



MPT 2017 KYOTO

Program of
The JSME International Conference on
Motion and Power Transmissions

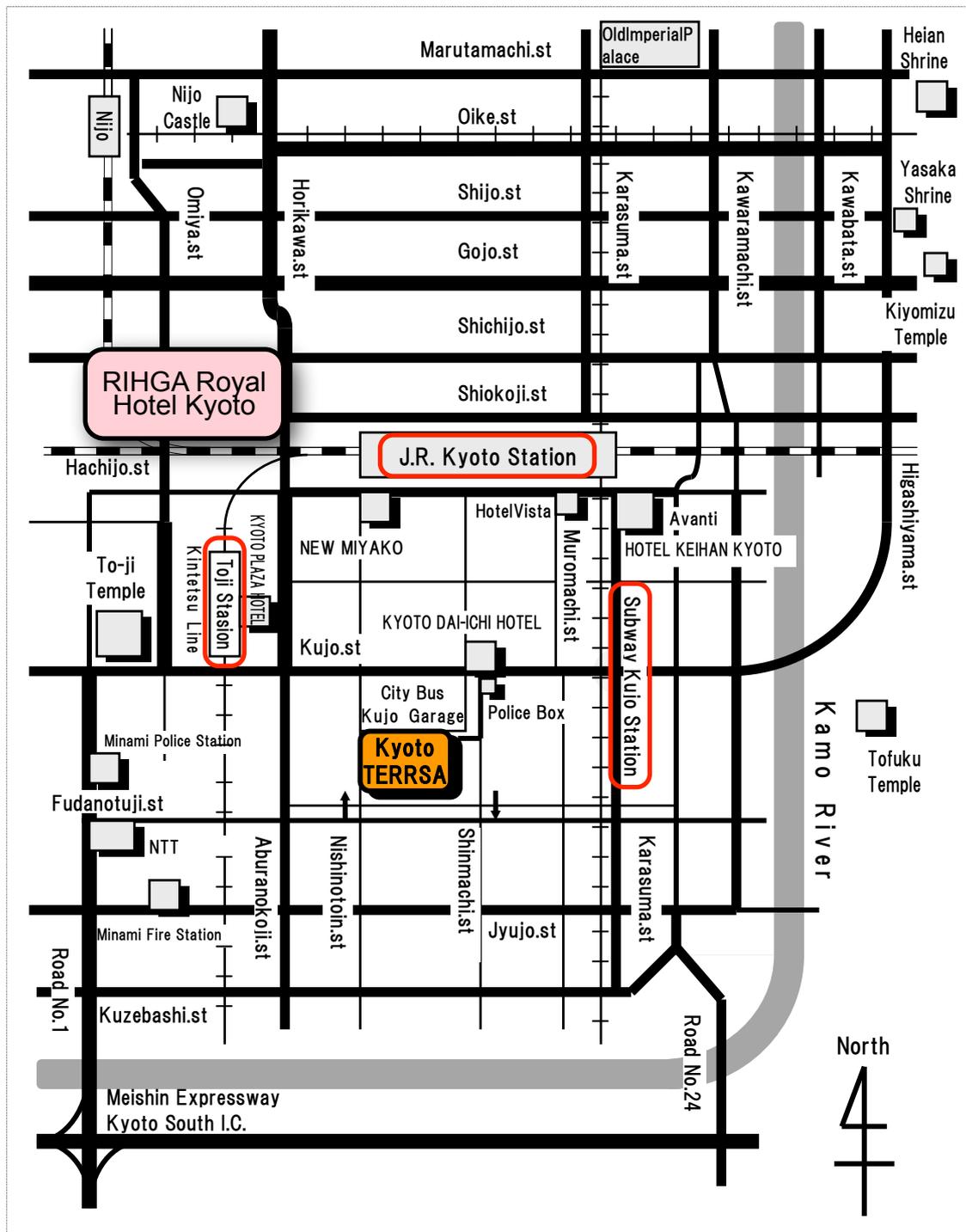
MPT 2017 - Kyoto

February 28 - March 3, 2017

at Kyoto Terrsa, JAPAN



Conference Site



Kyoto TERRSA:

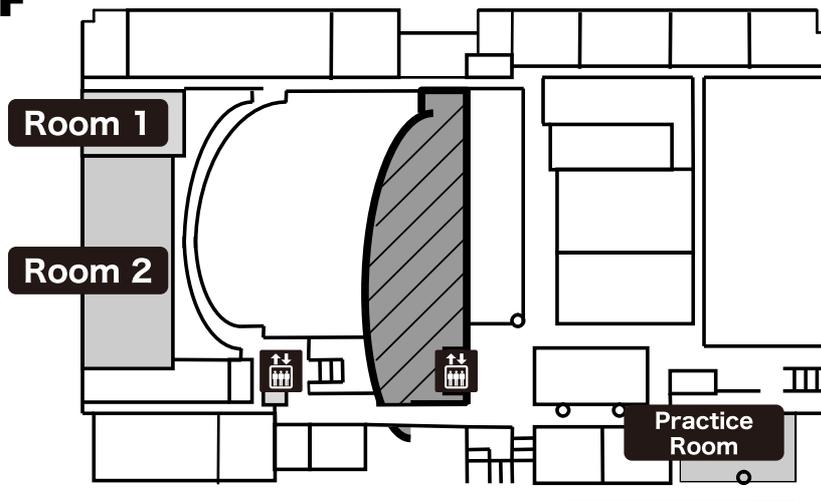
- * 15 minutes walk from Kyoto Station
- * 5 minutes walk from To-ji Station on the Kintetsu Line
- * 5 minutes walk from Kujo Subway Station

