



# **RESULT REPORT**



**Aichi Sky Expo** 

ONLINE STAGE 2 7/10 % - 7/31 %

### Introduction

The 8th JSAE Automotive Engineering Exposition 2024 NAGOYA took place for three days From Wednesday, July 17 to Friday, July 19, 2024.

This year, 392 companies exhibited in 859 booths,

We were pleased to have 29,852 visitors over the three-day period.

This report describes the results of the exposition based on the answers to questionnaires by visitors and exhibitors.

These results will be used to make subsequent expositions even more successful.

Thank you for supporting the Automotive Engineering Exposition,
and we look forward to your continued support in the future.

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# **SUMMARY REPORT**

Exhibition Name	AUTOMOTIVE ENGINEERING EXPOSITION 2024 NAGOYA
Dates	Wednesday, July 17, through Friday, July 18, 2024 Three days: 10:00 - 17:00
Venue	Aichi Sky Expo (Aichi International Exhibition Center) Hall D/E/F
Organizer	Society of Automotive Engineers of Japan, Inc. (JSAE)
Under the Auspice of	METI Chubu, Aichi Prefecture, Tokoname-City
Supported by	Automobile Business Association of Japan / Flat Glass Manufacturers Association of Japan / Information Processing Society of Japan Aluminium Association / Japan Auto-Body Industries Association Inc. / Japan Auto Parts Industries Association / Japan Automobile Manufacturers Association, Inc. / Japan Automobile Research Institute / Japan Automobile Transport Technology Association / Japan Automotive Machinery and Tool Manufacturers Association / Japan Automotive Service Equipment Association / Japan Automotive Software Platform and Architecture / Japan Internal Combustion Engine Federation / Japan Lubricating Oil Societies / Petroleum Association of Japan / The Institute of Electrical Engineers of Japan / The Iron and Steel Institute of Japan / The Japan Automobile Tyre Manufacturers Association, Inc. / The Japan Federation of Engineering Societies / The Japan Institute of Light Metals / The Japan Magnesium Association / The Japan Petroleum Institute / The Japanese Society for Artificial Intelligence / The Japan Society of Mechanical Engineers / The Society of Instrument and Control Engineers / The Society of Materials Science, Japan
Attendees	Attendees consist of engineers, researchers, from the automobile, electronic, test & measurement equipment, information & software, logistics & transportation industries as well as educational & research institutes.

**Exhibition Scale** 

Number of Exhibitors 392 313 (2023)

**Number of Booths** 

**859** 644 (2023)

Registrations

29,852

25,497 (2023)

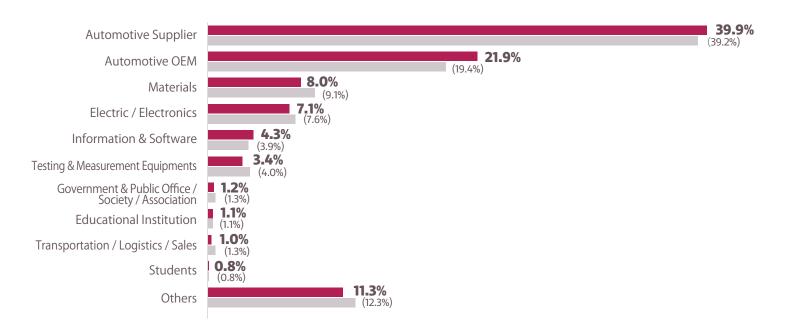
### Breakdown of Visitors by Date

Date	Weather	Registrations	Registrations (2023)
Wednesday, July 17	<i></i>	8,162	7,355
Thursday, July 18	<u>.</u>	9,931	8,248
Friday, July 19		11,759	9,894
Total		29,852	25,497

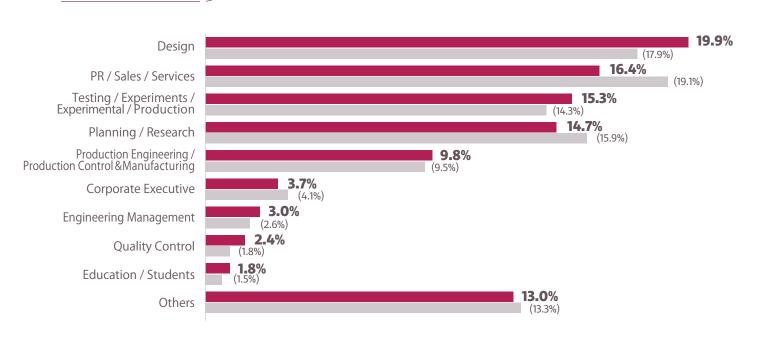
## **VISITORS** 2



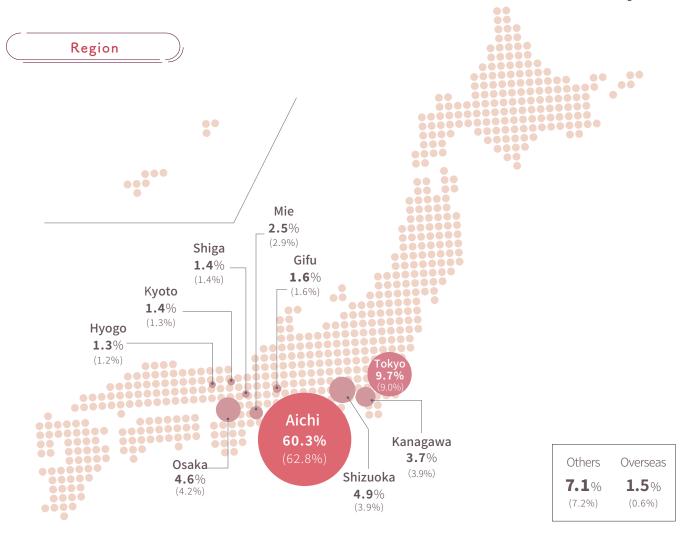
### **Business Category**

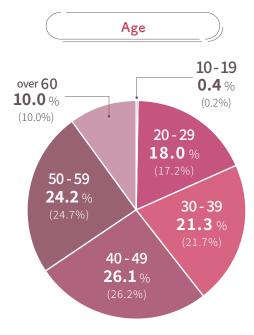


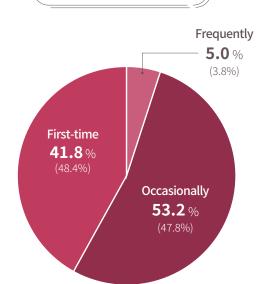
### Job Category



\*() figures for 2023







Frequency of Visits





It was good to have locally oriented special events and exhibitions different from the contents of the exhibitions at the Yokohama exposition.

Since many companies only exhibited at the Nagoya exposition, it was good to see different exhibits from those at Yokohama. This exposition was an excellent opportunity to obtain an overall view of what initiatives different companies are pursuing.



Every year, I am really surprised at the scale and density of the exposition. This exposition communicates the individuality and future direction of the exhibitors. It was a real learning experience.

Maybe it was the proximity to Centrair airport, but there seemed to be many exhibits from non-Japanese companies. This was a good opportunity to learn about the trends of non-Japanese companies as well as just the Japanese automotive industry.

