Report on IET National Travel Award – EACEF 2025

Building Bridges between Europe and Asia in Civil and Environmental Engineering

I am Swee Pin Yeap, an Associate Professor at UCSI University Malaysia, and a Chartered Engineer (CEng) registered with the IET, where I have been a regular member. I am deeply honored to have received the **IET National Travel Award**, which enabled me to attend and present at the **9th International Conference of Euro Asia Civil Engineering Forum (EACEF 2025)**, held from 9th–11th September 2025 at Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan, Sarawak. The conference, jointly organized by UNIMAS Malaysia and Universitas Pembangunan Jaya Indonesia, carried the theme *"Beyond Boundaries: Empowering Innovations in Civil and Environmental Engineering."* It was officiated by Yang Berhormat Datuk Amar Douglas Uggah Embas, Deputy Premier of Sarawak. The conference brought together speakers and participants not only from Malaysia and Indonesia, but also from Vietnam, Switzerland, Korea, China, and Germany, fostering a truly international exchange of ideas.






Presenting My Work on Borophene and Hydrogen Generation

Being part of this platform was both inspiring and rewarding. At the conference, I presented my paper entitled **"Borophene vs. Metal Oxide: Is Borophene on Par with Common Metal Oxide in Catalyzing $NaBH_4$ Hydrolysis for Hydrogen Generation?"** under the Water Resources and Environmental Engineering track. This study explored the catalytic performance of a novel material, **borophene oxide (BO)**, compared with established catalysts such as graphene, Fe_3O_4, CuO, and TiO_2, in accelerating hydrogen release from sodium borohydride hydrolysis, a reaction to support hydrogen storage and clean energy production. Our findings showed that BO outperformed the other catalysts, achieving rapid hydrogen generation (50 mL of H_2 in just 90 seconds), highlighting its promise as a next-generation metal-free catalyst in development of hydrogen industry.

Positive Feedback and New Research Directions

The presentation went well, with positive feedback from both the session chair and the audience. Participants expressed strong interest in the potential applications of borophene-based nanomaterials in civil engineering, particularly for the development of sustainable materials and smart infrastructure. These discussions opened new avenues for collaboration, and one idea that especially resonated with me was the integration of nanomaterials into sensor-based concrete, a direction I plan to explore in my future research. The conference combined technical sessions with translational research, aligning well with my focus on green materials and sustainable engineering. It also offered valuable networking opportunities with regulators and industry, bridging research with real-world applications.

Cultural Learning & Traveling the Green Way

Beyond the formal sessions, I also had the opportunity to explore the rich culture of the indigenous people and the unique charm of Kuching (the Cat City), which made the experience even more meaningful. In line with the spirit of the IET National Travel Award, I made a conscious effort to travel sustainably, using public transport (MRT and KLIA Transit) to reach the airport.

Thank You IET!

With the support of the IET National Travel Award, I was able to disseminate my recent findings, receive valuable insights from peers, and establish new cross-disciplinary collaborations. I am sincerely grateful to IET for making this opportunity possible, and for encouraging researchers like myself to continue pushing the boundaries of knowledge while keeping sustainability and real-world impact at the heart of our work.