RIHGA Royal Hotel Kyoto

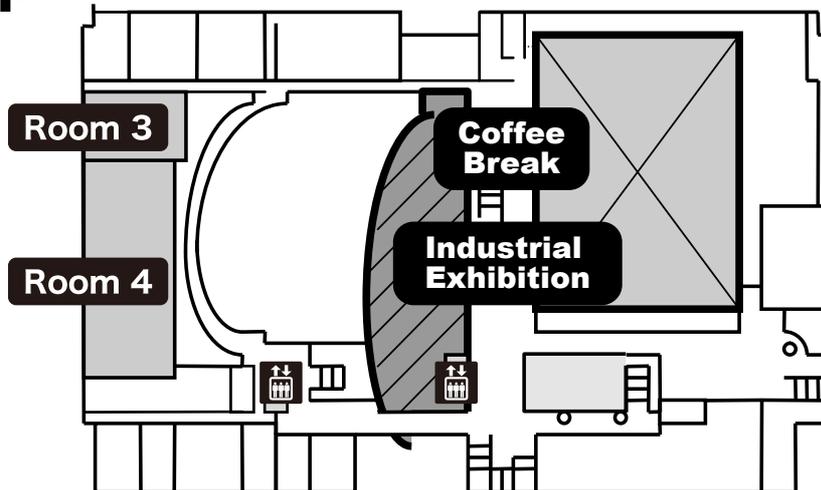
- * 20 minutes walk from Kyoto TERRSA
- * 10 minutes walk from Kyoto Station (Shuttle Bus Service Available)

Kyoto TERRSA Floor Map

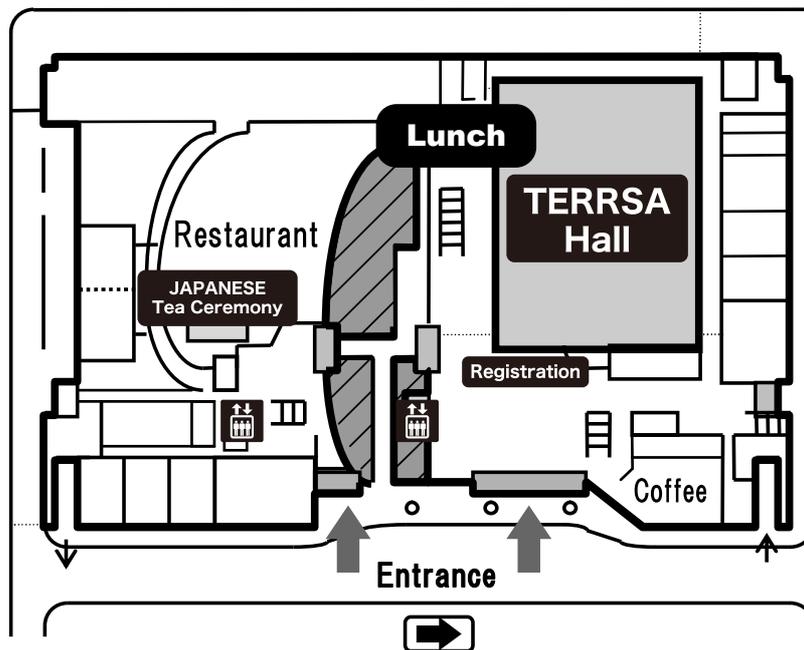
3F



2F



1F



REGISTRATION

Registration is located in the entrance hall of Kyoto TERRSA. The hours are as follows:

Tuesday, February 28	16:00 - 18:00
Wednesday, March 1	09:00 - 15:00
Thursday, March 2	09:00 - 16:00
Friday, March 3	09:00 - 11:00

All registrants can obtain conference items only at the registration desk. The items include the conference proceedings, name badge, and so on.

NAME BADGES

Please wear your name badge at all the time.

PRESENTATIONS

Each paper is allotted 25 minutes for the presentation. The 25 minutes includes the 5 minutes or so for discussions. All the speakers should bring their own PC which can connect with a LCD projector (beamer) through the 15-pin VGA connector.

AUTHORS PRACTICE ROOM

A meeting room on 3rd floor (see floor map) serves as the author practice room 9:00 - 15:00 on Wednesday, 9:00 - 16:00 on Tuesday.

LUNCHES

Lunches are scheduled each day on the 1st floor. Onigiri, Maki Sushi, Inari Sushi, Yuba Man (Japanese light meals), and sandwiches will be served.

COFFEE BREAKS

Coffee breaks are scheduled on Wednesday afternoon and on Thursday morning and afternoon on the 2nd floor.

TEA CEREMONY

Tea ceremonies are scheduled on Wednesday and Thursday 10:30 - 16:00 in the Japanese-style room on the 1st floor. You can experience a Japanese ritual of serving and drinking tea with Japanese light sweets.

WELCOME RECEPTION [Feb. 28, 18:00 - 19:30]

Welcome reception is scheduled on Tuesday evening in the TERRSA Hall. You can experience a Japanese classical music and dance "Gagaku" that has been performed at the Imperial Court in Kyoto for several centuries.

BANQUET [Mar. 2, 18:30 - 20:00]

Banquet is scheduled on Thursday at RIHGA Royal Hotel Kyoto. You can reach there in 20 minutes walk from Kyoto TERRSA. For your convenience, some guides stand at important corners. You can enjoy a Japanese traditional entertainment, "Kyo Mai", in which "Maiko" and "Geiko" perform traditional dances.

SPECIAL ISSUE OF JAMDSM

Authors are invited to submit the paper to the JAMDSM (The Journal of Advanced Mechanical Design, Systems and Manufacturing), for the Special Issue of the Motion and Power Transmissions. The submission shall be done after the revision followed by discussions at the Conference. Further detail can be seen in the MPT 2017 Website.

PLENARY LECTURES

Two plenary lectures are delivered in Terrsa Hall as follows:

[Wednesday, March 1 at 13:45]

The hybrid technology for Honda super sports car

by Yasuhide Sakamoto, Chief Engineer, Honda Motor Co., Ltd.

Honda has released the 2nd generation NSX, which follows the same "Human Centered" and "New Joy of Driving" DNA as the original NSX introduced over 26 years ago.

The New NSX power train combines a mid-mounted, newly developed, V6 twin turbo engine, direct drive motor and 9 speeds DCT with two individual front motors to achieve the vehicle's concept and performance goals. This presentation will introduce this hybrid technology for super sports car.