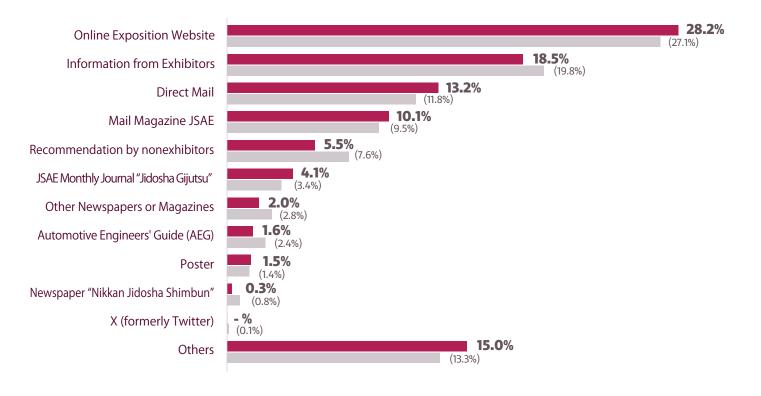


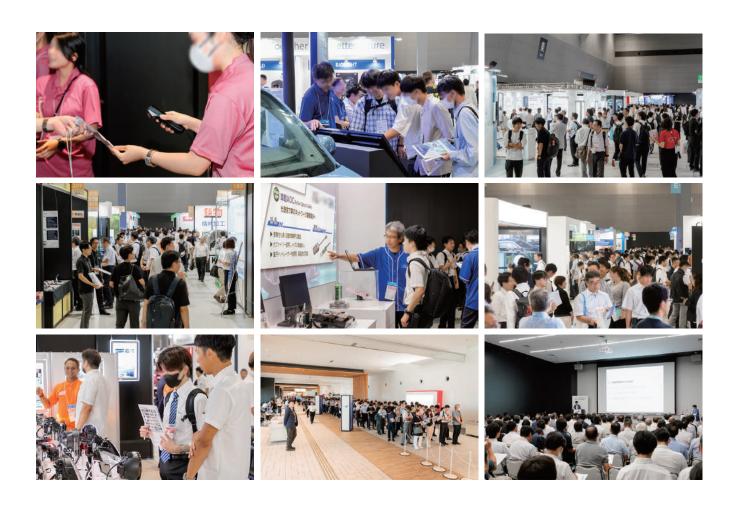
Since the scale of this year's exposition was larger than previous events in Nagoya, I studied the venue in advance using the pre-released web map to narrow down where I wanted to visit. This preparation helped me tour the exposition efficiently and gave me the time to see some of the special events as well as the exhibition booths. The content was extensive and worth seeing.

I also had the chance to see the start-up company exhibits and attend the presentation stage and exhibitor seminars.

\*() figures for 2023 2024 2023

How Visitors Knew about the Exposition

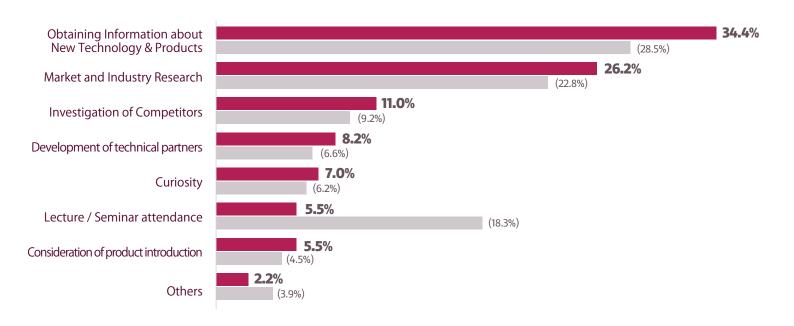




## **VISITORS** 2

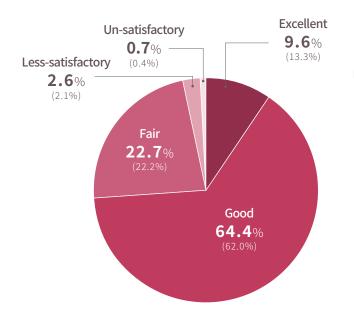
\*( ) figures for 2023 2024 2023

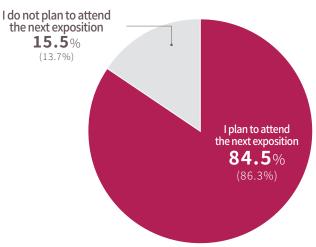
### Purpose of Visit



# Satisfaction with Visit

Likelihood of attending the next exposition



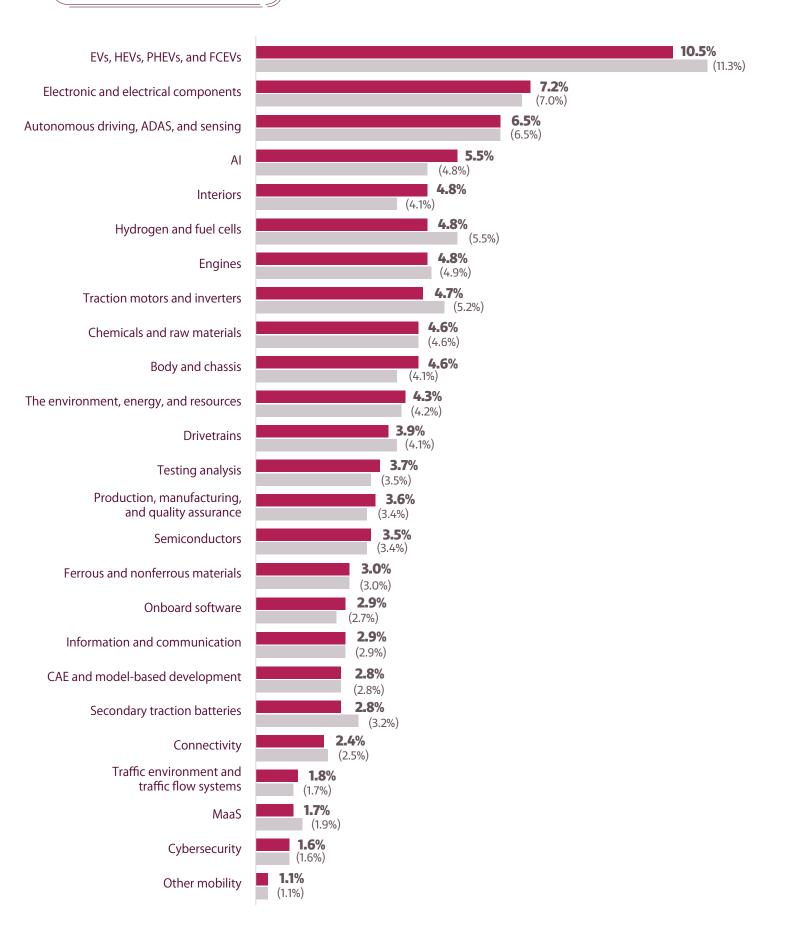




\*( ) figures for 2023

2023

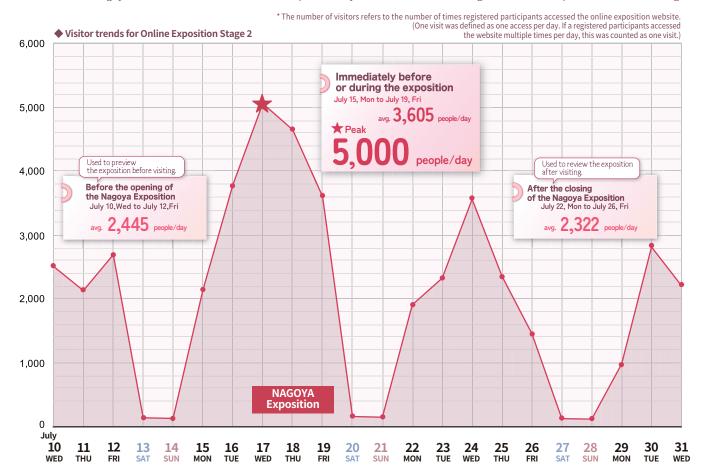
### **Exhibition Categories of Interest**



# **VISITORS** 2

### Status of utilization regarding online exhibitions

Visitors to the Nagoya exhibition used online exhibits for preliminary research before attending and for follow-up checks after attending.



