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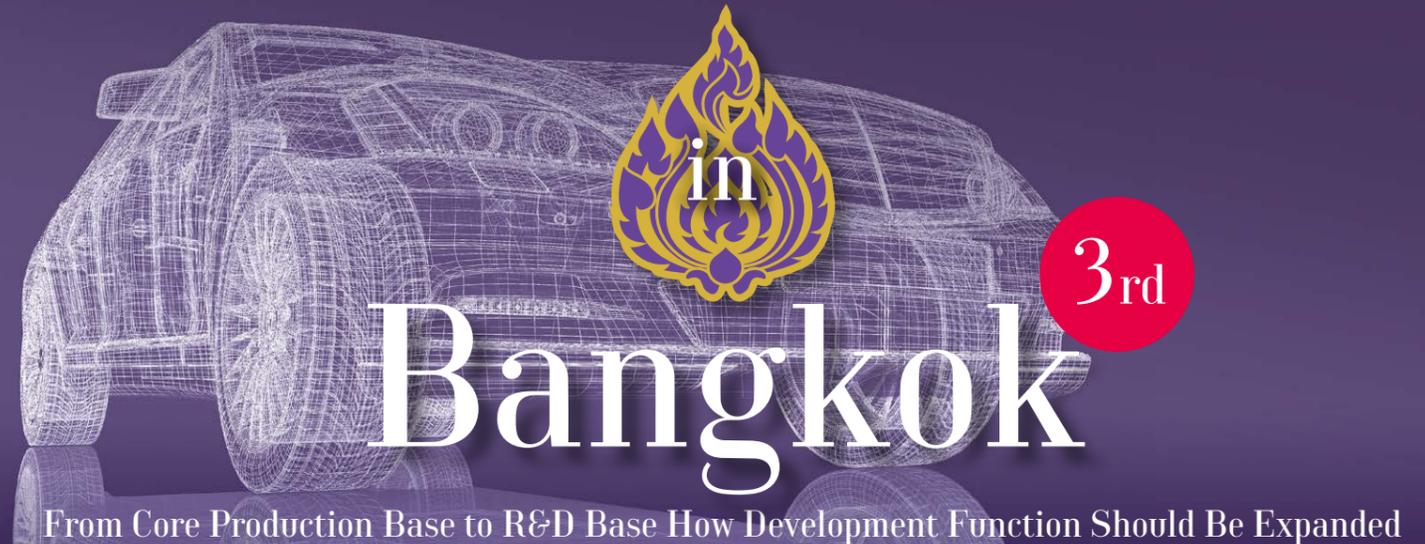
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Attention : Toshiro Nishihara / Asami Ishii / Akihiro Shozui

Business-Academia Collaborative Forum Automotive Engineers Forum



Jul.21,2017

Centara Grand & Bangkok Convention Centre
at CentralWorld

ฟอรัมความร่วมมือระหว่างภาคธุรกิจและภาคการศึกษา
ในด้านเทคโนโลยียานยนต์ขั้นสูง



Green Mobility Research Institute, Institutes of
Innovation for Future Society, Nagoya University



M e s s a g e F r o m O r g a n i z e r s

Our Challenge Will Create Start Points of Future R&D Systems.....

We are delighted to welcome all participants to our forum. Automobiles are now changing dramatically. New mobility society shall be equipped with electrical motor driven vehicles for limiting air pollution and global warming issues. Furthermore, the day of autonomous driving shall come in order to exceed human ability to create safer and more efficient traffic system. This forum, organized by Smart Mobility Research Center of Chulalongkorn University, Thailand and Green Mobility Research Institute, Institutes of Innovation for Future Society of Nagoya University,

Japan, focuses on promoting human relations and technological exchange and incubating future project between Thailand and other overseas countries. We hope our challenge will create start points of future R&D systems in Thailand. Please enjoy this forum, exchange your experiences with various participants and incubate your new R&D activities!

Assoc. Prof. Angkee Sripakagorn Chulalongkorn University
Prof. Tetsunori Haraguchi Nagoya University



T I M E T A B L E

Opening remarks

Angkee Sripakagorn Associate Professor, Smart Mobility Research Center, Faculty of Engineering, Chulalongkorn University

9:00 ▶ 9:15 15 min.

Keynote speech

Mobility and Connectivity

Saptarshi Basu Director, Interior Systems and Technology , Continental Automotive Singapore Pte Ltd

It's time for a paradigm shift. Infrastructure was the buzzword of the 20th Century, and mobility and connectivity are the keywords of the 21st Century. Infrastructure in its totality - whether roads, railways, bicycle paths or fibre Optics vables - should serve as a means of enhancing mobility in Society. Of connecting people and goods, Knowledge and innovation, cities and regions. Mobility and Connectivity would solve the following:

- 1) First Mile / Last Mile
- 2) For Sustainable Smart Cities
- 3) Safer and Easier Transportation
- 4) Faster Transportation
- 5) Affordable &
- 6) Reliable Services



9:15
9:45
30 min.