[Thursday, March 2 at 9:30]

Science of Tatara and Japanese Sword

- traditional Japanese methods for making steel and sword -

by Tatsuo INOUE, Professor Emeritus, Kyoto University

Tatara system of preparing traditional Japanese steel, Tamahagage, from iron sand is introduced from the viewpoint of science and technology. Some artistic drawings, Emaki, painted over 100 years ago are presented to know the classical Tatara system as well as acting system in Shimane prefecture. The characteristics of the steel is excellent from the analysis of modern metallurgy. Producing cost is, however, so high, almost hundred times expensive compared with modern steel, which is the reason why they are propounded for sword making.



In the second part, the method of manufacturing the Japanese sword is summarized. As an example of the application of the developed theory of framework of metallo-thermo-mechanics, quenching processes, a Japanese sword is focused, and the change in temperature, metallic structure and stress/deformation are simulated. The results reveal to represent such real situations, especially modes of sori and hamon.

The discussion from the viewpoints of metallurgy and mechanics are carried out in each section of preparing traditional steel and manufacturing the sword. In conclusion, it is noted that the technology surviving for over thousand years is really consistent with the modern science and technology.

TECHNICAL TOURS [Feb. 28, 9:00am]

The organizing committee proposes two courses of technical tours to provide opportunities to touch Japanese state-of-art technologies. In one course, participants visit Research Institute for Applied Sciences and MHI Machine Tool, and in the other course, participants visit MHI Machine Tool and DMG-MORI. In laboratories at Research Institute for Applied Sciences, Prof. Kubo is exploring new technologies. MHI Machine Tool and DMG-MORI are leading machine tool companies in JAPAN. **All Participants are requested to come to the entrance hall at Kyoto Terrsa on Feb. 28 no later than 9:00 am.**

INDUSTRIAL EXHIBITION

Technical exhibits are displayed during the conference on 2nd floor. You can obtain information on the state-of-art technologies provided by the following companies:

[Advanced CAE Solutions]

Contents: TRANSMISSION3D is the most comprehensive 3D finite element based gear system contact analysis package, capable of modeling complex transmission assembly with multiple gear type, bearings, planetaries, flexible shafts, carriers, and housing.



[Amtec Inc.]

Contents: some models of nontraditional gears and catalog.



[EUKLID JAPAN Co., Ltd.]

EUKLID Gear CAM. Gear module for replacements, prototypes, small series and special designs on universal milling machines. Easy intuitive handling. Maximum flexibility and optimized milling paths.



[Gleason Asia Co., Ltd.]

Gleason Corporation is a leader in gear technology since more than 150 years, providing Total Gear Solutions to a wide variety of gear manufacturing industries on a global scale. Gleason produces Bevel and Cylindrical Gear Manufacturing Machines, Metrology Systems, Automation Solutions, Workholding Equipment, Cutting Tools, Plastic Gears as well as wide array of supporting services.



[Gleason-Saikuni Co., Ltd.]

Gleason-Saikuni specializes in tool grinding and rack manufacturing machines. Gleason-Saikuni Tool Grinding Machines include solutions for bevel gear cutter grinding and sharpening of hobs, shaper cutters and power skiving cutters for customers' high-quality gear production. Gleason-Saikuni Rack Manufacturing Solutions include equipment for milling and grinding, as well as hard rack skiving which has been especially developed for the requirements of automotive steering rack production.



[Kashifuji Works, LTD.]

In 1913, Kashifuji was established here in Kyoto and made Japan's 1st hobbing machine in 1918 for machining gears in house. We have more than 80 year's experience in manufacturing accurate hobbing machine since 1932, and now we produce various kinds of machines related to gear manufacturing. To be displayed; Catalogs, signboards and sample gears.



[Kawasaki Heavy Industries, Ltd.]

Kawasaki Heavy Industries, Ltd. is a leading-edge company which designs and develops state-of-the-art aero engine gearboxes, helicopter transmissions and traction-drive electrical power generator(T-IDG®).



[KISSsoft. Co.]

Gear Box Design Software; sizing, optimization, rating and CAD integration of power transmission.



[L AND M Corporation]

L AND M Corporation is a distributor of the precision gear inspection machine. Its measuring range is 280-5500mm dia. on the rotary table and more than 5000mm dia. to un-limited on the floor. For a big gear, we can measure it at vertical position with unique technology.



[Liebherr Japan Co., Ltd.]

Liebherr Gear Grinder LGG series are ideally suited to generating grinding of tooth flank Modifications such as following unique features. TF-Twist Free, DFT-Deviation Free Topological, NEO-Noise Excitation Optimized modification, GER-Generated End Relief, SSG-Silent Shift Grinding, DIP-Dresser Independent Profile modifications.



[NewtonWorks Co.]

NewtonWorks promotes total CAE services. We introduce "NewtonSuite-RSCalc/OilFilm" for lubrication software that solve film thickness, shear force, oil leakage, stiffness and damping of bearing etc.



[OSAKA SEIMITSU KIKAI Co., Ltd]

Our CNC gear measuring instruments enable quick, fully automated measurement of tooth profile, helix, pitch and runout. With the high accuracy and outstanding durability, we have been earning the trust of customers around the world. At this exhibition, we will exhibit a miniature of gear measuring machine, as well as catalogues and panels.



[Pulstec Industrial Co., Ltd.]

Portable X-ray Residual Stress Analyzer "μ-X360s" is the world's lightest and smallest residual stress analyzer. Quick and easy setup. Measurement time is approximately 60 seconds for ferritic samples.



[SHINKO ENGINEERING Co., LTD.]

Contents: Movable Models of Testing Machines.