# Visitor's Review Visitor comments using online exhibition and digital map

I felt that there was more information disclosed than last year. This year, I confirmed the exhibition contents in advance online and used the actual exposition to talk with the exhibitors. I hope that more companies will enhance their online content in the future.

I'm glad that I grasped the outline of the exposition to some extent before coming.

I was able to prepare what I wanted to ask before reaching the venue and make efficient use of my time. I intend to do the same before coming next year as well.

The digital map registration method was easy to understand. It was useful to have an efficient route to all my target exhibits that I could study in advance. Companies that introduced the details of their exhibits in the online exposition were easy to select as candidates for an in-person visit.

The function to add items to the visit list was convenient. The tool made it easy to create a list of interesting companies. Being able to make and create a list of visit notes at the venue helped me prepare and create my report faster because I could paste these notes straight into Excel.

I used a digital map to navigate the exhibition hall. Additionally, since some exhibits couldn't be fully viewed in detail on-site, it was great to be able to check the missed information online later.

I used the online exposition to see if I had missed any exhibits when I visited the venue.

In addition, it was very useful to be able to make notes about my conversations with people in the booth that could be pasted straight into my company report.







### Which exhibits left the best impression in the general exhibits?

**Answer Ranking** 

No.1 | FCVs

**No.2** | Next-generation mobility

**No.3** Decorative films

No.4 BEVs

**No.5** | Recycled Products

3D printers Magnetic flux measuring devices

3D scanners Massage seats

Analysis software Metallic nanoparticles

Autonomous driving technologies Metering pumps

Biofuels Motors

Carbon neutrality Nap boxes

Coating transfer sheets On-board Ethernet transmission

Connectors On-board lens units

Cooling plates PHEVs

Cut models Plant-derived material products

Disc brakes Portable coolers

Easy-peeling tape Power semiconductors

eAxle Refrigerant flow control

Electrostatic brushes Remote Sensing

Expansion-suppression bands Simulation system Fatigue mitigation systems Static mixers

Gaze-following systems Test dummies
Gigacasting Thermostat case

Haptic transmission units Urethane-free technologies

Heat dissipation plates Vehicle Exhibits
In-wheel motors VR technology

Interior skin materials Workplace digital transformation

Laser welding



### **Answer Ranking**

**No.1** | Carbon neutrality

No.2 BEVs

No.3 | Circular Economy

**No.4** Autonomous driving technologies

**No.5** | Electrification Technology

Actual vehicle cut models Hydrogen-electricity conversion technologies

Aerospace development Instrument panels

Agile development internal combustion engines

Al Logistics solutions

Assistance devices Model-based development technologies

Biodegradable plastics Next-generation sensors

Biofuels Non-Japanese BEV manufacturers

Bodyframe On-board electronic components

Booths with hands-on exhibits Optical communication

Busbar Passive safety

CAE support tools PHEVs

Charging technologies Recycling technologies

Digital transformation-related technologies Remote sensing

Display circuits SDGs
Driving simulators SDV

3

Electromagnetic control Solar cells

Energy Storage batteries
Environmentally friendly products Task automation

eVTOL Testing tools

FCV Truck EV technologies

Gigacasting Weight reduction technologies

Heat management Whitebody

Hydrogen production



Likelihood of exhibiting at the next exposition



Positive comments were received from many exhibitors.



# EXHIBITORS' VOICE

I got the impression that more visitors came with a pre-determined purpose than in Yokohama. Many front-line engineers came, as well as many people with a clear understanding of the issues. For those reasons, people tended to stay in our booth for longer. Many people visited our booth after using the online information to study where to go in advance. I felt that the information presented at the online exposition was quite effective.



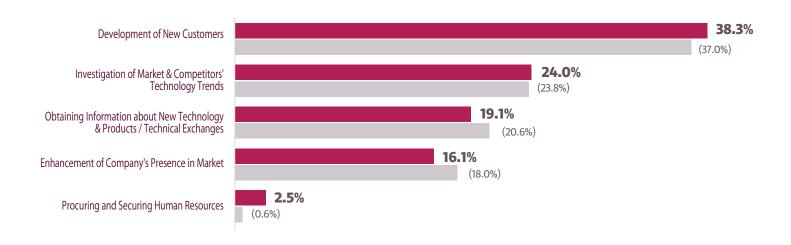
We exhibited at both the Yokohama and Nagoya expositions. Although it is difficult to change the exhibits since the expositions are close together, we selected exhibits aimed to people from the Chubu region. Visitors reacted differently from the Yokohama exposition, and we understood the benefit of coming here. If the characteristics of both expositions can be further differentiated in terms of exhibits, special events, visitors, and the like, I think it will become even easier to exhibit here. We are looking forward to next year.

Although we exhibited in the start-up company area, many visitors came with a specific purpose. We were also pleased by the results of the presentation stage. After making our presentation, we were able to talk with members of the audience in our booth, so we appreciated the benefit of including a seminar in our plan. We felt that this was a valuable opportunity to showcase our products and the like to visitors from the Chubu area.



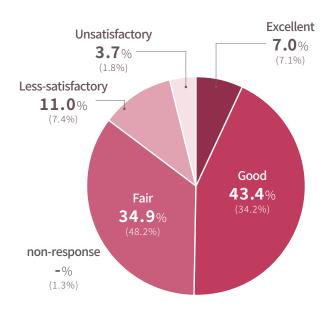


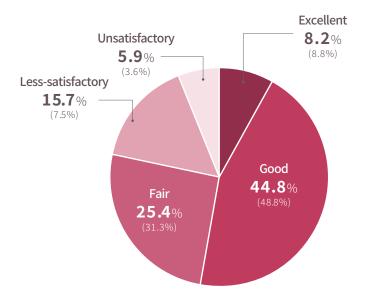
### Purpose of Visit



### Satisfaction with Exhibit

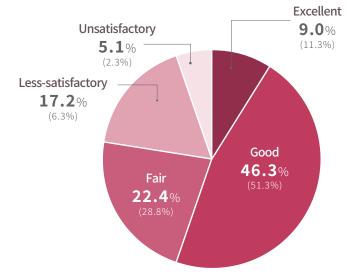
# Impression of Visitors



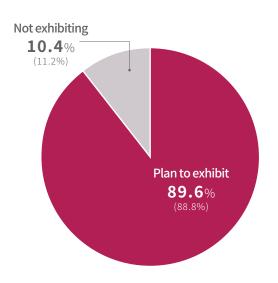


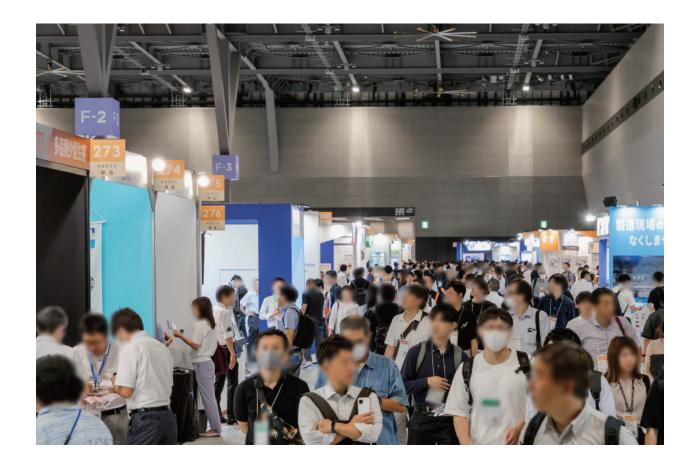
\*( ) figures for 2023

### Comprehensive Evaluation



Likelihood of exhibiting the next exposition





### **JSAE NAGOYA BEST 30**

The visitors selected the exhibitors that made the biggest impression.

