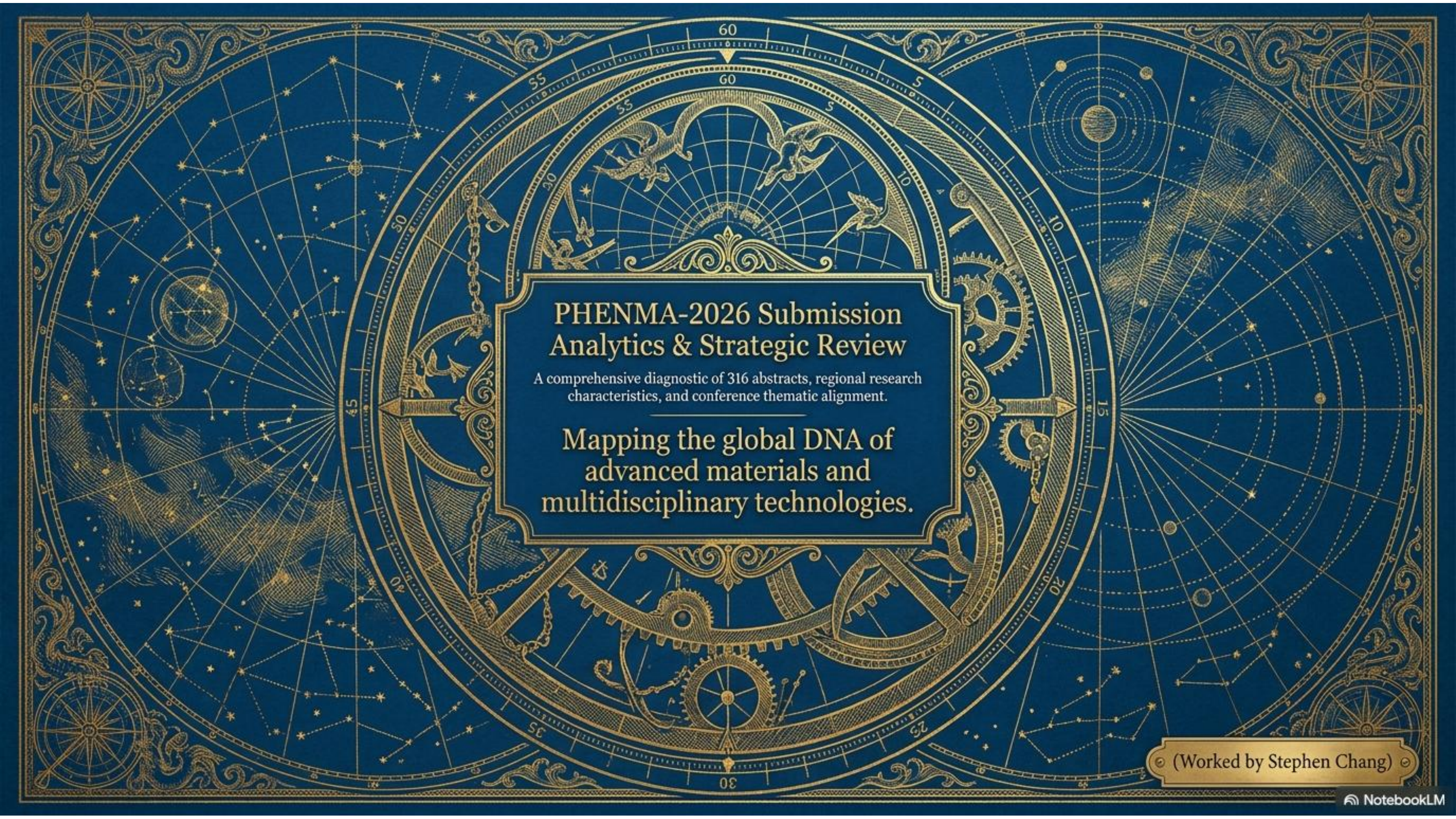




PHENMA-2026 Submission Analytics & Strategic Review

A comprehensive diagnostic of 316 abstracts, regional research characteristics, and conference thematic alignment.

Mapping the global DNA of
advanced materials and
multidisciplinary technologies.

(Worked by Stephen Chang)

The Global Footprint of PHENMA-2026



(Worked by Stephen Chang)

“A dual-hub concentration in Eastern Europe and East Asia drives the conference’s intellectual core.”

The Dual Pillars of PHENMA-2026 Innovation

- Neuromorphic & Memristors:
HfO₂, TiO₂, TiO₂,
Cu₂O architectures.

