



PHILIPPINE-AMERICAN ACADEMY OF SCIENCE AND ENGINEERING

PAASE Monthly Newsletter

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President's 2025 Welcome Message

Dear **PAASE Members**,

Happy Lunar New Year! As we welcome 2025, I want to express my gratitude to each of you for your dedication and commitment to advancing science and technology for the betterment of society. Your contributions continue to inspire and uplift not just our organization but the broader community we aim to serve.

This year offers us new opportunities to build upon our successes and address emerging challenges with renewed energy and focus. PAASE remains steadfast in its mission to promote excellence in research, education, and innovation, while fostering global collaboration among Filipino scientists and engineers across the globe.

We will continue to host meaningful events, webinars, and initiatives that reflect the remarkable achievements and potential of our members. We aim to strengthen partnerships, engage with the next generation of scientists, and ensure that the impact of our work reaches far and wide.

Thank you for your tireless efforts, vision, and support. Together, let us strive to make 2025 a year of significant progress and positive change for PAASE and the communities we serve.

Wishing you all a prosperous and fulfilling year ahead!

With warmest regards and gratitude,

Dr. Gladys Cherisse J. Completo

President

Philippine-American Academy of Science and Engineering (PAASE)

PAASE Holds First Board Meeting of 2025, Elects New Chair and Outlines Strategic Directions

The Philippine-American Academy of Science and Engineering (PAASE) recently convened its inaugural Board of Directors (BOD) meeting of the year on January 19, 2025. The meeting served as a crucial platform for setting the strategic direction of the organization for the coming year, focusing on strengthening partnerships and addressing pressing global challenges.

A key highlight of the meeting was the official election of **Academician Amel Salvador** as the new Chair of the Board of Directors. Dr. Salvador, a distinguished

physicist and full professor at the National Institute of Physics, has made significant contributions to the field of optoelectronics through the development of devices using molecular beam epitaxy. His research has applications in areas like optical communication and terahertz sensing, and he has established a renowned research laboratory in the Philippines, fostering a new generation of scientists.

The Board also welcomed three distinguished new members:

Dr. Leah Tolosa Croucher, a chemist with a strong track record in biomedical research. Dr. Croucher, a program officer at the NIH and former Assistant Director at the UMBC Center for Advanced Sensor Technology, brings extensive experience in program management and has demonstrated success in securing funding for research initiatives.

Dr. John Ryan C. Dizon, a Professor at Bataan Peninsula State University with expertise in technology entrepreneurship and industrial engineering. Dr. Dizon will bring valuable insights on technology transfer and innovation to the Board.

Dr. Carmen Ablan-Lagman, a renowned researcher with over 25 years of experience in multi-disciplinary research, specializing in population genetics and genomics. Dr. Ablan-Lagman, a full professor at De La Salle University, established the Practical Genomics Laboratory (PGL) in 2012, showcasing her commitment to research and scientific advancement.

The Board has laid out its key activities and collaborations for 2025, focusing on strengthening partnerships and addressing pressing global challenges.

Streamlining Collaboration with DOST

The Board proposed a shift in its regular meetings with the Department of Science and Technology (DOST) from bi-monthly to quarterly. This strategic move aims to streamline discussions while maintaining productive collaborations with DOST.

Aligning with the SDGs: Climate Change Focus

In a concerted effort to combat climate change, PAASE is taking decisive action by forming a Technical Working Group, led by Gisela Concepcion dedicated to crafting a comprehensive position paper. This paper will outline pressing environmental concerns and propose actionable solutions aimed at mitigating climate impacts. It will be presented during Focus Group Discussions (FGDs), serving as a call to action for all stakeholders. Building on this momentum, PAASE will organize a two-day conference in June in the Philippines, where key players, including government officials, will convene to review the position paper and explore implementation strategies. This collaborative, multi-pronged approach highlights PAASE's unwavering commitment to addressing climate change through informed, collective action and evidence-based policy recommendations.