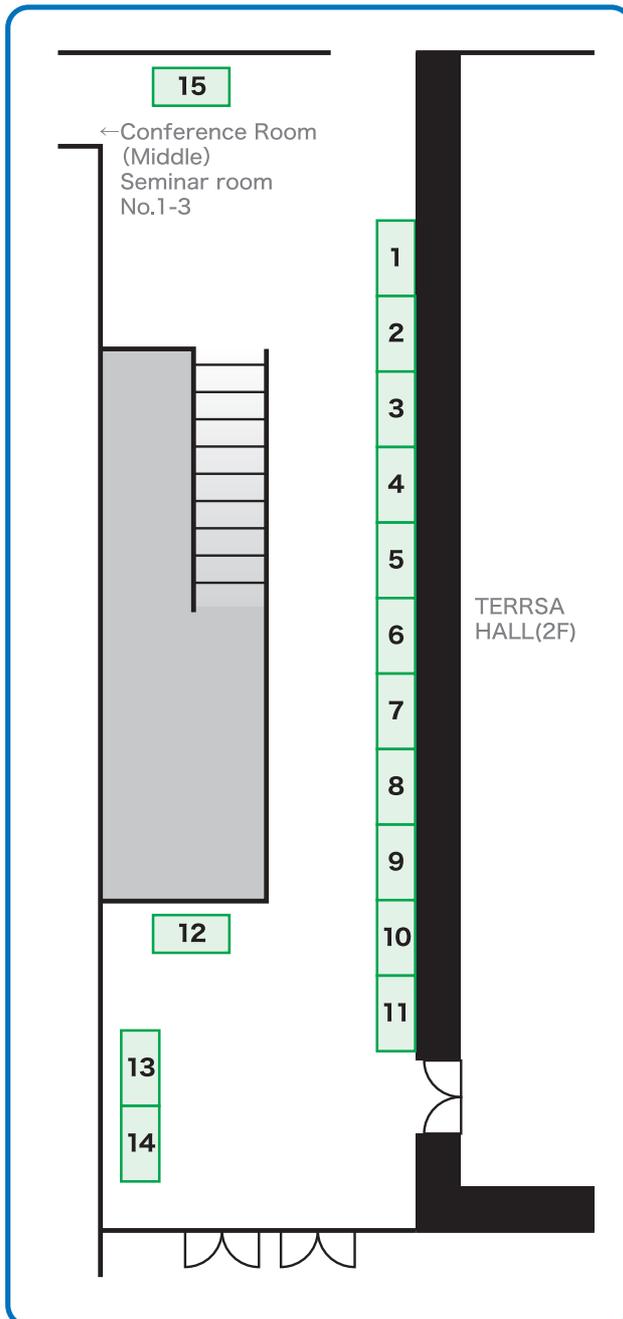
SHINKO ENGINEERING

[Sumitomo Heavy Industries, Ltd.]

Contents: CYCLO® Drives Speed Reducer (for general purpose/ precision control), Hyponic GearMotor® (cutaway model).

Sumitomo Drive Technologies

 Sumitomo Heavy Industries, Ltd.



1. KISSOFT CO.
2. PULSTEC
3. Sumitomo Heavy Industries, Ltd.
4. LIEBHERR
5. EUKLD•JAPAN Co.,Ltd.
6. AMTEC INC.
7. OSAKA SEIMITSU KIKAI Co.,LTD
8. KASHIFUJI WORKS, LTD.
9. Kawasaki Heavy Industries, Ltd.
10. L AND M CORPORATION
11. Shinko Engineering Co., Ltd.
12. Gleason Saikuni Co.,Ltd.
13. Gleason Asia Co.,Ltd.
14. Advanced CAE Solutions Inc
15. NewtonWorks Corporation

Program at a Glance

The JSME International Conference on Motion and Power Transmissions MPT 2017 - Kyoto

Tuesday, February 28	
16:00 - 18:00	Registration
18:00 - 19:30	
Welcome Reception in Terrsa Hall	
Wednesday, March 1	
09:00 - 15:00	Registration
TIME	
09:00 - 12:00	ROOM 1 Manufacturing of gears (I)
12:00 - 13:30	ROOM 2 Inspection of gears (I)
13:30 - 13:45	ROOM 3 Mechanism design (I)
13:45 - 14:45	ROOM 4 Belt, chain drives, and traction drives (I)
14:45 - 15:05	LUNCH 1
OPENING in Terrsa Hall	
PLENARY LECTURE 1 in Terrsa Hall	
TIME	
15:05 - 18:00	ROOM 1 Manufacturing of gears (II)
	ROOM 2 Design and synthesis of gears (I)
	ROOM 3 Dynamics and noise problems of gears (I)
	ROOM 4 Motion and power transmission systems (I)
Thursday, March 2	
09:00 - 16:00	Registration
09:30 - 10:30	
10:30 - 10:50	COFFEE BREAK 2
TIME	
10:50 - 12:30	ROOM 1 Lubrication, power loss, and efficiency (I)
	ROOM 2 Gear strength and durability (I)
	ROOM 3 Plastic gear technology (I)
	ROOM 4 Motion and power transmission systems (II)
12:30 - 13:35	LUNCH 2
TIME	
13:35 - 15:40	ROOM 1 Design and synthesis of gears (II)
	ROOM 2 Gear strength and durability (II)
	ROOM 3 Dynamics and noise problems of gears (II)
	ROOM 4 Motion and power transmission systems (II)
15:40 - 16:00	COFFEE BREAK 3
TIME	
16:00 - 17:40	ROOM 1 Lubrication, power loss, and efficiency (II)
	ROOM 2 Gear materials and surface modification (I)
	ROOM 3 Plastic gear technology (II)
	ROOM 4 Gear unit design and applications (I)
18:30 - 20:00	
Banquet in the Hall at RIHGA Royal Hotel Kyoto	
Friday, March 3	
09:00 - 11:00	Registration
TIME	
09:30 - 12:00	ROOM 1 Lubrication, power loss, and efficiency (III)
	ROOM 2 Gear strength and durability (III)
	ROOM 3 Dynamics and noise problems of gears (III)
	ROOM 4 Manufacturing of gears (III)
12:00 - 13:35	LUNCH 3 & CLOSING

The JSME International Conference on Motion and Power Transmissions, MPT 2017 - Kyoto