- Perovskites & Quantum Dots:
CsPbBr₃ flexible LEDs,
PbS/Ag₂S mixtures.

- Piezo/Ferroelectrics:
PZT solid solutions, BaTiO₃,
BiFeO₃ heterostructures.

- 2D Materials:
MoS₂, WSe₂ monolayers,
Graphene.

Advanced
Materials

Advanced
Technologies

- AI & ML Integration:
40 Hz SSVEP recognition,
structural damage prediction.

- Acoustic/Optical Comms:
GaN UV control, F-OFDM
underwater systems.

- Biomedical Engineering:
Magnetic nanocarriers,
focused ultrasound contours.

- VR/AR & Simulation:
Diamond ore beneficiation,
Unity/Unreal Engine logic.

“The true innovation lies in cross-pollination: where quantum dot materials meet AI-driven optical communications.”

Research Signatures of Top Contributing Regions

Region	Dominant Focus	Key Materials	Research Signature
 Russia	Theoretical Mechanics & Applied Physics	Piezoelectrics, AI Health Monitoring, PZT	Heavy emphasis on mathematical modeling and fundamental acoustics.
 Taiwan	Semiconductor & Optoelectronics	Perovskite QDs, GaN Photodetectors, Subsea Comms	High-commercial-viability device fabrication and testing.
 Korea	Advanced Composites & Manufacturing	Siloxane Networks, High-Entropy Alloys, 3D Lattices	Deep integration with industrial manufacturing and eco-friendly scaling.
 Japan	Solid Mechanics & Metallurgy	Solder Joints, Austenitic Steel, Cr/CrN Coatings	Rigorous traditional industrial materials reliability and fatigue testing.
India 	Computational Modeling & Sensors	Flexible Sensors, PZT Patches, CNTs	Strong theoretical validation of micro-electromechanical systems (MEMS).

Distinct national priorities create a globally complementary program of theory, fabrication, and industrial reliability.

(Worked by Stephen Chang)

The Bimodal Engine of PHENMA-2026

Russia: The Theoretical Foundation

- Accounts for 43.6% of submissions.
- Over 40 papers dedicated entirely to finite element modeling, fractional-order viscoelasticity, and fundamental dielectric properties.
- Focuses heavily on predictive math before the physical build.

Taiwan: The Practical Realization

- Accounts for 26.9% of submissions.
- Over 30 papers dedicated to device engineering: LEDs, RRAM, biosensors, and optical communication arrays.
- Focuses heavily on commercial viability and laboratory fabrication.

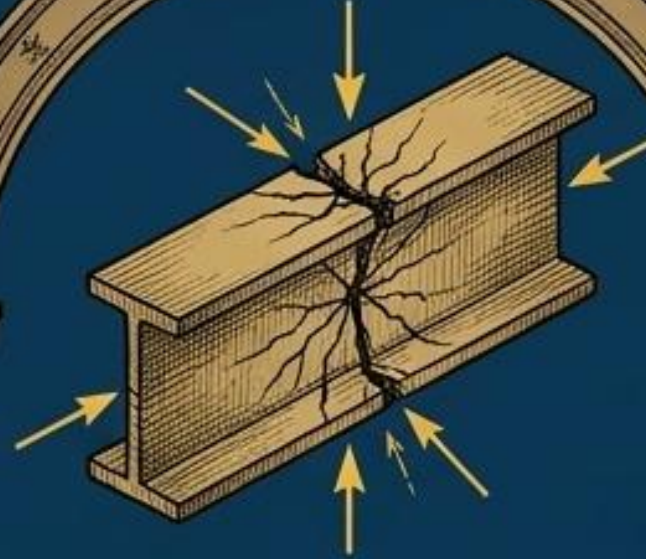
“A natural symbiosis: Russian theoretical frameworks complement Taiwanese device fabrication capabilities.”