# **3,177** votes were received from the visitors. 2,942(2023)

- 1 Toyota Motor Corporation
- 2 Honda Motor Co., Ltd.
- 3 DENSO Corp.
- 4 AISIN CORPORATION
- 5 TOYOTA AUTO BODY Co., Ltd.
- 6 TOPPAN Co., Ltd.
- 7 Nissan Motor Co., Ltd.
- 8 SEKISUI CHEMICAL Co., Ltd.
- 9 Mitsubishi Motors Co., Ltd.
- 10 Toray Industries, Inc.
- 11 Suzuki Motor Corp.
- 12 Mazda Motor Corporation
- 13 Hino Motors Ltd.
- 14 ISUZU MOTORS LIMITED
- 15 Sumitomo Chemical Co., Ltd.

- 16 Mitsubishi Chemical Corp.
- 17 Aica Kogyo Co., Ltd.
- 18 Mitsui Chemicals, Inc.
- 19 AGC Inc.
- 20 Tebiki Inc.
- 21 Sumitomo Electric Industries Ltd.
- 22 SOLIZE Corporation
- 23 MEIJI ELECTRIC INDUSTRIES Co., Ltd.
- 24 KOBELCO GROUP
- 25 DAD Co., Ltd.
- FURUKAWA ELECTRIC Co., Ltd.
- Murata Manufacturing Co., Ltd.
- 28 ANALOG DEVICES K.K.
- SUBARU Co., Ltd.
- 30 YAMAHA MOTOR Co., Ltd.

# Other Exhibitors of Interest

ACHILLES Corp.

Nippon Light Metal Group

GeoTechnologies Inc.

Texas Instruments Japan Ltd.

ONO SOKKI Co., Ltd.

Toyota Technical Development Co., Ltd.

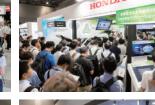
FT TECHNO Co., Ltd.

A2Mac1 Japan Ltd.

MAC SYSTEMS Corp.

MEIDENSHA Corp.









# EXHIBITOR AWARDS FOR OUTSTANDING CONTRIBUTION

As a token of its deep gratitude, the JSAE awarded certificates of thanks to exhibitors who have made a valuable contribution to the successful running of the exposition.

List of Winners of Outstanding Contribution Award at the Automotive Engineering Exposition 2024 Nagoya



JFE TECHNO-RESEARCH Corp.



Murata Manufacturing Co., Ltd.



TAKASAGO, Ltd.

\*in alphabetical order



Exhibitors who have participated in the exposition 15 times, or have exhibited across a total of 50 booths.

# **SPECIAL AREA**

# Start-ups and Academia

The start-ups and academia area featured exhibitions and presentations from the start-up companies that will lead the industry in the future and academic institutions aiming to implement the results of their research in society. (1 presentation per day for each company over the three days on application).

### $\spadesuit$ Exhibitors who used the presentation stage for start-ups and academia

(Exhibitors listed in Japanese alphabetical order.)

SiB Co., Ltd.	Utilizing Eye Tracking Technology for Visible Improvement in Manufacturing Industry and the Future of Manufacturing [Achieving Reduction in Training Time in Factory DXI]
Elephantech Inc.	Flexible boards for low-cost and low-environmental impact battery voltage monitoring wiring:  Achieve flexibility through a unique method using metallic inkjet printing technology
CARBON FLY Inc.	Toward the social implementation of nanocarbon materials
KognicAB	Cloud-based software capable of managing components and materials in the supply chain at the optimum volumes
PatSnap Pte. Ltd	Function upgrade from 2023 (reading patents using Al so you can focus purely on the technology) to 2024 (using Al to formulate patent reports and find your eureka moment! Al is transforming the innovation process: Learn about these functions.
Xenoma Inc.	Introduction of human-based measurement in the automotive industry using smart apparel
AIHARA Lab. Hosei University	Development of highly efficient self-locking gear for low reduction gear ratios
Motion Lib,Inc.	Real haptic touch-based control technology: Creating the future of people and machines
LEAN PATH Inc.	Cloud-based software capable of managing components and materials in the supply chain at the optimum volumes
RENATA MECHATRONICS PRIVATE LIMITED	$\sim Launch\ of\ automotive\ plastic\ insert\ molded\ parts\ from\ India\ to\ the\ world!\ \sim \\ (1)\ Precision\ insert\ moldings\ produced\ in\ India\ (2)\ Monozukuri\ with\ precision\ mold\ technologies\ from\ Japan\ (3)\ Introduction\ of\ automation\ systems\ from\ Germany$











# The Chubu Branch of the JSAE

Starting this year, the exposition featured a new area hosted by the Chubu Branch of the JSAE showcasing companies active in the central Chubu area of Japan.

#### **◆** Exhibitors

Nishio city, Aichi Prefecture/Air Water Inc./Gifu Prefecture/Fukuju Industry Co., Ltd./Yokoi HD





(Exhibitors listed in Japanese alphabetical order.)



### **EXHIBITORS LIST ≔**

THE NUMBER OF EXHIBITORS

392 exhibitors

THE NUMBER OF EXHIBIT BOOTHS 859 booths

**AUTOMOBILE** 

10

**PARTS** 

153

**MATERIALS** 

35

**TESTING** 

93

**CAE SOLUTIONS** 

22

**CAR ELECTRONICS** 

45

R&D/PUBLICATION/ ASSOCIATION

22

START UP

12

### **AUTOMOBILE**

Hino Motors, Ltd.

Honda Motor Co., Ltd.

ISUZU MOTORS LIMITED

Mazda Motor Corporation

Mitsubishi Motors Co., Ltd.

Nissan Motor Co., Ltd.

SUBARU Corp.

Suzuki Motor Corp.

TOYOTA AUTO BODY Co., Ltd.

Toyota Motor Corp.

**PARTS** 

A2Mac1 Japan Ltd.

AikoSpring Co., Ltd.

**AISIN** Corporation

ALTIA Co., Ltd.

Biko Industry Co., Ltd.

Caillau Ltd.

Correns Corporation (WAFIOS/PST/L+R)

CPE ELECTRONICS Co., Ltd.

CWB Electronics Japan Co., Ltd.

Daidometal Co., Ltd.

DAIICHI JITSUGYO Co., Ltd.

Daitron Co., Ltd.

Dana Japan, Ltd.

DENSHIJIKI INDUSTRY Co., Ltd.

DENSO Corp.

DIAMET CORPORATION

FALTEC Co., Ltd.

Fiem Industries Limited

FTS Co., Ltd.

FUJISOFT Inc.

FUKUJU INDUSTRY CO.,LTD

FURUKAWA ELECTRIC Co., Ltd.

GLOBETECH Inc.

Harxon Corporation

HASHIBA INTERNATIONAL Inc.

HEISHIN Ltd.

HIROSE ELECTRIC Co., Ltd.

HONDA TSUSHIN KOGYO Co., Ltd.

HORI GLASS Co., Ltd.

HOTTY POLYMER Co., Ltd.

Hyundai Pavilion

• KUM HO INDUSTRIAL

DAE YOUNG MACHINERY

NS WORLD

BIOLIGHT

HMG OFFICE

ENA INDUSTRY

DAS

SANYANG RUBBER

TESK

SJF

KOREA LOST-WAX

G-Max

SENSORTEC

DAEYANG TECH

AFS

DKS

DAOU PRECISION IND.