Tuesday, February 28

Registration

Welcome Reception in Terrsa Hall

Wednesday, March 1

Registration

TIME	ROOM 1	ROOM 2	ROOM 3	ROOM 4
09:00 - 15:00	Registration			
09:30 - 09:55	<p>Manufacturing of gears (I) Chair: Claude GOSSELIN, Hiroyuki SONOBE 02-01 RESEARCH ON THE MANUFACTURING AND EVALUATION METHOD FOR A CURVE-FACE GEAR</p> <p>Zhi Qin CAI, Chao LIN, Yu FAN, Xi Jun CAO</p>	<p>Inspection of gears (I) Chair: Masaharu KOMORI, Myungsoo KIM 03-01 MONITORING OF HYPOID GEAR MESHING BASED ON A THERMAL NETWORK MODEL WITH HIGH-SPEED VIDEO THERMOGRAPHY</p> <p>Eichi AOYAMA</p>	<p>Mechanism design (I) Chair: Yukihiro TAKEDA, Xiangyu WU</p>	<p>Belt, chain drives, and traction drives (I) Chair: Tomoko HIRAYAMA, Ahmed KAHRAMAN 11-01 INFLUENCE OF DEFORMATION OF PINS ON POWER LOSS OF CONTINUOUSLY VARIABLE TRANSMISSIONS DRIVEN THROUGH METAL CHAIN BELT</p> <p>Hiroki ICHINOSE, Kazuya OKUBO, Toru FUJII, Kyohpei WATANABE, Yuji OSHI, Atsushi IKEDA</p>
09:55 - 10:20	<p>02-02 MODERN SOLUTIONS FOR CHAMFERING OF GEARS</p> <p>Oliver WINKEL</p>	<p>03-02 EFFECTS OF PINION GEAR PRESSURE ANGLE AND HELIX ANGLE ERRORS ON TRANSMISSION ERROR OF A FACE GEAR MODIFIED WITH A TRANSMISSION ERROR CONTROLLED CURVE</p> <p>Tetsuo INOUE, Syuhei KUROKAWA</p>	<p>12-01 DEVELOPMENT OF SMALL TYPE OF A STANDING UP ASSISTANCE DEVICE FOR THE ELDERLY</p> <p>Eiichiro TANAKA, Keiichi MURAMATSU, Keiichi WATANUKI</p>	<p>11-02 SLIP BEHAVIOR IN PULLEY GROOVE UP TO SLIDING SLIP AT STEADY STATE OF TORQUE AND POWER TRANSMITTING EFFICIENCY FOR METAL V-BELT CVT</p> <p>Ryohhei OKUDA, Kazuya OKUBO, Toru FUJII, Kyohpei SAKAGAMI, Toru YAGASAKI</p>
10:20 - 10:45	<p>02-03 HARD FINISHING OF ASYMMETRIC TOOTH PROFILES - SOLUTIONS FOR SERIES PRODUCTION</p> <p>Andreas MEHR, Kiyoshi IGUCHI</p>	<p>03-03 TESTING METHOD OF GEAR MEASURING INSTRUMENTS</p> <p>Masaharu KOMORI, Yohan KONDO, Toshiyuki TAKATSUJI</p>	<p>12-02 DEVELOPMENT OF A WALKING ASSISTANCE APPARATUS INCLUDING A TORQUE LIMITER IN A GEAR</p> <p>Eiichiro TANAKA, Hayato NAGAYOSHI, Hirotohiro KONDO, Keiichi MURAMATSU, Keiichi WATANUKI</p>	<p>11-03 EFFICIENCY OF A TWO PULLEYS POLY-V BELT TRANSMISSION, INFLUENCE OF BELT CHARACTERISTICS: FRICTION COEFFICIENT, LONGITUDINAL STIFFNESS</p> <p>Lionel MANIN, Cédric LORENZON, Housseem SAAD</p>
10:45 - 11:10	<p>02-04 COMPLETE MACHINING OF GEARS ON 5X MULTITASKING MACHINES</p> <p>Thomas LOCHBIHLER</p>	<p>03-04 WHOLE OUTLINE SCANNING MEASUREMENT FOR HELICAL GEARS INCLUDING ROOT AND BOTTOM PROFILES</p> <p>Syuhei KUROKAWA, Takashi TERAOKA, Yuki UTSUNOMIYA, Tetsuya TAGUCHI, Terutake HAYASHI, Yoji MATSUKAWA</p>	<p>12-03 KINEMATIC DESIGN OF A FOOTPLATE DRIVE MECHANISM USING A 3-DOF PARALLEL MECHANISM FOR WALKING REHABILITATION DEVICE</p> <p>Chu ZHANG, Bluest LAN, Daisuke MATSUJURA, Céline MOUGENOT, Yusuke SUGAHARA, Yukihiro TAKEDA</p>	<p>11-04 DEVELOPMENT OF A DRY TIMING BELT SYSTEM FOR A 3-CYLINDER ENGINE</p> <p>Tomas JOHANNESSEN</p>
11:10 - 11:35	<p>02-05 5AXIS CNC MANUFACTURING OF EDM BEVEL GEAR ELECTRODES</p> <p>Claude GOSSELIN, Jianyu WANG</p>	<p>03-05 MEASUREMENT OF TOOTH FLANKS BY GEAR MEASURING INSTRUMENTS AND EVALUATION OF ITS SURFACE TEXTURE (EFFECT OF DIFFERENT PROFILES ON MEASUREMENT RESULTS)</p> <p>Myungsoo KIM, Tomohiro TATSUMI, Daisuke IBA, Junichi HONGU, Morimasa NAKAMURA, Ichiro MORIWAKE</p>	<p>12-04 THE FRICTION CHARACTERISTICS TEST OF FRICTION ELEMENT WITH MULTI-CONE RING SURFACE CONFIGURATION</p> <p>Yanzhong WANG, Xiangyu WU</p>	<p>11-05 SIMULATION OF ROLLING CONTACT FATIGUE STRENGTH FOR TRACTION DRIVE ELEMENTS (OBTAINING OF S-N CURVE BY FATIGUE TEST)</p> <p>Yukihito NARITA, Ryosuke SATO, Tatsuya SASAGAWA, Masashi YAMANAKA, Toshiharu KAZAMA, Yasuhiro OSAFUNE, Tomoya MASUYAMA</p>
11:35 - 12:00	<p>02-06 GEAR GEOMETRY AS FUNCTION OF PRODUCTION METHOD - PROPOSAL OF INVO-PLANAR BEVEL GEAR FOR GOOD PRODUCTIVITY -</p> <p>Aizohi KUBO, Akio UEDA</p>	<p>03-06 EXPLORES FOR THE ORIGIN OF GEARS IN TRADITIONAL JAPANESE CLOCK (WADOKAI)</p> <p>Akio UEDA, Aizo KUBO, Hiroaki MATSUOKA, Jun WATANABE, Miyako MIYAZAKI</p>	<p>12-05 THREE-DOF TRANSLATIONAL PARALLEL MECHANISM PARTLY COMPOSED OF WIRES</p> <p>Hiroaki KOZUKA, Daisaku UCHIJIMA, Takuroku OKAMOTO, Yuusuke KITAYAMA, Hiroshi TACHIYA</p>	<p>11-06 STUDY ON HIGH-SPEED TRACTION DRIVE CVT FOR AIRCRAFT POWER GENERATION -GYROSCOPIC EFFECT OF THE THRUST BALL BEARING ON THE CVT-</p> <p>Kippei MATSUDA, Tatsuhiko GOI, Kenichiro TANAKA, Hideyuki IMAI, Hirohisa TANAKA, Yasuakazu SATO</p>
12:00 - 13:30	LUNCH 1			
13:30 - 13:45	OPENING in Terrsa Hall			
13:45 - 14:45	PLENARY LECTURE 1 in Terrsa Hall THE HYBRID TECHNOLOGY FOR HONDA SUPER SPORTS CAR			
14:45 - 15:05	by Mr. Yasuhide Sakamoto, Chief Engineer at Honda Motor Co., Ltd.			
	COFFEE BREAK 1			

