

JSAE Eye

the newsletter of the Society of Automotive Engineers of Japan, Inc.



社団法人自動車技術会

Event in May 2010 JSAE Annual Spring Congress & Exposition

19~21 May 2010
Pacifico Yokohama

Despite still being adversely affected by the severe economic environment, a large number of papers have been submitted for the technical paper presentations and 455 presentations in 95 sessions are planned, the most in our history.

Furthermore, as many as 365 companies are planning to fill more than 800 booths at the upcoming 19th Automotive Engineering Exposition. This year the special program will feature

an exhibition under the theme of "Achieving a Low-Carbon Society: Environmentally Friendly Vehicles in the City" and also a number of lectures and panel discussions linked to this exhibition will be presented by notable figures who are active on the leading edge of this topic. Please also look forward to the Keynote Address, Technical Review, and Special Forums.

http://www.jsae.or.jp/2010haru/index_e.html

Keynote Address

**The Challenges and Responses to
Realizing and Popularizing Next-Generation Vehicles**
-Examination by the Next-Generation Vehicle Strategic Study Group-
Prof. Emeritus Hisashi ISHITANI (The Univ. of Tokyo)
14:15~15:00, 20 May / Convention Centre - Main Hall



Drastically limiting road traffic CO₂ emissions and diversifying our energy sources are global issues. The "Next-Generation Vehicle Strategic Study Group" within METI is examining possible countermeasures for these issues and will introduce the challenges and future responses to realizing and popularizing future automobiles, related technologies, and systems aiming to achieve full-scale reduction of CO₂.

<Open to Public / Free Admission>

Special Forum

**Mineral Resources for
Environmentally Friendly Vehicles and
Resources and Materials for
Next-Generation Vehicles**

13:00~15:40, 19 May / Annex F201 + F202

Part1: Mineral Resources for

Environmentally Friendly Vehicles

Part2: The Frontline of Automobile Materials

-The Power of Materials to Change Vehicles

<Open to Public / Free Admission>

**Corporate Views
on Achieving a Low-carbon Society**
- Environmentally Friendly Vehicles in the City -
15:10~17:40, 20 May / Main Hall

The view of three top executives on the development of next-generation vehicles will be presented. A panel discussion will be held to further elucidate this complex topic.

<Open to Public / Free Admission>

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Technical Review

**The Challenges and Prospects of
Second-Generation Batteries for Vehicles**
Prof. Zempachi OGUMI (Kyoto University)
13~14 : 00, 20 May / Main Hall

At present the lithium-ion battery is the storage battery that displays the highest performance. A lecture will be given on the current state of this battery's performance in automotive applications, future challenges, the chances of developing solutions, and the measures needed to accomplish this.

<Open to Public / Free Admission>

Renewed

**Book of Summarized Papers
—2010 JSAE Annual Spring Congress—
English Summaries of All Papers**

The Best Way to Monitor the Latest Trends in Cutting-edge Technology

This book carries English summaries of all published papers regardless of the language used in the original paper. It should prove to be a very useful tool for understanding the latest trends in automotive technologies in Japan.

book@jsae.or.jp

HEADLINES

- 2010 Annual Spring Congress & Exposition
- Collegiate Student Safety Technology Design Comp. Nihon Univ. won the Event
- The 8th Student Formula SAE Competition of Japan Largest-ever Entry of 85 Teams
- Seminar for Aspiring Student Formula Competitors at Nissan Grandrive
- Motor Car Development / Fabrication Guide Now Available in English
- Kids Engineer 2010 30~31 July in Yokohama
- 2010 Annual Autumn Congress in Kitakyushu Call for Papers ~23 April
- FISITA 2010 Budapest Early Registration Discount Until End-April
- Encyclopedia of Automobiles
- Monthly Journal of JSAE Now Available in All-colour
- New English Electronic Journal will be Launched
- Event Participation Registration Fee Discount in 2010

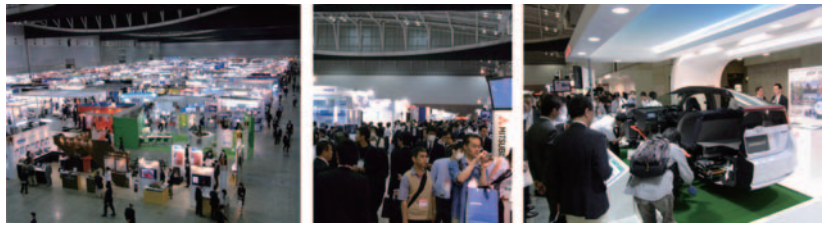
JSAE Annual Spring Congress & Exposition

Event in May

Automotive Engineering Exposition 2010

19~21 May 2010

As many as 365 Exhibitors will fill more than 800 Booths
http://www.jsae.or.jp/expo/index_e.php



Japan's domestic automobile manufacturers, as well as domestic and overseas parts manufacturers and testing companies will be participating in the exhibition. Furthermore, governmental groups from Great

Britain, France, Belgium, Canada, and Malaysia are also planning to participate.

