PAEE/ALE' 2026
Tokyo, Japan June 4 - 6, 2026

1. Session Title & Chair

**OS01: Active learning actions and PBL Approaches for Engineering and New Frontiers**

Chair: Shoji TAKECHI, Kanazawa Institute of Technology, Japan
Co-chairs: Ryoichi Suzuki, Kanazawa Institute of Technology, Japan

2. Description of the Session Theme

This session includes the student-centered activities and the case studies of social implementation-based education of Kanazawa Institute of Technology in Japan such as problem/project based learning, gamification, extracurricular activities, and so on.

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1. Session Title & Chair

**OS02: Global and Collaborative Learning in Engineering Education**

Chair: Yasutaka Ueda, Niigata University, Japan
Co-chairs: Hatsuo Yoshikubo, Shibaura Institute of Technology, Japan
Hiroyuki Fujioka, Fukuoka Institute of Technology, Japan
Akihiro Yamashita, National Institute of Technology, Tokyo College, Japan
Takashi Yukawa, Nagaoka University of Technology, Japan

2. Description of the Session Theme

This organised session, proposed by the International Affairs Committee of the Japanese Society for Engineering Education (JSEE; https://www.jsee.or.jp/english), aims to explore diverse approaches to promoting global and collaborative learning in engineering education. As higher education institutions increasingly emphasise the development of global competence and cross-cultural communication skills, it has become essential to integrate active learning frameworks—such as Project-Based Learning (PBL), Problem-Based Learning, and Collaborative Online International Learning (COIL)—into engineering curricula. The session welcomes case studies, practice reports, and research papers that illustrate how educators design, implement, and evaluate such programs in various contexts. Topics may include, but are not limited to: 1. Global or inter-university collaboration in engineering courses. 2. Integration of PBL or COIL in multicultural learning environments. 3. Assessment and evaluation of teamwork, communication, and intercultural competence. 4. Institutional support systems for sustainable international collaboration. 5. Innovative teaching practices that foster active and global learning. By sharing experiences and outcomes from different institutions and regions, the session seeks to provide insights into effective strategies, challenges, and lessons learned in promoting global collaboration and active learning among engineering students.

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1. Session Title & Chair

**OS03: Cross-Innovation for Language and Communication: Enhancing Engineers' Multimodal Competence through Active Learning**

Chair: Le Hieu Hoc, Hanoi University of Science and Technology, Viet Nam
Co-chairs: Lee Ju Seong, the Education University of Hong Kong, China

2. Description of the Session Theme

Engineering today requires far more than technical proficiency—engineers now work in multicultural, multidisciplinary, and digitally mediated environments where communication, collaboration, and intercultural competence are essential. However, traditional engineering curricula often treat language and communication as peripheral skills, resulting in a competence gap between industry needs and graduate capabilities. Under the overarching conference theme **"Cross-Innovation: From Active Learning to Action – Exploring New Frontiers,"** PAEE/ALE'2026 offers an ideal platform to reimagine how communication education can be integrated into engineering learning.

This Organised Session focuses on Cross-Innovation for Language/Communication, aiming to explore how active learning, problem/project-based learning (PBL), challenge-based learning, digital technologies, and cross-disciplinary collaboration can transform communication training for engineering students.

**Rationale**

Global industries increasingly expect engineers to:

- communicate effectively across languages and cultures,
- articulate complex technical ideas to non-technical stakeholders,
- collaborate in diverse, distributed teams,



- engage in multimodal communication (visual, oral, written, digital),
- and co-create solutions through interdisciplinary innovation.

Yet, communication is often taught separately from engineering practice. This session proposes that Cross-Innovation - the convergence of engineering, linguistics, communication studies, and educational technology—can generate new frontiers for integrating communication naturally into engineering learning environments.

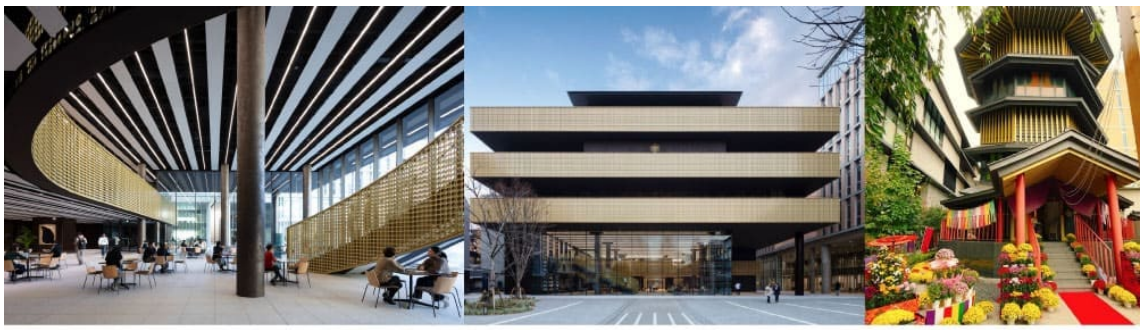
**Session Goals**

The session aims to:

1. Highlight innovative pedagogies that embed language and communication development into engineering curricula through active learning.
2. Showcase interdisciplinary models where language educators, engineering faculty, and industry collaborate.
3. Introduce digital tools and AI-enabled communication support systems that enhance students' engineering communication.
4. Explore assessment strategies for multimodal and multilingual communication in engineering contexts.
5. Present real-world cases where communication competence has improved student performance in PBL, capstone projects, and industry collaborations.