BONG IL METAL

GWANG SHIN GEAR

HYUNDAI POLYTECH

HYLIUM INDUSTRIES

Hyundai Polytech

Dongil Machinery

igus K.K.

illumination Co., Ltd.

indie Semiconductor Japan K.K.

Institute for Information Industry(III)

IRISO Electronics Co., Ltd.

JOMESA Japan K.K.

Kaminashi Inc.

KASAI KOGYO Co., Ltd.

KATO SEISAKUSHO Co., Ltd.

Kawasaki Industrial Co., Ltd.

KEEPER Co., Ltd.

KEL Corp.

Kimura Foundry Co., Ltd.

Laubinger + Rickmann

KITAGAWA INDUSTRIES Co., Ltd.

<sup>\*</sup>Alphabetical order in each category.

<sup>\*</sup> The ""•"" mark indicates a joint exhibitor or a group exhibitor.

# **EXHIBITORS LIST ≡**

EXHIBITORS LIST		
Knorr-Bremse Commercial Vehicle Systems Japan Ltd.	• ASAHI TEKKO CO.,LTD.	Aica Kogyo Co., Ltd.
Knowles Electronics Japan K.K.	Nissin Manufacturing Co., Ltd.	ARKEMA
KOIWAI Co., Ltd.	NITTOSEIKO Co., Ltd.	ATG Hand Care (Pvt) Ltd.
Komine Musen Denki Co., Ltd.	NIX, Inc.	Chemicals Evaluation and Research Institute, Japan
Kurashiki Kako Co., Ltd.	OGAWA INDUSTRY Corp.	Covestro Japan Ltd.
Kurimoto Co., Ltd.	Okazaki Manufacturing Company Co., Ltd.	DJK Corp.
KYOWA KOGYO Co., Ltd.	Osaka Forming Co., Ltd.	DuPont Japan K.K.
LCA Plus-Mitsui & Co.,LTD.	QMS Co., Ltd.	Envalior Japan K.K.
Leaner Technologies Inc.	Resonac Corporation	FUJIMORI Kogyo Co.,Ltd.
Manufacturing Support Center Shimosuwa	RHYTHM Co., Ltd.	GUNZE LIMITED
CERIOTEC CO.,LTD	Saint-Gobain K.K.	Hangzhou Magnet Power Technology Co., Ltd
<ul> <li>Yamato Denki Ind Co.,ltd</li> </ul>	SANEI Industries Co., Ltd.	Henkel Japan Ltd.
● INGS SHINANO Co.,Ltd.	SANJO MACHINE WORKS, Ltd.	KOBELCO GROUP
● NAGANO HIDAKA Co. Ltd.	Sanshu Wire-Harness Co., Ltd.	KURARAY Co., Ltd.
• ITO PARTS INDUSTRY CO .,LTD.	SHENZHEN HOVERBIRD ELECTRONICS TECHNLOGY Co., Ltd.	KYORITSU ELEX Co., Ltd.
• Kyoshin Seiko Co.,Ltd.	SHIGERU Co., Ltd.	LINTEC Corp.
Martinrea	• IBUKI lnc.	Midori Auto Leather Co., Ltd.
Maxell, Ltd.	SJM Co., Ltd.	Mitsubishi Chemical Corp.
MD Electronics	SMT Japan	Mitsui Chemicals Inc.
METALART Corp.	Stueken JAPAN	Oji Holdings Corp.
Miba Precision Components (China) Co., Ltd.	Sumitomo Electric Industries Ltd.	Pro-pure Incorporation
MICRO FASTENERS Co., Ltd.	SWCC Corp.	SABIC
MinebeaMitsumi Inc.	TACHI-S Co., Ltd.	San Fang Chemical Industry Co., Ltd.
Mitec	Taiho Kogyo Co., Ltd.	SEKISUI CHEMICAL Co., Ltd.
Mitsuboshi MFG Co., Ltd.	TAIYO MANUFACTURING Co., Ltd.	Sumitomo Chemical Co., Ltd.
Mouser Electronics Inc.	Takatori Corp.	TATSUTA ELECTRIC WIRE & CABLE CO., LTD.
YAGEO Group	Tamachi Industries Co., Ltd.	TOPPAN Co., Ltd.
Nisshinbo microdevice	TE Connectivity	Toray Industries, Inc.
• Vicor	TODA RACING Co., Ltd.	TOYO DRILUBE Co., Ltd.
Nippon Chemicon	TOKAIKOGYO CO., LTD.	TOYO MORTON Co., Ltd.
Bourns Inc	Kaseikogyo Co., Ltd.	UACJ Corp.
• Analog Devices, Inc.	• ADO Co.,Ltd.	VisasQ Inc.
Musashi Engineering Inc.	TOKIN Corp.	Zeon Corp.
NHK spring Co., Ltd.	TOP Co., Ltd.	TESTING
Nippon Cannon Inc.	Topia Co., Ltd.	A&D Co., Ltd.
Nippon Donaldson, Ltd.	TPR Co., Ltd.	ADVANTEST Corp.
Nippon Light Metal Group	TRIS Inc.	Allion Japan Inc.
Nippon Tanshi Co., Ltd.	Union Gosei Co., Ltd.	ATESTEO Japan K.K.
Nippon Vinylon Co., Ltd.	UNIVANCE Corp.	AutoTechnicJapan Co., Ltd.
NISHIO CITY	Witzenmann Japan K.K.	Carl Zeiss Co., Ltd.
Ohno Seiko Co.,Ltd.	YOKOI HD Co., Ltd.	Chemitox Inc.
• MATIX Co., Ltd.	MATERIALS	CLEARIZE Co., Ltd.
• SEKISO Co.Ltd.	ACHILLES Corp.	DEWE Japan Co., Ltd.
Kanuc Co.Ltd	AGC Inc.	DITECT Corp.
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Easy-Measure Co., Ltd.	Ono Sokki Co., Ltd.	BETA CAE Systems Japan Inc.
Enable Inc.	Oxford Instruments K.K.	Dell Technologies Japan Inc.
EVIDENT Corp.	PHOTRON LIMITED	FORUM8 Co., Ltd.
Fime Japan /Zimperium	Physix Technology Inc.	FOUNDATION FOR COMPUTATIONAL SCIENCE
FT TECHNO Co., Ltd.	<ul> <li>TechnoTeam Bildverarbeitung GmbH</li> </ul>	FsTech Inc.
Fuji Ceramics Corporation	Polytec Japan	GENIO Solutions Co., Ltd.
Fuji Technical Research Inc.	Pulstec Industrial Co., Ltd.	GeoTechnologies Inc.
fukuda Co., Ltd.	QMAIL	IDAJ Co., Ltd.
GAFS Co., Ltd.	Rigaku Corporation	Integral Technology Co., Ltd.
HORIBA, Ltd.	RION Co., Ltd.	NewtonWorks Corp.
Humanetics Innovative Solutions Japan K.K.	SAGINOMIYA SEISAKUSHO, INC.	NTT DATA Automobiligence Research Center Ltd.
IR System Co., Ltd.	SANKO Co., Ltd.	Realis Simulation Inc.
ITK Engineering Japan Inc.	• TUV Rheinland Japan Ltd.	rFpro Limited
Japan Electric Meters Inspection Corporation	NOISE LABORATORY CO.,LTD.	RICOS Co., Ltd.
Japan Quality Assurance Organization	• FTS., LTD.	Satyam-Venture Engineering Services Private Limited
JFE TECHNO-RESEARCH Corp.	HAKARU PLUS CORPORATION	SCSK Corp.
KEYCOM Corp.	Software Research Associates, Inc.	SCTM Engineering Corp.
KIKUSUI ELECTRONICS Corp.	<ul><li>aptpod, Inc.</li></ul>	Terrabyte Co., Ltd.
KYOWA ELECTRONIC INSTRUMENTS Co., Ltd.	Sanyo Trading Co., Ltd.	CAR ELECTRONICS
Laser Measurement Corp.	SGS Japan Inc.	Advanced Data Controls Corp.
Leader Electronics Corp.	SHIMADZU Corp.	Amphenol Japan Ltd.
Loccioni Japan Co., Ltd.	Shimadzu Techno-Research, Inc.	ANALOG DEVICES K.K.
Marubeni Information Systems Corp.	STRINGO Co., Ltd.	ASTI Corp.
Cybellum Technologies LTD.	SYSTEM PLUS Inc.	Audiokinetic K.K.
Marubun Corp.	TAKASAGO, Ltd.	Bell Energy K.K.
MEIDENSHA Corp.	Tec Gihan Co., Ltd.	Canon IT Solutions Inc.
MEIJI ELECTRIC INDUSTRIES Co., Ltd.	TECNOS Co., Ltd.	Chroma Japan Corp.
• Aixtal Co.,Ltd.	TESCO Corp.	CRI Middleware Co., Ltd.
• Anton Paar Japan K.K.	TOKYO BOEKI TECHNO-SYSTEM Ltd.	DynaComware Corporation
• s.t.japan inc.	Tokyo Measuring Instruments Laboratory Co., Ltd.	Green Hills Software
ORIX Rentec Corporation	TOYO Corp.	Harada Vehicle Design Co., Ltd.
Kawasaki Trading Co., Ltd.	Toyota Technical Development Co., Ltd.	ION TECHNOLOGY CENTER Co., Ltd.
• KEN AUTOMATION INC.	TSURUGA ELECTRIC CORPORATION	Japan Aviation Electronics Industry, Ltd.
Comet Technologies Japan K.K	UL Japan Inc.	MAC SYSTEMS Corp.
• TANIDA LTD.	UNIPULSE Corp.	• IWATSU ELECTRIC CO.,LTD.
Yokogawa Test & Measurement Corporation	VBOX JAPAN Inc.	SMFL Rental Company, Limited
Myway Plus Corp.	WINDHILL Technologies Co., Ltd.	• KUSUMOTO CHEMICALS,LTD.
nac Image Technology Inc.	WIZAPPLY Co., Ltd	SEKISUI CHEMICAL CO., LTD.
NFC Forum / Fime Japan	Yamamoto Scientific Tool Laboratory Co., Ltd.	Daiwa Can Company
NIKKO TECNO CO., INC.	CAE SOLUTIONS	DTS INSIGHT CORPORATION
LINNENBRINK TECHNIK WARBURG MASCHINENBAU GMBH		TEXIO TECHNOLOGY CORPORATION
	Ansys Japan K.K.	TEXIO TECHNOLOGI CONFORMION
NIPPO CORPORATION	Ansys Japan K.K. Applied Intuition Inc.	Teledyne LeCroy