The Annual Spring Congress (technical paper presentations & Automotive Engineering Exposition) is not only a place for automotive experts to exchange information, but also an opportunity for automotive technologies and the latest trends and initiatives of the automotive industry to be widely presented to the general public. The Automotive Engineering Exposition is free and open to general admission allowing many members of the public, not just the experts, to attend and see the latest technologies. The Exposition is proof of the continuing high levels of interest in automobiles and expectations for the future. The JSAE is obligated to meet these high expectations and is planning numerous forums and special exhibitions that will address themes from everyday life up to envisioning the world of the future. At the forums, world-leading environmental technologies will be a central focus and important future-focused topics as well as unique and inspiring topics will also be prepared. You can expect to learn about a variety of proposals related to future automotive technology and our automobile-oriented society.

Special Forum

Mineral Resources for Environmentally Friendly Vehicles and Resources and Materials for Next-Generation Vehicles

13:00~15:40, 19 May / Annex F201 + F202

Part1: Mineral Resources for Environmentally Friendly Vehicles

Part2: The Frontline of Automobile Materials -The Power of Materials to Change Vehicles

The resources and materials related to next-generation vehicles, including the latest research, development examples, and products will be discussed from a wide range of viewpoints by five experts.

<Open to Public / Free Admission>

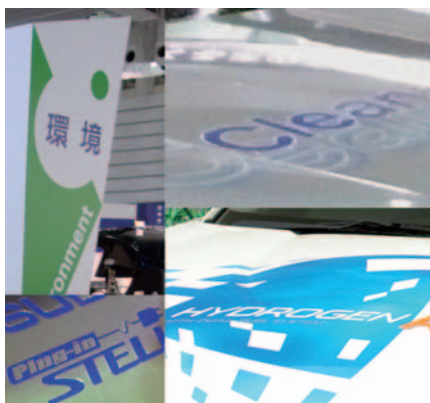
Special Exhibits

Achieving a Low-carbon Society -Environmentally Friendly Vehicles in the City- Ride and Drive & Exhibits

Environmentally friendly vehicles such as HVs, EVs and FCVs will be exhibited and we will make some of them available for test drive along the special course (you may drive by yourself or ride on the passenger seat). A variety of companies have collaborated on this special exhibition to highlight the evolution of the automobile and its technology focusing on how the low-carbon society will be achieved.

The exhibition will also focus on robots and new concepts of mobility which may become the partners in our daily life in the future.

<Open to Public / Free Admission>



Test Drive will be subject to reservation

Corporate Views on Achieving a Low-carbon Society -Environmentally Friendly Vehicles in the City- The View of 3 Top Executives on the Development of Next-generation Vehicles

15:10~17:40, 20 May / Main Hall

Three top executives from Toyota, Nissan and Honda will introduce their visions, courses of action, and views on technological development as they relate to Japan's efforts to develop next-generation automobiles while also striving to realize a low-carbon society. A panel discussion will be held to further elucidate this complex topic.

- The Development of Plug-in Hybrid Vehicles
Takeshi UCHIYAMADA (Toyota)
- Electric Vehicle Initiatives and Views on Future Society
Minoru SHINOHARA (Nissan)
- Vision and Actions Toward Next-Generation of Vehicles
Tomohiko KAWANABE (Honda)

<Open to Public / Free Admission>

Forum

Environment, Energy, Safety, Environment, Humatronics & Robots, Cutting-edge Technologies, Materials and Motorsports

19 May

- Humatronics I: Linking Multimedia Systems
- Humatronics II: Aiming for Vehicles, Machines, and Computers that Harmonize with People
- The Automobile as Seen from Car Robotics: Searching for the Form of Future Mobility
- Exciting Movement with Minimum Mobility
- Development of Smart Grids and Expectations and Challenges for Mobility
- Further Advances of Passenger Vehicle Diesel Engines and their Technology

20 May

- Energy of Next-generation Vehicles Aiming for a Sustainable Society
- Motorsports Forum

21 May

- Present Capabilities of Aerodynamic Noise Analysis
- GIA Forum: Effectiveness of Traffic Accident Injury Prediction and How it can be Realized - Accident Data Reveals the Truth -
- Popularizing Fuel-cell Powered Vehicles
- The New Challenge of Automotive Materials: Realizing Sustainable Mobility

<Open to Public / Free Admission>



These forums will be held from 19 to 21 May, mostly in the Annex Hall next to the Exhibition Hall.