The Vanguard of Industrial Reliability & Simulation



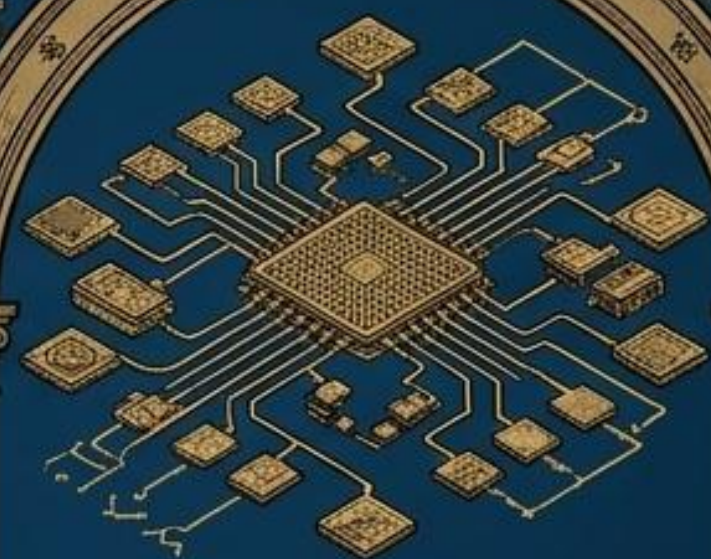
Korea: Industrial Optimization

- Focuses on scalable, eco-friendly composites.
- Key submissions detail Bamboo-Derived Cellulose Fibers and Laser Powder Bed Fusion for High Entropy Alloys.
- **Core Identity:** Green industrial scaling.



Japan: Structural Integrity

- Singular focus on extreme mechanical endurance.
- Key submissions analyze singular stress fields in joints, fretting fatigue damage in coatings, and martensitic transformations.
- **Core Identity:** Ultra-precision safety engineering.



India: MEMS Optimization

- Highly targeted research on computational engineering.
- Key submissions optimize conductive networks in porous flexible sensors and model placement effects of PZT patches on MEMS.
- **Core Identity:** High-efficiency computational validation.

(Worked by Stephen Chang)

Translating advanced materials from laboratory curiosities into industrially viable, fatigue-resistant systems.

Worked by Stephen Chang

Quality Assurance: Enforcing Thematic Boundaries

9 submissions originated from Indonesia, predominantly from Universitas 17 Agustus 1945 Surabaya.

Diagnostic Analysis:
Majority of abstracts focused heavily on Green Economy, MSME Development Strategies, Batik Ecoprints, and Circular Management.



Committee Action: While representing high-quality socioeconomic research, these lack the fundamental 'hard science' basis required by the PHENMA mandate. Papers strictly addressing business strategy have been rejected.

Advanced Materials & Physics

“Scientific rigor requires strict thematic boundaries; excellence in one discipline does not mandate inclusion in another.”

Constructive Pathways for Out-of-Scope Submissions

Pathway 1: Strategic Redirection

Authors of MSME and economic strategy papers are strongly encouraged to submit these works to dedicated Industrial Engineering, Sustainable Management, or Regional Economics conferences. The peer-review panels in those venues are properly calibrated to evaluate their specific methodologies.