YURIDENSHIBUHIN CO., LTD.	START UP
Rohde & Schwarz Japan	AIHARA Lab. Hosei University
● AVSimulation	CARBON FLY Inc.
TOKYO SEIMITSU CO., LTD.	Elephantech Inc.
Murata Manufacturing Co., Ltd.	Kognic AB
NICHICON Corp.	LEAN PATH Inc.
Nihon Synopsys G.K.	MARK ABILITY CORPORATION
Nippon TV / NTT DATA	Motion Lib,Inc.
NRA Dynamics AB	PatSnap Pte. Ltd.
Nuvoton Technology Corporation Japan	RENATA MECHATRONICS PRIVATE LIMITE
Opsoc Ltd.	SiB Co., Ltd.
PUES Corp.	TRANSMIT Co., Ltd.
Qt Group	Xenoma Inc.
SOLIZE Corporation	
TAIYO YUDEN Co., Ltd.	
Techno-Accel Networks Corp.	
TEN Corporation	
Connect Co., Ltd	
Texas Instruments Japan Ltd.	
Thundersoft Japan Co., Ltd.	
R&D/PUBLICATION/ASSOCIATION	
AIR WATER INC.	
ARCHIVETIPS Inc.	
Correns Corporation (Doss Visual Solution)	
Doss Visual Solution	
DAD Co., Ltd.	
DeepL Japan G.K.	
Gifu Prefecture	
CENTRAL FINE TOOL CO.,LTD	
TOBA KOSAN CO.,LTD	
NAKAHYO CO.,LTD	
MAMIYA KANAGATA CO.,LTD	
Hashimotoya Co., Ltd.	
HELTEC Co., Ltd.	
•	
JASCO INTERNATIONAL Co., Ltd.	
JASCO INTERNATIONAL Co., Ltd.  Kawamura International Co., Ltd.  Misaki Design	

YOLE GROUP

Tokyo Metropolitan Industrial Technology Research Institute

Skydisc, Inc. Tebiki Inc.

Uzabase, Inc.

### JSAE SPECIAL EXHIBITS



# Gathering the collective wisdom of the automotive industry for carbon neutrality and the recycling-oriented society of the future.

As we face up to "The triple planetary crisis" of climate change, biodiversity loss, and pollution, we have been reminded that the planet is a finite resource. Over the past few years, Japan and many other countries and regions around the world have begun to accelerate their efforts toward achieving carbon neutrality by 2050 and realizing a sustainable economy through changing and improving the nature of society. The keys to these efforts are creative collaboration and the circular economy.

To successfully implement these efforts, we must move on from the conventional linear process of resource exploitation, manufacturing, and disposal, to a socially oriented circular system focused on the 4Rs, which supplements the well-known concept of the 3Rs (reduce, reuse, and recycle) with a fourth "R": renewable. The realization of a socially oriented circular system is not simply a question of recycling waste. Each and every one of us must shift our value standards toward responsible manufacturing and responsible use. Progress toward decarbonization that focuses on the whole vehicle lifecycle depends on us questioning conventional wisdom, looking at things from new perspectives, and taking on the challenges involved through a process of creative collaboration with new partners.

We must ask ourselves, "What technologies will make people and the world happy?" and work to build new value chains with these partners. We hope that everyone involved in the world of cars can meet at the Automotive Engineering Exposition 2024 and showcase our collective wisdom.

### Using our knowledge, skill, and craftsmanship to realize a circular society across the whole value chain!



The Nagoya exposition showcases the creative collaboration between the automotive industry and a wide range of new partners to help realize a circular society across the whole value chain. Using "circular" as a key word, Nagoya features exhibitions about the calculation of greenhouse gas (GHG) emissions throughout the vehicle life cycle, effective methods of traceability for reducing our carbon footprint and reusing resources, and technologies adopted by venous industries to recover and sort resources from end-of-life vehicles. We hope that this will be the ideal forum for the whole industry to come together and consider how we can use our knowledge, skill, and craftsmanship to help achieve a circular society.

Exhibit collaborators and organizations

DENSO CORPORATION / Honda R&D Co.,Ltd. / JATCO Ltd / Mazda Motor Corporation / MITSUBISHI ELECTRIC CORPORATION / Shizuoka University / SOLIZE Corporation / Suzuki Motor Corporation / TBM Co., Ltd. / Tokoro Laboratory, Waseda University / Toray Industries, Inc. / TOYOTA AUTO BODY CO.,LTD. / Toyota Motor Corporation / TOYOTA TSUSHO CORPORATION / Uchiyama Manufacturing Corp. / ZEPHYR CORPORATION / Zeroboard Inc. (in alphabetical order)









# JSAE Special Presentations

Presentations were held based on the exposition theme set by the JSAE.