SciEnggJ Proposal and New Member Guidelines

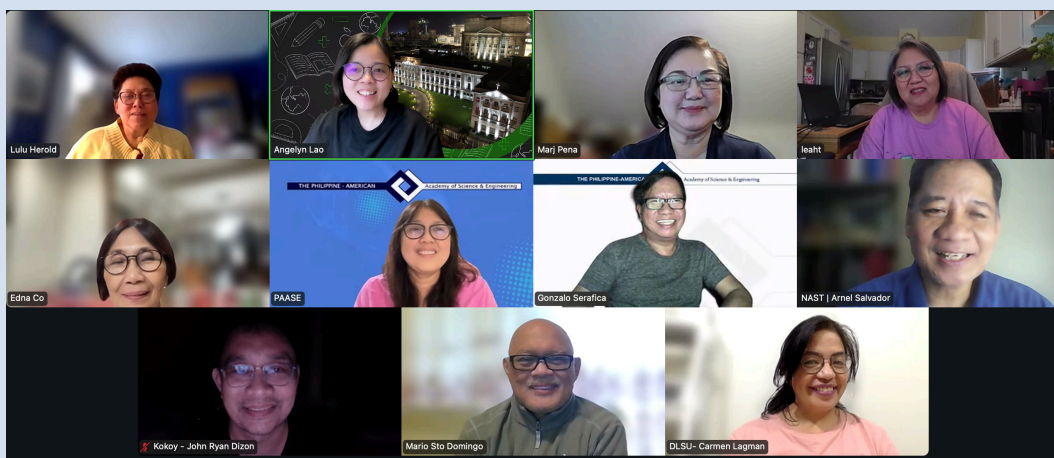
Concurrently, the SciEnggJ proposal for funding from the Department of Science and Technology (DOST) has been submitted. The team is currently revising the proposal based on feedback received from DOST, ensuring alignment with their requirements. Updates on the proposal's progress will be shared in future meetings.

The Board also discussed the development of new guidelines for nominating PAASE members. A key component of these guidelines will emphasize the mentorship role of the nominator in guiding their nominee towards active participation in PAASE's activities and initiatives. Letters will be sent out to members and encouraged to actively contribute and will be reminded to pay their annual membership dues to support the organization's endeavors.

APAMS 2025 in South Carolina

The highly anticipated Annual PAASE Meeting and Symposium (APAMS) 2025 will take place at the University of South Carolina on July 19-20, 2025. This year's conference will explore the theme "Shaping the Future: Research, Discoveries, and Innovations in Science and Engineering."

Online pre-conference activities, including parallel sessions and rapid-fire presentations, will commence on July 15, 2025, providing participants with additional opportunities for dynamic discussions and collaborations.



Featured Article from *SciEnggJ*

In this issue of the PAASE Newsletter, we feature a critical study published in *SciEnggJ* highlighting research on:

THz-TDS study on the sulfur doping effect in the properties of GaSe_{1-x}S_x

Authors:

Arvin Lester C. Jusi*^{1,3}, Der Jun Jang¹, Yi Ying Lu¹, Ching Hwa Ho², Li Wei Tu¹,
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Philippines

The optical and electrical properties of GaSe_{1-x}S_x samples in the terahertz range were obtained using terahertz time-domain spectroscopy (THz-TDS). Results showed that the properties of the GaSe_{1-x}S_x samples approach that of GaS as the amount of sulfur increases. This behavior is linked to the stacking type transition of the GaSe_{1-x}S_x samples due to incorporation of sulfur. The THz absorption and conductivity of the GaSe_{0.9}S_{0.1} sample were also observed to be lower than GaSe, but further addition of sulfur has led to the increase of THz absorption and conductivity. The carrier concentration and mobility obtained from Drude fitting of the conductivity have shown consistency with the behavior of the GaSe_{1-x}S_x samples with increasing amounts of sulfur.