**Key Themes to Be Addressed**

- Cross-innovation between engineering, linguistics, communication, and technology
- Active learning approaches to communication: PBL, challenge-based, inquiry-based
- Multimodal communication for engineers (visualisation, storytelling, technical writing, pitching)
- AI-powered language support for engineering education



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- Communication in global virtual design teams
- Intercultural competence development in engineering programs
- Assessment frameworks for communication skills in engineering
- Industry perspectives on communication gaps and workforce needs

**Session Format**

The session will combine:

- Short research paper presentations (empirical or conceptual)
- Interactive demonstrations of communication-supporting tools
- Panel discussion with experts from engineering education, communication studies, and industry
- Synthesis dialogue to identify research and practice directions for PAEE/ALE communities

**Expected Outcomes**

- A shared framework for cross-innovative communication competencies in engineering
- Identification of exemplary practices and models that others can adapt
- A network of educators and researchers interested in this interdisciplinary topic
- Recommendations for integrating communication more deeply into active learning design

3. Email & Contact details

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1. Session Title & Chair

**OS04: On Teaching Methods to Foster Creativity in Engineering Education and the Development of Engineers**

Chair: Atsushi Kikuchi, Numerical Analysis Development Co., Ltd., Japan
Co-chairs: Hiroshi Watanabe, Techspire Co., Ltd., Japan
Hiroshi Hasegawa, Shibaura Institute of Technology, Japan

2. Description of the Session Theme

In the context of the AI era, we predict that in the near future, the acquisition of so- called "knowledge alone" will gradually become less emphasized. Therefore, inevitably, education will increasingly focus on nurturing "creativity", and in particular, I would like to discuss various examples and proposals regarding "teaching methods". The subjects include not only universities but also education in companies and other institutions.

3. Email & Contact details

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1. Session Title & Chair

**OS05: Innovating Service-Learning in Engineering Education: From Active Learning to Community Impact**

Chair: Celina P. Leão, University of Minho, Portugal
Co-chairs: Anabela Carvalho Alves, University of Minho, Portugal
Filomena Soares, University of Minho, Portugal
Silvia Araújo, University of Minho, Portugal

2. Description of the Session Theme

This special session invites researchers, educators, and practitioners to submit contributions that explore innovative applications of Service-Learning (SL) and related community-engaged active learning methodologies in engineering education. Aligned with the PAEE/ALE 2026 theme "Cross-Innovation: From Active Learning to Action – Exploring New Frontiers", the session aims to bring together diverse perspectives on how engineering programmes can be transformed through real-world engagement, interdisciplinary collaboration, and emerging technologies. We welcome submissions that address, but are not limited to: Design, implementation, and assessment of Service-Learning in engineering courses or programmes. Research on student learning outcomes, civic engagement, ethical awareness, and skill development fostered by SL. Community engagement models involving social organisations, NGOs, municipalities, industry partners, or interdisciplinary collaborations. Innovations in pedagogical practice, including challenge-based learning, problem-based learning, project-based learning, and other action-oriented methods linked to SL. Integration of emerging technologies—including AI, data analytics, digital tools, and online collaborative platforms—to support SL activities such as project design, reflection, communication, or impact evaluation. Frameworks and methodologies to scale SL across institutions and engineering programmes. Ethics, inclusion, accessibility, and responsible innovation in community-engaged learning. Cross-disciplinary and cross-cultural approaches to SL, including global, virtual, or multi-campus initiatives. Contributions may present



empirical research, case studies, conceptual frameworks, methodological proposals, technological tools, lessons learned, or institutional strategies. Although inspired by recent work such as the MIRA-AI initiative at the University of Minho, the session aims to be broad, international, and inclusive, welcoming submissions from all contexts and disciplines connected to engineering education. Session Format The session will include: Peer-reviewed paper presentations, A moderated discussion among authors, A short collaborative activity that invites participants to reflect on innovations in SL, including the optional integration of AI-supported tools. This format promotes scientific exchange, interactive dialogue, and international collaboration around Service-Learning and action-oriented pedagogies in engineering.

3. Email & Contact details

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1. Session Title & Chair

**OS06: Cross-Innovation in Alternative Assessment: Transforming Culminating Courses and Active Learning in Engineering Education**

Chair: Che Maznah Mat Isa, Universiti Malaysia Perlis, Malaysia

Co-chairs: KHAIRUN NISA' BINTI KHAIRUDDIN, Universiti Malaysia Perlis, Malaysia
Nur Asmaliza Mohd Noor, Universiti Teknologi MARA Pahang Branch, Malaysia
Salmaliza Salleh, Universiti Teknologi Petronas, Malaysia
NORSHAH AIZAT SHUAIB, Universiti Malaysia Perlis, Malaysia

2. Description of the Session Theme

This Organized Session explores how Cross-Innovation can transform the way engineering students are assessed, particularly in culminating courses such as Final Year Projects (FYP), Integrated Design Projects (IDP), industrial training, and community-engaged SULAM initiatives. As engineering education transitions from passive learning to active, problem- and project-based learning environments, traditional assessment methods no longer sufficiently capture students' attainment of complex engineering problem-solving, design abilities, ethical reasoning, sustainability considerations, and professional competencies aligned with accreditation standards. The session welcomes contributions showcasing innovative alternative assessment strategies—including AI-integrated assessment, authentic performance-based tasks, rubric design for complex engineering activities, reflective portfolios, analytics-driven evaluation, and industry-partnered co-assessment. Particular emphasis is given to assessment that strengthens student engagement, supports diverse learners, enhances employability, and ensures constructive alignment with programme learning outcomes. Through case studies, empirical research, and exemplars of best practices, this session aims to spark dialogue on how assessment innovations can shift engineering education from active learning toward meaningful action, preparing graduates who are resilient, future-ready, and capable of addressing emerging global challenges.

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