

## JSAE Automotive Air-Conditioning CONFERENCE 2006

#### Society of Automotive Engineers of Japan/ Technical Session Meeting "Environments in vehicles"



#### Chairman: Kazuhiko Matsunaga (Isuzu Motors Limited)

#### **Objective**

M.A.C. (Mobile Air Conditioning) systems have been installed in most production automobiles in the world. Automobiles sold have been going up on worldwide view. M.A.C. system has influence on not only the heat feeling for passenger but also fuel consumption and global environment.

"The review of Automotive Air-Conditioning 2000" had already been published in 2000 and we have been updating "The review of Automotive Air-Conditioning 2005" including the latest technical papers based on the previous review.

Our committee is planning JSAE Automotive Air-Conditioning CONFRERENCE 2006. This conference focuses on the latest technology picked up by "The review of Automotive Air-Conditioning 2005" and will be presented by the specialists from various industries.

You are very welcome to join this conference. We expect you enjoy it.

#### CONFERENCE TITLE

#### "The review of Automotive Air-Conditioning 2006"

**Dates** Mar 13 - 15, 2006 **Venue** 



#### http://www.nyc.go.jp/

#### *Organized* Society of Automotive Engineers of Japan/ Technical Session Meeting "Environments in vehicles"

#### **Organized and Sponsored by**

Society of Automotive Engineers of Japan (JSAE) 10-2 Gobancho, Chiyoda-ku, Tokyo, 102-0076 Japan Phone: +81-3-3262-8211, Fax: +81-3-3261-2204 http://www.jsae.or.jp/index\_e.html

#### **Co-Sponsored** by

Japan Automobile Manufactures Association (JAMA) Japan Auto Parts Industries Association (JAPIA)

#### In Cooperation with

Japan Refrigeration and Air Conditioning Industry Association (JRAIA) Japan Industrial Conference for Ozone Layer Protection (JICOP)

#### Languages

The symposium will be conducted in English and Japanese with simultaneous interpretation.

#### **Registration Secretariat**

All inquiries related to this symposium should be directed to the following contact person. Hiorshi Muto (Mr.) Professional Meeting Team Society of Automotive Engineers of Japan (JSAE) 10-2 Gobancho, Chiyoda-ku, Tokyo, 102-0076 Japan Phone: +81-3-3262-8216, Fax: +81-3-3261-2204, E-mail: Muto@jsae.or.jp

#### Registration Fee: ¥31,500

### Program

#### 1<sup>st</sup> day (Monday, Mar13<sup>th</sup>) 9:30~10:00 **Opening Address** Kazuhiko Matsunaga, Chairman of JSAE Cabin Environment Technology Committee 10:00~11:00 **Technical Session 1** Moderator: Osamu Ishida, Honda R&D Co., Ltd 1.1 Yasuo Moriyoshi, Chiba University "Development of Quick Response Gas Temperature Measurement Using Two-Wired Thermocouple' 1.2 YANG, Jeong-Hoon, Institute of Industrial Science, the University of Tokyo "Measurement of AIr Velocity and Ventilation Efficiency Distributions in a Modeled Car Space" Key note speech 11:00 Shinsuke Kato, Institute of Industrial Science, the University of Tokyo 12:00 "Investigation of Ventilation Efficiency in an Enclosed Space with CFD and its Applications" 12:00~13:00 Lunch 13:00~14:00 Moderator: Yoshiichi Ozeki, Asahi Glass, Ltd Key note speech Bjarne Olesen, DTU "Evaluation of thermal comfort and indoor air quality in vehicles according to international standards" 14:00~15:00 **Technical Session 2** Moderator: Yasushi Kamikura, Hino Motors, Ltd. 2.1 Itsuhei Kouri, Musashi Institute of Technology "Assessment of Thermal Environment in a Vehicle Compartment" 2.2 Tomonori Sakoi, National Institute of Advanced Indstrial Science and Technology "Prediction of Thermal Comfort in Non-uniform Thermal Environment" Refreshment break 15:00~15:10 15:10~16:10 **Technical Session 3** Moderator: Yasushi Kamikura, Hino Motors, Ltd. 3.1 Hiroki Nagayama, NISSAN Motor Co., Ltd.