9:45 ▶ 10:00 15 min. Break (Coffee break / Exhibition time)

Sponsored session

Introduction of material analysis on electronic parts

Atsushi Oda Senior Engineer, Material Evaluation Group, Testing & Analysis Division, KOBELCO RESEARCH INTERNATIONAL (THAILAND) CO., LTD.

- 1) Introduction of service laboratory in Thailand
- 2) Reliability evaluation of power module
- 3) Non destructive inspection by X-ray CT
- 4) Sample preparation of solder part using Ion Milling
- 5) Failure analysis of bonding part with FE-SEM
- 6) Battery safety assessment
- 7) Introduction of service outlines



10:00
10:20
20 min.

Invited session

Tire Contribution to Environment and Safety

Hiroshi MATSUI Director, Technical Department, Technical Coordinator Asian Region, SUMITOMO RUBBER(Thailand) CO.,LTD

Both automotive and tire have trend to improve Fuel Savings without any tradeoffs like wet performance. In order to enhance rolling resistance and to keep wet performance, we are developing new materials by new analysis and simulation technologies. We would like to introduce our latest Material Technologies.



10:20
10:40
20 min.

Sponsored session

Multi-Shaker Control for Vibration and Shock Testing using multiple shakers for Automotive Testing Requirements

Stewart Slykhous President, Spectral Dynamics., Inc.

The Presentation will cover the State-of-the-Art MIMO Control techniques using multiple-shakers to provide simultaneous X,Y and Z axes testing. Conventional testing involves X, Y and Z as consecutive using Head Expanders and Slip Tables. The focus will be on bringing the real life environment in the lab for simulating simultaneous X,Y, Z motions on Automotive parts mounted on a single table driven by multiple shakers, the heart bring the Control System capable of ACCURATE Magnitude, Phase and Coherence Control. Adaptive Control implementation which involves continuous updating the System Identification Matrix has been employed. The same Control System could also be used to simulate actual Road data on full vehicles mounted on 4 poster servo-hydraulic shakers. The talk will also talk about various test modes available for Automotive testing and Pneumatic Shock Testers for high g and high pulse durations.



10:40
11:00
20 min.

11:00 ▶ 12:30 90 min. Lunch / Exhibition time

Sponsored session

Keysight's Approach and Test Solutions for Advanced Electrification of Automotive

Hajime Kitano Market Segment Manager, Asia Pacific Field Marketing, Asia Pacific Field Op. Keysight Technologies Japan

Changing from the manufacturing base to the R&D center for ASEAN regions is advancing and technology transfer to local engineers in Thailand is becoming an important and urgent issue. But it's sometimes not clear what kind of technical support can be provided and who provides test & measurement tools for Thailand engineers. Keysight and its partner IRCT offer various electric test tools and leverage matured test knowledge well trained in Japan automotive test market to Thailand. In this paper, we present Keysight's approach and test solutions overview to the advanced electrification of automotive.



12:30
12:50
20 min.

Invited session

Automated Driving - Current Status and Future Perspectives"

Pongsathorn Raksincharoensak Associate Professor Dr., Department of Mechanical Systems Engineering, Tokyo University of Agriculture and Technology

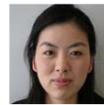
Active safety technology is an important function in today's automobiles for securing driving safety and thus reducing the number of road accidents. Currently many advanced driver assistance systems have been developed and deployed in automotive markets. On the other hand, there are a number of ongoing research activities on autonomous driving systems for improving vehicle intelligence aiming at safety, mobility, driving comfort. This presentation covers an overview about the current key technologies of autonomous driving and active safety systems and points out further requirements for future active safety functions. In addition, it is important to discuss not only the advancement of autonomous driving function itself but also how to design the cooperation between the system and the driver so-called "shared-control". Practical advanced development of advanced driver assistance system with risk prediction will be shown including demonstrations of prototype test cars. The key technologies are (1) Sensing platform including digital map, (2) Motion planning and control considering potential risk and (3) Adaptive Human-Machine Interface for shared control.



12:50
13:10
20 min.

Sponsored session

13:10
13:30
20 min.



Achievement of Quality Vehicle in NVH - from Development to Production

Yumiko Sakamoto Application Engineer, Brüel & Kjaer division, Spectris Co. Ltd.

For 75 years, Bruel & Kjaer has supplied the best-in-class sound and vibration measurement equipment to not only automotive but also other markets. Most of the case, our solutions have been utilized at the development stage. Measuring accurately is very important to capture the sound and vibration of the product correctly, even if the analytical approach is getting popular these days. Through the measurement, it is possible to set the vehicle sound and vibration target and cascade down to the component level targets. Better target management is the key not only for the interior sound quality of vehicle but also exterior noise in conformity with the regulation. To archive the target at the final product, end-of-the-line testing is also important. In the presentation, it will be explained how Bruel & Kjaer helps you develop and archive the quality products.