July

19

11:00 12:00

The Fifth Basic Circular Society Plan and latest trends in vehicle-related policies

Momoko Yuyama

Deputy Director Environment Regeneration and Resource Circulation Bureau Office for Recycling Promotion, Policy and Coordination Division, Ministry of the Environment, Government of Japan

11:00 July

12:00

Strategy for developing dismantling and separation technologies and processes to support the circular economy

Chiharu Tokoro

Professor Faculty of Science and Engineering Faculty of Engineering Waseda University The University of Tokyo

# **Autonomous Driving Presentations**

Presentations were held on the theme of autonomous and automated driving.

11:00 12:00

Mobility innovation: social implementation and the future of autonomous driving Yoshihiro Suda

Professor Advanced Mobility Research Center, Institute of Industrial Science (IIS) & Mobility Innovation Collaborative Research Organization (UTmobl) University of Tokyo

13:30 July 18 14:30 The impact of autonomous driving on cities

Takavuki Morikawa

Designated Professor Global Research Institute for Mobility in Society Nagoya University

16:00 17:00 The promotion of autonomous driving and the Aichi Digital Island Project

Etsuko Uehara

Assistant Director Next Generation Industry Section Aichi Prefectural Government

# **JSAE Chubu Branch Special Presentations**

Presentations were carried out by the Chubu Branch of the JSAE.

July 17

10:00 11:00

17:00

Development of mobility systems to facilitate the more effective use of Evs

Kinya Nakatsu

Distinguished Researcher R&D Group Hitachi,Ltd.

16:00

Digitalization of forestry-related information and CO2 absorption amounts

Kazukiyo Yamamoto

Professor Graduate School of Bioagricultural Sciences Nagoya University

# **Special Presentations about Technological Development**

Available online only: Special presentations were held in which vehicle developers described the passion and dedication they bring to carmaking.



# The 16th generation Crown

- 1. History of "Innovation" and "Challenge"
- **Development of the 16th Generation CROWN**
- 3. Interview with the Developers of CROWN "CROSSOVER"
- Development of CROWN "SPORT"
- **Development of CROWN "SEDAN"**
- "Company System" and "TNGA"



Ryotaro Shimizu **Chief Engineer** Mid-size Vehicle Company, **Toyota Motor Corporation** 

### Photographs from the presentations



JSAE Special Presentations / Chiharu Tokoro



Autonomous Driving Presentations / Yoshihiro Suda



JSAE Chubu Branch Special Presentations / Kinya Nakatsu



# JSAE Chubu Branch Research Report Sessions

Research reports were presented primarily presented by engineers belonging to the Chubu Branch of the JSAE.

### Thursday, July 18 / Venue1

	Research on Broadband Acoustic Control Technology for Interior Noise in Electric Vehicles		
	Yuta Oba Toyama Prefectural University		
Chassis • Body	Vehicle development using brake CAE		
10:15-11:25	Kenji Nagura Mitsubishi Motors Corporation		
	Study of state estimation using neural machine translation for semi-active suspension		
	Riku Wakita AISIN CORPORATION		
	Dynamic Performance Design Methodology for Automotive		
	Sho Kobayashi Toyama Prefectural University		
Non section	The Development of Seat Heaters in Cabin Heat Management Using a Numerical Thermoregulation-Model		
11:45-12:55	Kenichi Sakamoto TOYOTA BOSHOKU CORPORATION		
	Hierarchical structuring the seating comfort of electrically assisted bicycle saddles		
	Yasuko Koseki YAMAHA MOTOR CO., LTD		
	High productivity technology for FC separators using carbon resin composite materials		
Draduction on since vinc	Takamasa Kanie Toyota Auto Body Co., Ltd.		
Production engineering /Core technologies	2tone paint process by passing top coat paint once		
_	Kohei Shikanai Toyota Motor East Japan, Inc.		
13:40-14:50	A study on the improvement of fade resistance for brake pads		
	Junichi Ujita ADVICS CO.,LTD.		
	Consideration Regarding Drag Torque Reduction of Disc Brakes		
Environment Technology/	Takashi Shimizu ADVICS CO.,LTD.		
Non section	Development of High Impact Resistant Silver Metallic Resin		
/CASE • MaaS	Takaomi Endo SUZUKI MOTOR CORPORATION		
15:10-16:45	Haptics based collaborative steering framework named "Pairdriver®" for automated driving		
	Tomohiro Nakade JTEKT CORPORATION		

### Thursday, July 18 / Venue2

	Thursday, July 16 / Venu
	QoS Evaluation for ATS and CBS over Ethernet-Based In-Vehicle Network with Use Case in IEEE P802.1DG
	Akari Yoshimura Nagoya Institute of Technology
Core Technology	Quantitative Evaluation of Effect of Congestion on Accuracy in IEEE 802.1AS Time Synchronization over Ethernet-Based in-vehicle Networks
/Non section	Maika Koizumi Nagoya Institute of Technology
10:15-11:25	A Study on Controls by P4 Programming for Implementation of Automotive SDN
	Yuma Sakurai Nagoya Institute of Technology
	Reduction of mechanical vibration by biogenic shaped polymers with hard and soft parts without joints
	Tatsuya Inoue Toyama Prefectural University
Electronics	Research on fast-response gas sensing using MEMS technology and novel nano-gap electrodes
/Non section	Tomoki Kondo Niterra Co., Ltd.
11:45-12:55	Development of luminescence/millimeter wave transmission emblems
	Atsushi Kumo TOYODA GOSEI Co., Ltd.
	Study on Improvement of Mixture Homogeneity of Hydrogen Engine by Jet
	Yasuhiro Sogabe DENSO CORPORATION
Powertrain	Challenges in CAE modeling of H2 Engines
13:40-14:50	Kishal Saxena Yamaha Motor Company Limited
	Identification of abnormal noise mechanism in hydraulic system using fluid analysis
	Masaru Shimada Jatco Engineering Ltd.
	Combination of dissimilar overlay materials for engine bearing life extension
Powertrain/ /Non section	Yuma Haneda Daido Metal Co., Ltd.  Methods for supporting resident-led community place creation, and the value of the community place for residents-Action researc for high-rise housing development residents of Nagoya city-Yoko Kumai Toyota Central R&D Labs., Inc.
Safety Data analysis and efficiency using human-centric measurement and machine learning	
15:10-16:45	Shotaroh Noguchi Toyota Technical Development Corporation
13.10-10.73	Development of Simulation-Based Method for Estimation of Collision Avoidance Benefit of Automatic Emergency Braking and
	Lane Departure Warning in Traffic Collisions Nana Takeuchi TOYOTA MOTOR CORPORATION

### **EVENTS**

### Forum NAGOYA

Presentations were held describing the latest trends and future prospects affecting automotive technology, the automotive industry, and related fields.



13:00 | 17:00

### Thoughts about future mobility: Learning about electrification and decarbonization

Organized by: Electric Drive Technology Committee/Motor Technology Committee/Energy Storage System Technologies Committee /Automotive Power Electronics Technology Committee



13:00 | 17:00

### Sustainable mobility society from the perspective of urban planning

Organized by: Sustainable Mobility Society Study Committee/Mobility Society Committee

7 19<sub>FRI</sub> 13:00 | 17:00 Powertrain strategies and related technological trends

- Potential of the internal combustion engine for helping to realize carbon neutrality in 2050 - Organized by: Gasoline Engine Committee







# 2024 Student Formula Japan PR corner

Cars due to compete in the 2024 Student Formula Japan event in September were exhibited.

