

JOINT SEMINAR INDONESIA-JAPAN FUTURE RAILWAY AND URBAN DEVELOPMENT

Tokyo Institute of Technology (TokyoTech) is initiating a collaborative research work with the National Center for Sustainable Transportation Technology (NCSTT) of Institut Teknologi Bandung (ITB), Indonesia. The goal is to establish a concrete network among the Academia and Industries from both countries for supporting the research and development of Indonesian railway and urban system. To elaborate the detailed concept, related Japanese academia and industries are invited to attend the Joint Seminar, and then to discuss together on the collaborative research works between the two parties.

Day/Date: Wednesday, July 26, 2017

Venue: Tokyo Institute of Technology, Ookayama Campus, Main Building 4F, Meeting Room 1

Schedule:

15:00-15:10 Welcome speech: Prof. Tetsuo Yai (TokyoTech)

15:10-15:20 Opening remarks: Dr. Alinda F. M. Zain (Education Attaché of Indonesian Embassy)

15:20-16:00 Keynote Lecture: Dr. Sigit Puji Santosa (NCSTT-ITB)

“Research Innovation in Railway Technology and Mass Transport Industry in Indonesia”

16:00-16:45 Lectures: Asc. Prof. Shinya Hanaoka (TokyoTech) *“Urban Transport and Development”*
and Mr. Yasunari Nakajima (JR EAST) *“The outline of JR East and Japanese Operator”*

16:45-17:15 Coffee break

17:15-18:00 Discussion on NCSTT-TokyoTech innovative research collaborations on Indonesian railway and urban development. Moderator by Prof. Kikuo Kishimoto (TokyoTech).

18:00 Closing

These are some of the potential collaboration topics:

1. Railway vehicle design and development and light weight structure technology
2. Rolling stock propulsion & electrification
3. Network, signaling, communication, and automation technology
4. Railway safety technology (Geotechnical aspect, passive safety/crashworthiness)
5. Transit Oriented Development (TOD), Business and Planning Development for Urban Railway
6. Automated Fare Collection (AFC) technology
7. Railway infrastructure planning and technology selection (Monorail, LRT, MRT)
8. Railway industrial technology and policy
9. Training and curriculum development for railway engineering
10. Railway service and maintenance.

Research Innovation in Railway Technology and Mass Transport Industry in Indonesia

*National Center for Sustainable Transportation Technology
Institut Teknologi Bandung, Indonesia
NCSTT-ITB*

Keynote Lecture by Sigit P. Santosa

Indonesian government has committed to develop transportation to alleviate the traffic congestion through the development of public mass transport with Light Rail Transit (LRT) and Mass Rapid Transit (MRT) programs. The development of the mass public transport is outlined in the National master plan for the railway system (RIPNAS), in which the railway track will be expanded from current length of 4500 km to 12.100 km by 2030. This railway expansion will require the procurement of 2.800 units of locomotive, and 28.000 units of passenger coach. The movement of the goods in Indonesia is currently dominated by the road transportation. The RIPNAS also plans for the expansion of the freight transportation through the railway system. By 2030, there will be an additional 2000 units of locomotive and 40.000 units of freight car for transporting goods.

The NCSTT was designated as the National Center of Excellence for Sustainable Transportation Technology by the Ministry for Research Technology and Higher Education (Ristekdikti). The main role is to give the scientific, policy, and technological support to the transportation industry in Indonesia, so that the product development, operational, and maintenance of the urban mass transport can be conducted to support sustainable transportation in Indonesia. For the railway research Innovation, the main goal is to provide advanced technology solution for mass transport industry within sustainable ecosystem of transportation industry. To accomplish this goal, research collaborations involving the international collaborators from world-leading universities and industries will be critical to resolve current and future transportation challenges in Indonesia. One of the key activity is to develop component/supplier industry through product development research. By this, the integration of railway industry for urban mass transport will be advanced rapidly.

The NCSTT is supported by 56 researchers with 4 major field of researches: 1) Rollingstock technology, 2) Infrastructure, 3) Technology, policy, business development (TOD), 4) Resource development. Several national and international research collaborations have been established, i.e. with Massachusetts Institute of Technology (MIT), University of Oxford, Imperial College of London, Beijing Jiaotong Technical University. The joint research program will be able to provide strong support for the establishment of innovation ecosystem for the integrated mass based transportation. The NCSTT is currently working on several product innovation researches, among others the railway vehicle development for Railink Urban Mass Transport to connect Jakarta Airport to Tangerang, Light Rail Transit for Palembang, Light Rail Transit for Jakarta Airport to Pluit, Network communication for High Speed Train for Jakarta-Bandung, and feasibility study to develop High Speed Train for Jakarta-Surabaya.



Curriculum Vitae

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Education

- Doctor of Science (Sc.D), Mechanical Engineering, MIT, USA, 1999
- Master of Science in Mechanical Engineering (MSME), MIT, USA, 1997
- Ingenieur (Ir), Mechanical Engineering, ITB, 1991

BIOGRAPHICAL SUMMARY

Dr. Sigit P. Santosa is currently the Chairman of the National Center for Sustainable Transportation Technology (NCSTT). He is also a faculty member at the Faculty of Mechanical and Aerospace Engineering, Institut Teknologi Bandung (ITB), Indonesia. NCSTT is a unique multidisciplinary research center at ITB devoted to conducting, supporting, and encouraging applied engineering and technology for transportation system. Dr. Santosa is currently a Principal Investigator (PI) of various research collaborations with a total budget of more than \$5 million, which include Joint ITB-MIT research collaboration on electric based transportation sponsored by USAID-SHERA program, Joint ITB-Oxford collaboration on the development of lightweight structure for railway vehicles, Joint ITB-Industry consortium research on the development of rail vehicle (Railink) which complies to the NVH requirements, Joint ITB-Industry consortium research on structural blastworthiness applicable for armor vehicles.

Dr. Sigit P. Santosa has more than 30 years experiences in the product development, research, and teaching in the field of automotive and transportation engineering. After completing his Sc.D. degree in the field of transportation safety from MIT, he joined North America Product Development at General Motors Company, USA. During his tenure at GM (1999-2012), he has led and managed 7 product architectures and launched 14 brand vehicles, among others Hybrid & Electric Vehicles (Cadillac ELR, Chevrolet Volt). He has undertaken state of the art and applied research funded by automotive industry and government consortiums. His research works was published in International journals and conferences in more than 20 refereed publications, garnered more than 1000 citation with Scopus h-index = 8, and owned a US/Global Patent related to Impact Deflection and Energy Absorption System. He joined FTMD-ITB in 2014, and he currently teaches vehicle development process, design for manufacturing and assembly for automotive application, structural crashworthiness, occupant protection and safety, and numerical analysis and computational method.