13:30 ▶ 13:45 15 min. Break (Coffee break / Exhibition time)

Sponsored session

13:45
14:05
20 min.



Calibration Solutions for the RDE Development Process

Peter Niedermaier Business Development Manager, Instrumentation and Test Systems, AVL List GmbH

Real Driving Emissions (RDE) for passenger cars now add the road as a new environment for emissions testing and certification. The RDE legislation will require vehicles to be clean under all operating conditions. This will impose significant challenges on the design, development and calibration of powertrains and vehicles. Efficient vehicle testing, automated processes to speed up calibration as well as easy and reliable simulation will need to play together seamlessly to ensure an affordable and reliable process. AVL developed for last years advanced methodologies and tools, which can help to achieve RDE compliant results with less development effort and time. The AVL's approach is a holistic approach which focuses on the user experience improvement and the overall process efficiency.

Invited session

14:05
14:25
20 min.



AMATA SMARTCITY: "Innovation& Education"

Noi Ruangnaovarat Urban Development Manager, Business Development, AMATA Corporation PC

With the Thailand 4.0 and ageing society coming up, the most industry that will get an impact will be manufacturing base. Along with the labour cost getting higher, Thailand can no longer be a manufacturing base country. Currently, we need to import workers from neighbouring countries to do the job which is not so appealing and sustaining for the manufacturing companies. Amata SMARTCITY is the total solution model for Thailand 4.0 as well as the way to sustainably solve the problem for our our country.

We believe that education is the only way to have social mobility. Education can be an "all win" outcomes to everyone. The manufacturer will have a skilled labour along with the current blue collars can improve themselves and their lives as well. Our Thai labours can no longer be a typical blue collar workers anymore, we need to build a smart people to keep up with the current situation of our country economy. Amata is developing a smart vocational school to improve blue collars worker into a quality skilled workers. Along with developing a Smart city estate which includes an R&D center, schools, and universities to bring in a higher level of manufacturing company into Thailand.

Sponsored session

14:25
14:45
20 min.



Latest Developments in Vibration Testing

Mark Chomiczewski SALES AND MARKETING MANAGER, SALES AND MARKETING, VIBRATION RESEARCH

The goal of testing any product is to reliably predict how it will perform in its expected end-use service environment. Companies who are performing vibration testing are concerned with product durability and want to determine how long their product will last when exposed to various vibration environments. An additional goal may be to find ways to accelerate their existing vibration testing in order to bring new products to market, faster. Considering this, how does your current laboratory vibration testing correlate with the actual end-use service environment? This presentation will attempt to help you answer this question and also answer other commonly asked questions such as "which test is more severe, sine or random vibration", or "if I run my random vibration test for 1 hour, how many hours does this equate to in the real-world", or "is my current vibration testing considering periodic shock events", and finally "can I accelerate my current vibration testing"?

14:45 ▶ 15:00 15 min. Break (Coffee break / Exhibition time)

Sponsored session

15:00
15:20
20 min.



Welding Application in Automotive Industries

Satoshi Sakaba Overseas Sales Manager, Welding Product Division, Nippon Avionics Co.,Ltd

In 1960, Avio was born as a joint cooperation between NEC Corporation and Hughes Aircraft Company. And in 1963, we started to provide welding products. Avio has more than 50 years experience for welding products and made some "World Leading" products. Recently, welding products is used in many kind of situations for example R&D, mass production to automotive industry. In this presentation, we would like to introduce Applications for Automotive Industries.

Sponsored session

15:20
15:40
20 min.



Introduction of Front-Line Vibration Test

Hiroshi Tagoshima Sales Manager, Sales Department, IMV (THAILAND)CO.,LTD.

Established in 1957, IMV CORPORATION specializes in environmental testing, measurement and analysis equipment for vibration-related applications. We are also proud of our test systems, which are used in automotive applications and for a variety of other industrial products to help maintain the high quality and reliability for which Japanese technology is famous.

In this presentation, we would like to introduce about overview of vibration test and Front-Line testing report for Automotive industries.

Keynote speech

15:40
16:10
30 min.



Challenge against Global Warming by Plug-in Hybrid and Electric Vehicles

Andreas Lettner Chief Executive Officer, Mercedes Benz Manufacturing Ltd. Thailand

Daimler will invest more than seven billion euro in "green" technologies in the next two years alone. Mercedes-Benz will put the first fuel-cell-powered vehicle with plug-in technology into series production, the GLC F-CELL. In addition, the company is developing a dedicated vehicle architecture for battery-electric motor cars. Plug-in hybrids represent a key technology on the road to a locally emission-free future for the motor car. This is because they offer customers the best of both worlds; in the city they can drive in all-electric mode, while on long journeys they benefit from the combustion engine's range. Hybridisation also makes the internal combustion engine more efficient, and ensures more dynamic performance.

Closing remarks

16:10 ▶ 16:25 15 min.

16:30 ▶ 18:00 Cocktail Party