KEYWORDS: Terahertz time-domain spectroscopy, sulfur-doped GaSe, stacking type transition, THz absorption and conductivity, Drude fitting

Dive into this fascinating discovery by reading the full research article in *SciEnggJ*.
DOI: <https://doi.org/10.54645/2024172RGA-66>

THz-TDS study on the sulfur doping effect in the properties of $\text{GaSe}_{1-x}\text{S}_x$

Arvin Lester C. Jusi*^{1,3}, Der Jun Jang¹, Yi Ying Lu¹, Ching Hwa Ho², Li Wei Tu¹, Wen Ching Chao¹, and Alvin Karlo G. Tapia³

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ABSTRACT

The optical and electrical properties of $\text{GaSe}_{1-x}\text{S}_x$ samples in the terahertz range were obtained using terahertz time-domain spectroscopy (THz-TDS). Results showed that the properties of the $\text{GaSe}_{1-x}\text{S}_x$ samples approach that of GaS as the amount of sulfur increases. This behavior is linked to the stacking type transition of the $\text{GaSe}_{1-x}\text{S}_x$ samples due to incorporation of sulfur. The THz absorption and conductivity of the $\text{GaSe}_{0.9}\text{S}_{0.1}$ sample were also observed to be lower than GaSe, but further addition of sulfur has led to the increase of THz absorption and conductivity. The carrier concentration and mobility obtained from Drude fitting of the conductivity have shown consistency with the behavior of the $\text{GaSe}_{1-x}\text{S}_x$ samples with increasing amounts of sulfur.

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INTRODUCTION

From the recent years, gallium selenide (GaSe) has attracted a great deal of attention due to its potential for fabrication of optoelectronics operating in the visible region [1]. A lot of research has been focusing also on GaSe due to its remarkable properties and plenty of modern applications such as superconducting nanoelectronics, flexible optoelectronics [3], and as a multifunctional 2D material [4]. Moreover, GaSe is also a very promising material for far-infrared and THz applications [4-15] due to its extremely low optical losses ($<0.1 \text{ cm}^{-1}$ in the infrared range), very wide transparency range (0.65–18 μm), and large nonlinear optical coefficient ($d_{22} \approx 70\text{--}80 \text{ pm/V}$) [4, 6-11]. However, despite the number of studies with the properties of GaSe, it is still challenging to develop its full potential as a key material in technological devices due to its poor physical properties. The hardness of GaSe is close to zero in the Moh's scale [10,12,13], and the lattice interlayers are held only by very weak van der Waals forces, thus forming high-quality GaSe crystals presents a challenge [14-16].

KEYWORDS

Terahertz time-domain spectroscopy, sulfur-doped GaSe, stacking type transition, THz absorption and conductivity, Drude fitting


Webinar Highlights: Meditron, medical domain large multimodal model: potential use in the Philippine setting

Dr. Annie Hartley recently delivered an engaging talk as part of the Philippine-American Academy for Science and Engineering (PAASE) Webinar Series. She shed light on the transformative potential of large language models (LLMs) in democratizing access to medical knowledge and the innovative strides being made to address challenges in deploying these tools for real-world use, especially in underserved communities.





LLMs, such as advanced chatbots, have shown considerable promise in making medical knowledge accessible to a wider audience. However, as Dr. Hartley highlighted, barriers like proprietary licensing, limited scalability, and inadequate adaptation to the needs of underserved populations often hinder their practical application.

To overcome these challenges, Dr. Hartley introduced Meditron, a fully open-source medical chatbot that leverages rigorously curated clinical practice guidelines from diverse healthcare settings. Meditron is specifically designed to provide validated and accessible medical knowledge, focusing on underserved

and underrepresented populations. Its open-source nature makes it a collaborative tool that clinicians and researchers worldwide can adapt to their specific needs.

Join the  **moove**
(and make a clinical LLM tailored to the Philippine setting)

Community-driven Massive Online Open
Validation and Evaluation for Continuous
Real-World Alignment in Clinical Chatbots


EPFL Yale Carnegie Mellon University Africa ICRC    THE GLOBAL SURGERY FOUNDATION WITS UNIVERSITY Many more...