- Exhibiting teams -

Toyohashi University of Technology (EV) Nagoya Institute of Technology (EV)







### **EVENTS**

# Riding Experience on an Autonomous Bus

Test rides on a level 2 autonomous bus driven by the latest technology were made available.

This bus incorporated lane keeping controls featuring highly precise positioning technology and object detection functions via multiple sensing technologies.

〈Event held with support from〉 Advanced Smart Mobility Co., Ltd.











# **Exhibition of Vehicles Featuring the Latest Technologies**

This exhibition showcased a collection of vehicles equipped with the latest technologies as a learning experience for visitors.

### - Exhibited Vehicles -

ISUZU GIGA

**HINO** Fuel cell electric heavy-duty truck

HINO N-MOBI NISSAN ARIYA

TOYOTA CROWN "CROSSOVER"
TOYOTA CROWN "SPORT"
MAZDA MX-30 ROTARY-EV

MITSUBISHI MOTORS TRITON
HONDA N-VAN e:
HONDA SC e: Concept
YAMAHA ELOVE(AMSAS)
YAMAHA MOTOROiD2













# **EVENTS**

# **Exhibitors Seminar**

We held an on-site product and technology introduction seminar by exhibitors for the first time in five years.

Exhibitors provided detailed information about their products, technologies, and company/industry through 30-minute presentations.

ANALOG DEVICES K.K.	Vehicle architecture trends and on-board networks
Witzenmann Japan K.K.	Development of flexible metal hose for R744 (CO2) air conditioning systems compliant with PFAS regulations
A2Mac1 Japan Ltd.	Initiative for visualizing software development costs
S&P Global Mobility	Approach of automotive part manufacturers toward 2030 as electrification progresses
SMT Japan	High-speed design process for three-axis EV gear box using the MASTA gear specification optimization tool
SCSK Corp.	Utilization of SIGMASOFT plastic molding process simulation software for low cost and quality
SCSK Corp.	Sophisticated digital engineering utilizing CAE and AI
SCSK Corp.	Data-driven material development for the realization of a circular society: Introduction of optimization methods for recycling and compounding
SCSK Corp.	Introduction of ToffeeX CAE tool for cooling structure design support and example applications by SOLIZE Corporation
OCTEC Inc.	OCTEC High Brightness Display Product Lineup for Each Need Introduction of micro sound measurement using low-noise microphone to support the
Ono Sokki Co., Ltd.	development of even more comfortable interior sound environments
SANKO Co., Ltd.	Latest information about changes in draft UNECE R10.07 from version 06
TOYO Corp.	Secure management of data used for regulatory certification or under development: Long-term storage method for data alteration prevention and AI utilization
Nihon Synopsys G.K.	What can the optical products from Synopsys do for onboard applications?
Nippon TV / NTT DATA	Personal information protection in the utilization of drive recorder and on-board camera images: The BlurOn AI mosaic tool
Vicor	Power supply architecture for next generation EVs and SDVs constructed using the Vicor module
VisasQ Inc.	Bring the knowledge of more than 600,000 people in house! Focusing on the utilization of critical primary information for research and development
HORIBA, Ltd.	Next-generation mobile emissions measurement system using IRLAM™ measurement technologies
HORIBA, Ltd.	The role of the STARS automation system in helping to realize a multi-pathway strategy
Marubeni Information Systems Corp.	Managing Cyber Risk with Cybellum
Musashi Engineering Inc.	Dispenser-based heat countermeasure solutions and latest trends

 $\hbox{($Exhibitors listed in Japanese alphabetical order.)}\\$ 









### This exposition was covered in a wide range of media.

### Television

Nagoya Broadcasting Network	"Dodesuka plus"	7/17
Japan Broadcasting Corporation	"marutto"	7/17

### Newspaper / magazine 🗐

Nikkan Kogyo Shimbun	6/27、7/17、7/18
Nikkan Jidosha Shimbun	7/2、7/8、7/17、7/18
	7/19、7/26
THE MID-JAPAN ECONOMIST	7/17、7/18
The Chunichi Shimbun	7/18
Service Strategy	7/26

### WEB 💷

(in alphabetical order)

AFP BB News	Kuruma no News	
AUTO MESSE WEB	livedoor News	
BIGLOBE	Mapion News	
Car-nalism	MEZAMASHI media	
Car& Leisure	MOTA	
carview!	NHK web	
CREA WEB	Niconico News	
DEMPA PUBLICATIONS	nifty news	
DreamNews	Response	
excite News	THE MAINICHI NEWSPAPERS	
EXHIBITION & MICE	web	
EXHIBITION & MICE Gomu times	web THE MID-JAPAN ECONOMIST	
Gomu times	THE MID-JAPAN ECONOMIST	
Gomu times goo News	THE MID-JAPAN ECONOMIST WEB	

### There was interest from wide-ranging media sources.

AlphaBloom
Automobile Journalists Association of Japan
BASE BRAIN WORK Inc.
CARNERU Inc.
Chububroadmedia Inc.
Converting Technical Institute
Dempa Publications' Inc. Nagoya branch
Fastening Journal Co., Ltd.
FOURIN, Inc.
IID, Inc.

Aichi Television Broadcasting Co., Ltd.

-	
LEC, Inc.	
MarkLines Co., Ltd.	

Japan Metal Daily

Jiyudo

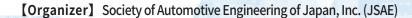
Max Media Lab Inc.		
Mediagene Inc.		
mediavague Co.,Ltd.		
Mynavi Corporation		
Nagoya Broadcasting Network Co., Ltd.		
News Digest Publishing Co., Ltd.		
NHK Nagoya Broadcasting Station		
NIKKAN JIDOSHA SHIMBUN,LTD.		
NIKKAN KOGYO SHIMBUN Hamamatsu		
NIKKAN KOGYO SHIMBUN Hiroshima		
NIKKAN KOGYO SHIMBUN Nagoya		
Nikkei Business Publications, Inc.		
Nikkei Inc		
Nikkei Inc Nagoya branch		
Office BlueMountain		

Total 45 \*Including freelancers 34(2023) (in alphabetical order)

F	Pico Knowledge Inc.
F	R photo
S	Sanei Co., Ltd.
S	Sangyo Shimbunsha Chubu branch
S	Specified Nonprofit Corporation ITS Platform 21
T	Tech-T Corporation
Т	The Asahi Shimbun Company
T	The Chemical Daily Co., Ltd
T	The Chunichi Shimbun
T	The Chunichi Shimbun Handa branch
T	THE MID-JAPAN ECONOMIST
Т	The Yomiuri Shimbun
T	The Yomiuri Shimbun Chub branch
Т	Tokoname City Office

**Toyota Motor Corporation** 

# Schedule of next year's expositions







YOKOHAMA Pacifico Yokohama

20 5 / 2 1 wed 22 Thu. 23 Fri.

NAGOYA Aichi Sky Expo

20 7/16 Wed. 17 Thu. 18 Fri.

The start of exhibitor applications is scheduled for some time in the autumn. Details will be posted on the official site at a later date.



Inquiries about the content of the expositions or this report

[Exposition Management Coordinator] Taiseisha Ltd. Shintomi Mihama Bldg., 6F, 1-15-3 Shintomi, Chuo-ku, Tokyo 104-0041 Japan

E-mail: exhib-expo@taiseisha.co.jp



### [Organizer]



Society of Automotive Engineers of Japan, Inc. (JSAE)

# [Exposition Management Coordinator]

Taiseisha Ltd.

Shintomi Mihama Bldg., 6F, 1-15-3 Shintomi, Chuo-ku, Tokyo 104-0041 Japan

**\(\sigma\)** +81-3-5542-0811

☑ exhib-expo@taiseisha.co.jp

https://aee.expo-info.jsae.or.jp/ja/