TIME	ROOM 1	ROOM 2	ROOM 3	ROOM 4
15:05 - 15:30	Manufacturing of gears (I) Chair: Zhi Qin CAI, Syynehi KUROKAWA 01-02 MODEL-BASED PROCESS ANALYSIS FOR GEAR CUTTING WITH INDEXABLE INSERTS	Design and synthesis of gears (I) Chair: Alexander KAPELEVICH, Tororu NISHIDA 01-01 DESIGN OF HIGH-REDUCTION HYPOID GEARS MESHING IN PLANE OF ACTION	Dynamics and noise problems of gears (I) Chair: Datong QIN, Shigeki MATSUMURA 04-01 STUDY ON THE MODE CHARACTERISTICS AND PARAMETER SENSITIVITY FOR A TWO-STAGE SPUR PLANETARY GEAR SYSTEM BASED ON SHAFTING ELEMENT METHOD	Motion and power transmission systems (I) Chair: Jean-Pierre DE VALUJANY, Geng LIU 10-00 HOW MANY TRANSMISSIONS FOR THE NEXT HYBRIDS?
15:30 - 15:55	Fritz KLOCKE, Christoph LÖPENHAUS, Felix KÜHN, Markus KRÖMER 02-08 DEVELOPMENT OF VIBRATION HOBBIING MACHINE	Atsushi SUZUKI, Ichiro TARUTANI, Takayuki AOYAMA 01-02 PLASTIC DEFORMATION MECHANISM OF HYPOID GEARS	Aiqiang ZHANG, Jing WEI, Datong QIN 04-02 INVESTIGATION ON TRANSIENT DYNAMIC CHARACTERISTICS OF A SINGLE-STAGE PLANETARY GEAR SYSTEM FOR WIND TURBINES	Bernd-Robert Höhn 10-01 CHALLENGES AND OPPORTUNITIES OF FULL-SIZE NACELLE TESTING OF WIND TURBINE GENERATORS
15:55 - 16:20	Shu KARUBE 02-09 ANALYSIS OF THE EFFECT ON GEAR ACCURACY OF WORKPIECE/TOOL POSITIONING ACCURACY IN THE HOBBIING PROCESS	Takayuki AOYAMA, Tomohiro SUZUKI, Hiroki INOKURA, Yoshikatsu SHIBATA 01-03 DESIGN METHOD FOR HYPOID GEARS CONSIDERING PLASTIC DEFORMATION UNDER HIGH LOAD	Kuo Jao HUANG, Po Ching LU 04-03 INVESTIGATION OF A NOVEL THREE-AXIS DRIVE DESIGN FOR A PLANETARY GEAR TRAIN THAT USES UNIVERSAL JOINTS	Sebastian REISCH, Georg JACOBS, Dennis BOSSE, Daniel MATZKE 10-02 DESIGN AND DYNAMIC SIMULATION FOR A NEW HELICOPTER CONTINUOUSLY VARIABLE TRANSMISSION
16:20 - 16:45	Kouji MATSUO, Yoshihito SUZUKI, Kenichi FUJIKI 02-10 AN EXPERIMENTAL STUDY ON CUTTING PERFORMANCE OF HSS HOB WITH TIN COATING FILM IN DRY HOBBIING	Hiroki INOKURA, Yoshikatsu SHIBATA, Takayuki AOYAMA, Takeshi MATSUMOTO 01-04 A REGRESSION METHOD FOR THE COMPUTATION OF LOCAL SPIRAL BEVEL AND HYPOID DEFLECTIONS FROM FINITE ELEMENT MODELS	Dai NISHIDA, Masao NAKAGAWA, Deepak SAH, Toshiki HIROGAKI, Eichi AOYAMA 04-04 EXPERIMENTAL RESEARCH OF HYPOID GEAR NOISE AND VIBRATION BY GEARBOX TEST	Ru Yuan, Xin Cai 10-03 POWER FLOW AND EFFICIENCY ANALYSES OF DUAL PLANETARY COUPLING MECHANISM BASED ON BOND GRAPH THEORY – AUTHORS' INSTRUCTIONS –
16:45 - 17:10	Akio KUBO, Hua QIU, Hironori MATSUOKA 02-11 METHOD FOR FINISHING THE TOOTH FLANK OF SURFACE-HARDENED SMALL GEARS USING A GEAR-SHAPED TOOL COMPOSED OF ALUMINA-FIBER-REINFORCED PLASTIC	Sandeep VIJAYAKAR, Karthikeyan MARAMBEDU 01-05 GEOMETRY GENERATION PRINCIPLE AND MESHING CHARACTERISTICS OF A NEW GEAR DRIVE	Takeshi WATANABE, Keiichiro TOBISAWA, Kohel SAIKI 04-05 TIME-VARYING TORQUE LOAD DEPENDENT HYPOID GEAR MESH AND DYNAMIC ANALYSIS	Yi Han, Jianjun Hu, Zhihua Hu, Yong Zheng 10-04 DESIGN AND ANALYSIS OF A NOVEL SERIES-PARALLEL HYBRID TRANSMISSION
17:10 - 17:35	Yoshihiro FUJISAWA, Masaharu KOMORI 02-12 TOOTH CONTACT ANALYSIS AND MANUFACTURING OF DUAL LEAD WORM GEARS IN ISO TYPE I	Zhenhua Han, Wankai Shi, Lang Xu, Chang Liu 01-06 A SIMPLIFIED METHOD FOR THE KINEMATIC ERROR ANALYSIS OF CYLOIDAL GEAR DRIVES	Zhenghong SHI, Taik C. LIM 04-06 ANALYSIS OF THE DYNAMIC BEHAVIOUR OF MULTI-MESH SPUR AND HELICAL GEARS - APPLICATION TO THE DEFINITION OF OPTIMUM PROFILE RELIEFS IN AERONAUTICAL TRANSMISSIONS	Huu-Tich NGO, Kuen-Bao SHEU, Yu-Chi CHEN, Yen-Chun HSUEH, Hong-Sen YAN 10-05 STUDY ON DYNAMIC CHARACTERISTICS OF ELECTROMECHANICAL COUPLING IN MODE SWITCHING PROCESS OF MULTI-POWER TRANSMISSION SYSTEM CONSIDERING INTERNAL AND EXTERNAL EXCITATION
17:35 - 18:00	Shigenori HAMADA, Kazumasa KAWASAKI, Isamu TSUJII 01-07 PROFILE MODIFICATION AND SENSITIVITY TO SIZE DEVIATIONS	Keng-Hsun LIN, Chang-Chia HSIEH, Jyh-Jone LEE 01-07 PROFILE MODIFICATION AND SENSITIVITY TO SIZE DEVIATIONS	Hassen FAGACK, Philippe VELEX, Jérôme BRUYERE, Samuel BECOULIERELLE 04-07 SOME ANALYTICAL GUIDELINES TO DEFINE OPTIMUM PROFILE RELIEF IN NARROW-FACED SPUR AND HELICAL GEARS	Yanzhao Su, Minghui Hu, Ling Su, Datong Qin, Yonggang Liu 10-06 DESIGN AND PARAMETER MATCHING OF A NEW ELECTRO-HYDRAULIC HYBRID TRANSMISSION SYSTEM
		Vladislav DOROFEEV, Viktor GOLOVANOV, Suren GUKASIAN, Dmitry DOROFEEV, Liama SHCHERBININA, Victoria ANANIEVA	Philippe VELEX, Jérôme BRUYÈRE	Chang LUO, Yang YANG, Pengxi LU