Remove spotlight
Annie Hartley

Webinar Highlights: Good Health and Well-being: Insights and Challenges in the Philippine Context

Dr. Fernando Garcia's webinar highlighted the critical role of sustainable development goals (SDGs) in improving health outcomes, showcasing innovative strategies and emphasizing the importance of collaboration in achieving long-term impact. He provided an in-depth overview of SDG Goal 3, focusing on its 17 targets. While progress has been made in the Philippines, Dr. Garcia noted that some targets, such as reducing HIV and malaria rates, may fall short of the 2030 timeline, calling for intensified efforts and multi-sectoral collaboration to address these gaps. He also discussed the critical role of higher education institutions in achieving the SDGs, emphasizing their potential in generating knowledge, promoting education, and fostering collaboration across sectors. He urged universities to integrate SDG awareness into curricula, policies, and partnerships while fostering scientific discussions and collaborative projects to create a culture that integrates SDG consciousness into all activities.



Dr. Garcia also addressed the interplay of health and environment by sharing research findings on the food environment surrounding schools in the Philippines. He highlighted the alarming prevalence of unhealthy food options near schools and low vegetable consumption among youth, stressing that public health interventions must focus on creating healthy environments and promoting health equity.

Finally, Dr. Garcia presented the case of Noveleta Long Beach, where significant improvements in water quality turned the area into a tourist attraction. This initiative, alongside efforts to improve socioeconomic determinants of health, showcased the importance of strong governance and community engagement in achieving sustainable development. Dr. Garcia concluded the webinar by stressing the need for collaboration, innovation, and political will in addressing health challenges and promoting good health and well-being for all.

 upcph

Good Health and Well-being: Insights and Challenges in the Philippine Context

Fernando B. Garcia Jr., PhD
Professor and Dean

 COLLEGE OF PUBLIC HEALTH
UNIVERSITY OF THE PHILIPPINES MANILA
SEAMEO TROPMED Philippines
Regional Centre for Public Health, Hospital Administration, Environmental and Occupational Health 

Remove spotlight
Fernando Jr Garcia

Global Women's Breakfast 2025!

PAASE Webinar Alert!

Join Us for the Global Women's Breakfast 2025!

We are thrilled to invite you to the Global Women's Breakfast 2025, co-organized by Philippine American Academy of Science and Engineering, Central Mindanao University and the Institute of Chemistry, UPLB! This global event aims to bring together women in STEM for meaningful discussions and inspiration.

Date: Tuesday, February 11, 2025

Time: 8:30 AM PHT

Platform: Zoom

Let's come together to celebrate women's contributions in science, technology, engineering, and mathematics, and discuss how we can continue to drive positive change in the world of STEM.

Register in advance:

<https://us02web.zoom.us/j/81454208201>

Don't miss this opportunity. Register now and be part of this exciting discussion!

SPEAKERS

STEMulating a Passion for Women in Science +++
+++
+++
+++
DR. AIMEE LYNN A. BARRION-DUPO
President
National Research Council of the Philippines

Finding Common Ground in a Changing Equity Landscape +++
+++
+++
+++
ENGR. JOSEPHINE SANTIAGO-BOND
Safety and Mission Assurance Manager
Commercial Crew Program
Kennedy Space Center, FL

Hosted by:
CHARILYN P. PACLAR Faculty, Department of Chemistry, CMU
FAYBELLE A. GJOROJEVSKI Faculty, Department of Chemistry, CMU
SOPHIA RAIN MONTEROLA Instructor, Institute of Chemistry, UPLB

DOST-STII to Conduct On-Site Visit and Consultation with PFPI

The PAASE Foundation Philippines, Inc (PFPI) is set to meet with Undersecretary Sancho Maborang of the Department of Science and Technology (DOST) on February 21, 2025, at the Marine Science Institute, University of the Philippines Diliman. This meeting aligns with DOST's efforts to enhance collaborations with certified Science Foundations, as outlined in Administrative Order No. 015, s. 2021.

This visit aims to strengthen the collaborative relationship between DOST and certified Science Foundations, as mandated by DOST Administrative Order No. 015, s. 2021.

During the visit, DOST-STII will review the various programs, projects, and activities of the PAASE Foundation, assess their progress, and discuss any challenges encountered in their implementation. The focus will be on evaluating the alignment of these initiatives with DOST's certification guidelines and objectives. This interaction will also provide an excellent opportunity to explore

potential areas for collaboration and exchange best practices between PAASE and DOST.

Congratulations, Dr. Caesar Saloma!