Texts including lectures at the forums will be on sale.

Availability of Forum Texts
book@jsae.or.jp

Report

Collegiate Student Safety Technology Design Competition

2 March 2010 – Domestic Final at JSAE
Nihon University Won the Top Prize

Four university teams that passed document screening in September 2009 participated in this competition, which was held on 2 March. The teams competed for the top prize by presenting different technological solutions to vehicle safety problems and then conducting a demonstration with scale models that embodied their ideas.



Top Prize Winning Team
Nihon University,

Engineering Dept. Biomechanics Lab, Biological Body Group

“Development of the Dummy Head in Consideration of Damage to Nerves: Evaluation of Distortion Damage to the Fallen Head of Eating Swine”.

The laboratory at Nihon University is advancing research into clarifying the mechanism of head injuries that occur in vehicle accidents.

In recent years, research in the field of impact biomechanics has revealed that strain placed on the brain is strongly tied to damage at the micron level.

However, the crash test dummies used at present do not consider the strain or nerve damage that is produced within the brain. This team, in an aim to develop a crash test dummy for strain produced in the brain and nerve damage, incorporated video of a drop impact experiment that used the head of a eating swine and gave a presentation on the relationship between the strength of the impact, the strain, and the nerve damage. This team was picked for the top prize based on the strong expectations toward their continuing research as they work to determine how to express and realize the logic of their damage evaluation experiment in a crash test dummy. This team has been exempted from the first qualifying trial (Sept. 2010) to determine the team that will represent Japan at the international competition in Washington D.C. (June 2011).



Specimen of Swine Head. Explaining the sensors and other items attached for the drop impact experiment.



Introducing a frozen section of the swine's brain that was taken and to which a histological dye was applied after the drop impact test.

Other Teams

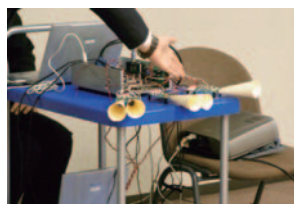
Shibaura Institute of Technology

“Obstacle collision avoidance support system” was proposed that integrates collision damage reducing brakes, with a system that actively supports evasive steering.



The University of Tokyo

“A noise emitting system for EV and HV vehicles that considers the surrounding environment” was proposed that emits a directed warning noise in the minimum necessary volume range to alert pedestrians of the EV & HV's approach.



Tokyo Metropolitan University

“Next-generation braking mechanism with combined aerodynamic brake” was proposed that will shorten the braking distance by the air resistance obtained through deploying a resistance plate on the vehicle's roof.



Upcoming in September

The 8th Student Formula SAE Competition of Japan

7~11 September 2010
ECOPA – Shizuoka Prefecture
Largest-ever Entry of 85 Teams



The top ranked teams are very closely matched, who will win this year's competition?

<http://www.jsae.or.jp/formula/en/>

Report

Seminar for Aspiring Student Formula Competitors

13 Jan 2010 / Nissan Grandrive

Learn the Fundamentals of Driving in the Latest Vehicles and Racing Cars

In this, the 3rd practical driving seminar, 30 students from 18 schools gathered in an aim to reach the student formula competition.

This seminar followed the content of the “Motor Car Development / Fabrication Guide”, and the students in the seminar learned fundamental knowledge concerning driving operations and manners through practical training in gymkhana, braking, slippery road driving, and slalom. Furthermore, Hiroyoshi Kato (Nissan Motor Co., Ltd.), a contemporary master craftsman in the field of test driving, also visited the seminar and talked with the students about working as a test driver, and the methods of setting and evaluating a vehicle.

The opportunity to use the latest vehicles and racing cars, as well as to receive instruction from professional drivers is helping this seminar to gain popularity among students.