Thursday, March 2

Registration

PLENARY LECTURE 2 in Terrsa Hall SCIENCE OF TATARA AND JAPANESE SWORD – TRADITIONAL JAPANESE METHODS FOR STEEL AND SWORD MAKING – by Prof. Tatsuo INOUE, Professor Emeritus at Kyoto University

TIME	ROOM 1	ROOM 2	ROOM 3	ROOM 4
09:00 - 16:00				
09:30 - 10:30				
10:30 - 10:50				
10:50 - 11:15	Lubrication, power loss, and efficiency (I) Chair: Masahiro FUJII, Mark LELKES 07-01 INFLUENCE OF LUBRICANT TEMPERATURE, TORQUE AND ROTATIONAL SPEED ON THE LOSS MECHANISMS IN A TWO-SPEED AUTOMATIC TRANSMISSION	Gear strength and durability (I) Chair: Tobias SCHULZE, Tomoya MASUYAMA 05-01 SURFACE DURABILITY AND TOOTH FLANK PROPERTIES OF VACUUM-CARBONITRIDED GEARS FINISHED BY GRINDING, SHOT-PEENING AND POLISHING	Plastic gear technology (I) Chair: Bingkui CHEN, Takao KOIDE 09-01 POTENTIAL OF OIL-LUBRICATED CYLINDRICAL PLASTIC GEARS	Motion and power transmission systems (II) Chair: Minghui HU, Sebastian REISCH 10-07 NUMERICAL MODEL AND PARAMETRICAL STUDY OF SPLINE COUPLING
11:15 - 11:40	Yonggang LIU, Bing WANG, Datong QIN, Zhenzhen LEI, Wenliang FU 07-02 A STUDY ON MESH FRICTION LOSS REDUCTION OF CYLINDRICAL GEARS UNDER MIXED LUBRICATION CONDITION	Hiroshi MORIKAWA, Masahiko NAKAE, Toshiro FUKUSHIMA 05-02 DEVELOPMENT OF TRANSMISSION GEARS WITH HIGHER TOOTH ROOT/TOOTH SURFACE FATIGUE STRENGTH OBTAINED WITH TWO-STAGE SHOT PEENING	Christian HASL, Christopher ILLENBERGER, Peter OSTER, Thomas TOBI, Karsten STAHL 09-02 LIFETIME AND MESHING TEETH TEMPERATURE OF A CROSSED HELICAL GEAR CONSISTING OF A PLASTIC GEAR AND A METAL GEAR: CASE OF NO LUBRICATION	Jean-Pierre DE VALUJANY, Michèle GUINGAND, Boris SCHMITT 10-08 AN EXPERIMENTAL INVESTIGATION OF THE LOAD DISTRIBUTION OF SPLINED JOINTS UNDER GEAR LOADING CONDITIONS
	Koji KUMAGAI, Kunihiko MORIKAWA, Kazuhiro TAKAKI	Ryohei SAITO, Yoshitomo SUZUKI, Atsushi IKEDA	Mikio TAKAHASHI, Takayoshi ITAGAKI, Hideo TAKAHASHI, Takao KOIDE, Yuki KOBARI	Michael BENATAR, David TALBOT, Ahmet KAHRAMAN