Pathway 2: Thematic Bridging for Future Submissions

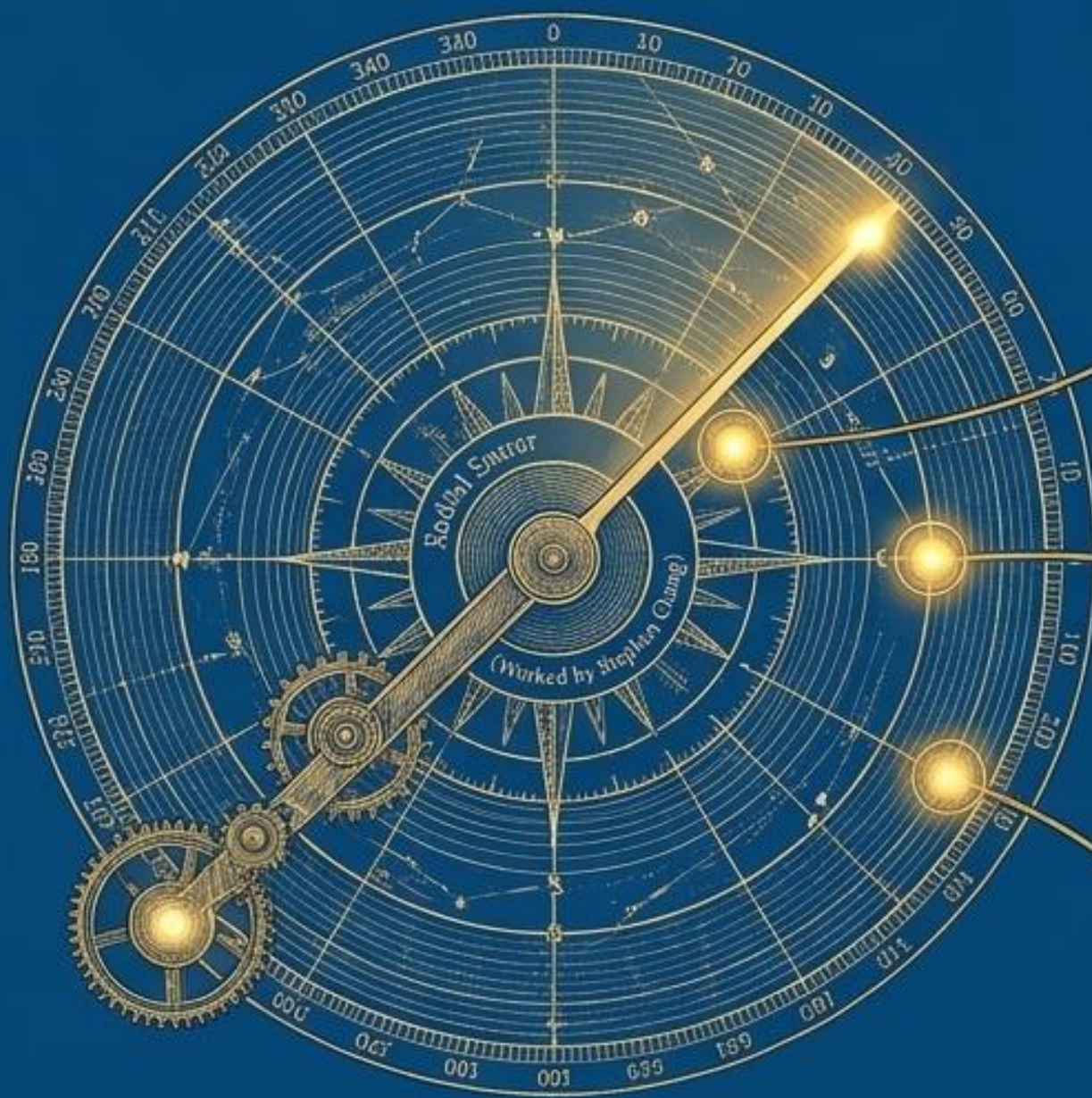
To align with future PHENMA mandates, Indonesian authors must bridge industrial strategy with physical material science.

Example Shift: Instead of "MSME Economic Strategy for Batik," a viable submission would be "Chemical Analysis and Stress-Testing of Eco-Friendly Dyes in Textile Manufacturing."

"Preserving conference focus while supporting regional academic output through constructive redirection."

(Worked by Stephen Chang)

Emerging Micro-Trends Across the 316 Abstracts



Node 1: Neuro-Mimicry & Pain Sensors

A surge in papers modeling self-rectifying memristors and artificial nociceptors (pain receptors) utilizing nanocrystalline ZnO films for next-generation AI hardware.

Node 2: Bio-Acoustic Synergy

Highly specific cross-disciplinary work utilizing Chaotic Hénon Text Encryption integrated directly with Bottlenose Dolphin vocalizations for covert F-OFDM underwater communication.

Node 3: Gamification of Industrial Simulation

A distinct cluster of research applying the Unity and Unreal Engines—traditionally used for video game development—to industrial process simulation, sound design, and narrative logic testing.

“The frontier of 2026 is defined by biomimicry and the gamification of industrial simulation.”

Strategic Imperatives for the Organizing Committee

Pillar 1: Formalize Bimodal Tracks

Given the heavy data distribution, formally separate the conference schedule into "Fundamental Theory & Computational Modeling" and "Device Fabrication & Industrial Implementation" to aid attendee navigation.

Pillar 2: Strengthen CFP Pre-Screening

Update future Call for Papers (CFP) language to explicitly define the boundaries between "Industrial Engineering" and "Socio-Economics" to prevent mass out-of-scope submissions.

Pillar 3: Foster Cross- Regional Panels

Actively force cross-pollination in scheduling. Pair Russian theoretical acoustic modelers directly with Taiwanese acoustic transducer engineers to create immediate collaborative friction.

Data-driven curation transforms a collection of papers into a cohesive intellectual ecosystem.

(Worked by Stephen Chang)



Shaping the Future of Advanced Materials

The 316 submissions for PHENMA-2026 demonstrate a robust, globally interconnected drive toward sustainable, intelligent, and highly optimized physical systems. Through rigorous boundary-setting and strategic cross-pollination, this conference will map the definitive blueprint for the next decade of applied physics.

**“From atomic alignment
to global impact.”**

(Worked by Stephen Chang)