We extend our heartfelt congratulations to **Dr. Caesar Saloma** of the College of Science's National Institute of Physics, University of the Philippines Diliman, **for being honored as a member of the Optica Fellows Class of 2025.**

This prestigious recognition is a testament to Dr. Saloma's contributions to optics and photonics in the Philippines and his unwavering commitment to mentoring and training the next generation of Filipino scientists. As the first Filipino to receive this award, he has paved the way for future leaders in science and technology, bringing pride and inspiration to the country.

Mabuhay, Dr. Saloma! Your achievements continue to shine a light on Philippine science on the global stage.



Advisory for Use of PAASE Googlegroup

Dear **PAASE Members**,

As part of our commitment to upholding the values of openness, free thinking, creativity, and innovation, we have established this advisory to ensure the fair and equitable use of the PAASE Googlegroup. We aim to create a positive and inclusive environment for all members while being aware of the limitations of this mode of communication, both from the social and technological perspectives.

The following guidelines are suggested for the use of the PAASE Googlegroup:

1. Use a clear and concise SUBJECT heading that accurately reflects the content of your email.
2. Prioritize postings regarding PAASE schedules, events, activities, news, milestones, on-site project implementation, DOST and other orgs/agencies' news and schedules with relevance to PAASE, and our own publications such as research, policy/position papers, feature articles, and SciEnggJ publications.
3. Commercialization of personal discoveries and inventions or start-up company milestones.

4. Important national and international news articles relating to academe/universities, basic research discoveries, technological inventions, universities' impact on government projects, industries, communities may be shared.
5. Announcements of personal talks, recorded lectures, speaking engagements, invitations, and travels should be sent to paaseinfo@infopaase.org for sharing through the PAASE website instead.
6. Members who wish to have a regular column or blog may request space at the PAASE website.
7. In case of conflict, the following procedures for conflict resolution will be observed:
 - Any complaint about a member's use of the listserv shall be brought to the attention of the moderator.
 - The moderator shall reach out to the concerned member for a dialogue regarding the complaint and for the latter to make adjustments regarding any infringement* being complained about.
 - A second complaint regarding the same practice or behavior may lead to the member receiving an advice/warning of being placed on a MODERATED status, upon approval of the BOD. The concerned member may appeal this decision to the BOD.
 - A third complaint may lead to the member being placed on a MODERATED status for a length of time to be approved by the BOD. The concerned member may appeal this decision to the BOD.

***List of Potential Infringements

There are several potential misuse of the PAASE Google group platform, including:

- Posting messages that are discriminatory, abusive, harassing, or offensive to other members.
- Posting confidential or proprietary information that is not meant to be shared publicly.
- Posting messages that contain spam or unauthorized advertisements for commercial purposes.
- Posting messages that infringe upon intellectual property rights, such as copyrighted or trademarked material.
- Posting messages that are intentionally misleading or fraudulent.
- Violating the conflict resolution procedures outlined in the advisory.

These violations can have negative consequences for the community and the reputation of PAASE. Therefore, it is important for members to follow the guidelines and to use the platform in a responsible and ethical manner.

We believe that following these guidelines will help us create a more efficient, professional, and effective platform for communication among our members.

Thank you for your cooperation.

Sincerely,

The Board of Directors

PAASE Officers and Board of Directors

Officers

Gladys Cherisse J. Completo, PhD

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Vice President (2024-2025) & President-Elect (2025-2026)

Lourdes Herold, PhD

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Maria Luisa Virata, PhD

Treasurer

Directors

Arnel Salvador, PhD

(Chairperson, 2025)

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2024-2026: Angelyn Lao, PhD · Edna Co, PhD · Joost Santos, PhD

2025-2027: Leah Tolosa Croucher, PhD · Carmen Ablan-Lagman, PhD · John Ryan Dizon, PhD

Ex-Officio: Mariano Sto. Domingo, PhD

Thank you for your continued support and participation in PAASE.
We appreciate your dedication and commitment to our organization.

Gladys Cherisse J. Completo

Technical Editor

Febrey Bless G. Esclares

Managing Editor

Philippine-American Academy of Science & Engineering

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