	3.2	"Effects of environment in sun-heated cars on passengers' thermal-permission" Hidenori Esaki, Honda R&D Co.,Ltd. "A combined analysis of human and seat thermal models with cabin CFD for prediction of thermal sensation and comfort
16:10~17:10		Key note speech   Shouzo Nakayama, TOYOTA INDUSTRIES   CORPORATION   "Manufacturing"
17:10~18:00		Break
18:00		Welcome reception (SAKURA)

2 <sup>nd</sup> day (Tuesday, Mar14 <sup>th</sup> )				
9:00~10:00		Moderator: Kiwamu Inui, Toyota Motor Corporation		
		Key note speech		
		Tohru Ikegami, Toyota Motor Corporation		
		"JAMA Activity for Reducing Global Warming Impact from MAC Refrigerant"		
10:00~11:00		Technical Session 4		
	4.1	Masato Kaneko, Idemitsu Kosan Co.,Ltd		
		"The Development of PAG Refrigeration Lubricants for Automotive A/C with CO2"		
	4.2	Toshiyuki Motohashi, CalsonicKansei Corp.		
		"Development of Cold Catalyst Filter"		
11:00~12:00		<u>Key note speech</u>		
		Akio Morishita, DENSO CORPORATION		
		"The Future for Mobile Air Conditioning		
		To Young MAC Engineers: Challenges on New Product Design and Development"		
12:00~13:00		Lunch		
13:00~14:00		Moderator: Hideto Noyama, Mitsubishi Heavy Industries, Ltd.		
		<u>Key note speech</u>		
		Stephen Andersen, EPA		
		"U.S. EPA Efforts to Reduce and Eliminate MAC Greenhouse Gas Emissions"		
14:00~15:00		Technical Session 5		
	5.1	Toshiyuki Nagashima, ShowaTansan Co.,Ltd		
		"CO2 Injection System"		
	5.2	Etsuo Shinmura, Showa Denko K.K.		
		"Development of High-Performance CO2 Evaporator"		
15:00~15:10		Refreshment break		
15:10~16:10		Moderator: Yuki Hori, Mitsubishi-fuso Truck & Bus Corparation		
	6.1	Technical Session 6		
	6.1	Eiji Kumakura, Daikin Air-conditioning and Environmental Laboratory, Ltd.		
	<b>()</b>	"Development of Two-Phase Flow Expander for CO2 Heat Pumps and Air-Conditioners"		
	6.2	Toshio Shudo, Hokkaido University		
16.10.17.10		"Heat Transfer and Thermal Efficiency in Hydrogen Combustion Engines"		
16:10~17:10		<u>Key note speech</u>		
		Eiji Hihara, the University of Tokyo "Fundamental Technology for Carbon Dioxide Operated Heat Pumps"		
16:10~17:10		"Fundamental Technology for Carbon Dioxide Operated Heat Pumps"		
16:10~17:10		<i>Closing</i> Break		
17:10~18:00				
10.00		Banquet(Reception)		

3 <sup>rd</sup> day (Wensday, Mar15 <sup>th</sup> )		
9:00~12:00		Moderator: Tomohisa Imafuji, Sanden Corporation
		Technical Session 7
	7.1	Kouichi Tatsu, ISUZU ADVANCED ENGINEERING CENTER, LTD.

		"Cabin Air Quality and Evaluation method"
	7.2	Kunihiro Hoshino, GL Sciences Inc.
		"Measurement of VOC and SVOC emitted from automotive interior materials by thermal
		desorption test chamber method."
	7.3	Katsuji Sato, Kaneka Techno Research Co.,Ltd.
		"Measurement of Emission Rates of Carbonyls and VOCs from Vehicle Interior Materials."
		Masafumi Morimoto, EPPEC Corp
		"The measurement example of the chemical emission from building materials, automobile
		interior material and home electronics, by the chamber method."
9:00~12:00		<u>Key note speech</u>
		Wensing, WKI
		"Evaluation of chemical emissions inside from cars"
12:00~13:00		Lunch
13:00~14:00		Moderator:Nobuo Nakano, Rikenkeiki Corporation
		Key note speech
		Shin-ichi Tanebe, Waseda Univ
		"Human Factors of HVAC and Energy of Automobile
14:00~15:00		Technical Session 8
	8.1	Tetsuji Ukita, Mitsubishi Motors
		"The prediction technique trend of the car air conditioning. $\sim$ JSAE AC review section
	8.2	No.6~"
	0.2	Toru Komotriya, FUJI HEAVY INDUSTRIES LTD.
		"Approach to Simulation of Underhood Thermal Management"
15:00~15:10		Refreshment break
15:10~16:10		Moderator: Takakazu Matsuo,Espec, Ltd.
	0.1	Technical Session 9
	9.1	Shinichi Hara, Valeo Thermal Systems Japan
		"New Production Technology for Improvement of Comfort in the CarCompartment.
	9.2	$\sim$ JSAE AC review section No.8 $\sim$ "
	9.2	Yasuhiro Mizuno, DENSO CORPORATION
	9.3	"Numerical simulation of Pollen Flow in a Passenger Compartment"
	9.3	Kimiko Kato, Figaro Eng. Inc. Nobuo Nakano, Riken Keiki Co., Ltd.
		" A monitoring of air quality in a car's cabin by use of a semiconductor gas sensor"
16:10		Closing

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