Hiroyoshi KATO, Nissan's Test Driver a Contemporary Master Craftsman



Driving in the Racing Car



Slippery Road Driving



Supported by Nissan Staff Members

Information

Motor Car Development / Fabrication Guide

Now Available in English

The main aim of the Student Formula SAE Competition of Japan is to provide an opportunity for students to learn the nature and processes of monozukuri and to nurture engineers full of original ideas. This guide has been jointly written by university lecturers and highly experienced former employees of automobile makers. It is packed with automotive development know-how from various companies related to the planning, designing, manufacturing, evaluation, inspection, and management of automobile development, focusing on student formula cars. **Now English version is available.**

book@jsae.or.jp

Upcoming in End-July

Kids Engineer 2010

30~31 July 2010

Pacifico Yokohama

Inviting Children to the World of Science

The Kids Engineer program that was held two years ago in Yokohama and last year in Nagoya has been very well received by many elementary students and their parents. This year when it returns to Yokohama again it will be twice as large as before. Various plans are now being examined in an effort to turn this into an opportunity to encourage children to become interested in object creation and science.

This will be the third time that this program has been held and this time it will start three weeks earlier than usual at the start of the summer school vacations. Students who attend may find some good hints for topics for their summer break independent research projects.

For more details please see the announcement that will go up on our website in May.

<http://www.jsae.or.jp/kidseng/>

Call for Papers

2010 Annual Autumn Congress

29 September~1 October 2010

Kitakyushu - Fukuoka Prefecture

Application for Paper Presentation Accepted Until 23 April

2010's Autumn Congress will be held in the city of "Kitakyushu", Kyushu's northernmost city, supported by JSAE Kyushu Office. Applications for paper presentation are being accepted until 23 April 2010.

event@jsae.or.jp

http://www.jsae.or.jp/2010aki/index_e.html

Register Now



FISITA 2010 World Automotive Congress Budapest

30 May~4 June

Budapest - Hungary

The 33rd FISITA World Automotive Congress will be held in Budapest, the beautiful city of world heritage site.

Please visit the congress homepage for further information and for registration. Early-bird discount will be offered to those who have registered by 30 April 2010.

press@jsae.or.jp

<http://www.fisita2010.com/>

Information

Event Participation Registration Fee Discount

Continuing on from 2009

the Fees will Also be Reduced in 2010

As a means of expressing our gratitude to all of our members for their ceaseless support and cooperation we will continue on from 2009 and reduce the participation registration fees to some of our events in 2010 as well.

The economic downturn triggered by the financial crisis near the end of 2008 has unfortunately also cast a shadow over the operations of the JSAE. The economic environment in which we find ourselves in the 2010 fiscal year is predicted to be as difficult as before, but it is our intention to continue to make efforts to improve our service. In 2010 we would like to strive along with all of you to contribute to the promotion and development of automotive technology and the automotive industry, and we would be extremely pleased if you would make even greater use of the JSAE.

Examples

Annual Spring & Autumn Congress

Regular Member ¥5,000 ⇒ ¥3,000

Student Member ¥1,000 ⇒ Free Admission

Featured Publication

Encyclopedia of Automobiles

Fully Understand the Automobiles and Technologies
of the Past, Present and Future



Size : A5/768 pages

Language: Japanese

Price : 23,100 yen

This encyclopedia will allow you to obtain general knowledge about automobiles and automobile technology while also coming to understand the relationships between automobiles and daily life and society through such topics as automotive history, culture, safety, environment, and the future of our automobile-oriented society.

The short columns strewn throughout each section contain a wide variety of different content that is sure to appeal to those who love cars and can also be enjoyed as short breaks.

book@jsae.or.jp

Information



Language: Japanese

Monthly "Journal of JSAE"

Became an All-Colour Publication

Journal of Society of Automotive Engineers is now all-colour publication and is even more appealing magazine from this January issue.

The technical articles with graphics and diagrams are expressed in fine detail making the content even easier to see and understand.

book@jsae.or.jp

New English Journal

International Journal of Automotive Engineering

A New English-language Electronic Journal will be Launched

The publication of a new English-language journal, the "International Journal of Automotive Engineering" will begin and replace the English journal "Review of Automotive Engineering" that has been published up until now.

This new journal will be different from the previous one in that it will be published online via our website. Our aim is to take advantage of the convenience of the internet and to improve the accessibility to this journal over its predecessor so that it becomes better recognized.

This journal will collect automotive technology papers from both Japan and overseas and become a base of information on automotive engineering, especially engineering occurring in the Asian region. Moreover, through the publication of papers in this journal, we fully expect it to become a collection point for the submission of papers from researchers at well-established graduate schools and research institutes.

We will soon begin calling for submissions in preparation for the publication of the inaugural issue in July 2010.

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