COFFEE BREAK 2

11:40 - 12:05	07-03	EXPERIMENTAL INVESTIGATIONS ON CHURNING LOSSES GENERATED IN A PLANETARY GEAR SET	Adrien NEUROUJITH, Christophe CHANGENET, Charlotte FOSSIER, Fabrice VILLE	05-03	INFLUENCE OF DENSITY ON FATIGUE STRENGTH OF SINTERED AND POWDER-FORGED GEARS	09-03	TOOTH SURFACE TEMPERATURE AND POWER TRANSMISSION EFFICIENCY OF PLASTIC SINE-CURVE GEAR	10-09	DEVELOPMENT OF HIGH-SPEED REDUCER MODIFIED THE ROLLING BEARING
12:05 - 12:30	07-04	MODELLING OF STEADY-STATE MECHANICAL POWER LOSSES IN PLANETARY GEAR TRAINS OF AUTOMATIC TRANSMISSIONS	Venkatakrishna JANAKIRAMAN, Ahmet KAHRAMAN, David TALBOT	09-04	FRETTING LINES ON GEARS – SYSTEMATIC INVESTIGATIONS ON THE FORMATION CONDITIONS AND MECHANISMS	09-04	A STUDY ON NOISE REDUCTION OF POM HELICAL GEARS BASED ON SOUND QUALITY EVALUATION - NOISE PROPERTIES OF POM HELICAL GEAR PAIR OPERATING UNDER NO-LUBRICATION CONDITION -	10-10	OPTIMUM DESIGNING OF SMALL-SIZED TOROIDAL CVT BASED ON FACTOR ANALYSIS FOR POWER LOSS
12:30 - 13:35									Makoto HUIRA, Tomoko HIRAYAMA, Takashi MATSUOKA, Norio DEGUCHI, Kikuo OKAMURA

LUNCH 2

TIME	ROOM 1	ROOM 2	ROOM 3	ROOM 4
13:35 - 14:00	01-07	05-05	04-08	10-11
14:00 - 14:25	01-08	05-06	04-09	10-12
14:25 - 14:50	01-09	05-07	04-10	10-13
14:50 - 15:15	01-10	05-08	04-11	10-14
15:15 - 15:40	01-11	05-09	04-12	10-15
15:40 - 16:00				

COFFEE BREAK 3

TIME	ROOM 1	ROOM 2	ROOM 3	ROOM 4
16:00 - 16:25	07-05	06-01	09-05	08-01
16:25 - 16:50	07-06	06-02	09-06	08-02
16:50 - 17:15	07-07	06-03	09-07	08-03

16:00 - 16:25	07-05	06-01	09-05	08-01	Christophe CHANGENET, Yuya OMIYA Friction coefficient of small-sized gear lubricated with grease	09-05	Different teeth profile shapes of polymer gears and comparison of their performance	08-01	From the single component safety factor to the system reliability rating – the reliability concept: a new way to assess gears and gear drives –
16:25 - 16:50	07-06	06-02	09-06	08-02	Development of a microgear endurance test system and a basic study of lubricating conditions for micro spur gear	09-06	Accelerated lifetime testing of reinforced polymer gears	08-02	Development of design procedure for planetary gear noise improvement
16:50 - 17:15	07-07	06-03	09-07	08-03	The measurement of surface temperatures on gear teeth during high surface pressure with dissimilar hardened gears	09-07	Expectation regarding higher load capacity of long-fiber-reinforced plastic gear pairs	08-03	Design and analysis of a three-stage cycloidal planetary gear drive for high reduction ratio

17:15 - 17:40	07-08	GEAR UNIT INTELLIGENT LUBE SYSTEM BENEFITS OVER WET SUMP SPLASH LUBRICATION	06-04	TRIBOLOGICAL CHARACTERISTICS OF PLASMA CARBURIZED TITANIUM ALLOY GEAR UNDER UNLUBRICATED CONDITION	09-08	FATIGUE LIFE OF INJECTION-MOLDED-PLASTIC-HELICAL-GEAR ADDED WITH CARBON POWDER MADE FROM RICE HULL	08-04	ANALYTICAL APPROACH FOR LOAD SHARING ANALYSIS OF A DIFFERENTIAL TYPE THREE-STAGE PLANETARY GEAR DRIVE
		Márk LELKES, Csaba KOKREHEL		Kosaku KITA, Yasuyoshi TOZAKI, Ken KAWAHIGASHI, Ryosuke NOGUCHI		Yen-Chu CHEN, Takayoshi ITAGAKI, Hideo TAKAHASHI, Mikio TAKAHASHI, Hiroshi IIZUKA		Shyi-Jeng TSAI, Qi-You ZHUANG
18:30 - 20:00	Banquet in the Hall at RIHGA Royal Hotel Kyoto							

Friday, March 3								
Registration								
TIME	ROOM 1	ROOM 2	ROOM 3	ROOM 4				
09:00 - 11:00	Registration							
09:30 - 09:55	Lubrication, power loss, and efficiency (II) & miscellanea Chair: Yasuyoshi TOZAKI, Yonggang LIU	Gear strength and durability (II) Chair: Thomas TOBIE, Kunihiko MORIKAWA	Dynamics and noise problems of gears (III) Chair: Philippe VELEX, Kiyotaka IKEJO	Manufacturing of gears (III) Chair: Andreas MEHR, Eiri NAGATA				
09:55 - 10:20	THE INFLUENCE OF PHOSPHATE ADDITIVES ON THE MICROFITTING OF GEARS	05-10 METHOD OF MEASURING THE LOAD DISTRIBUTION OF SPUR GEAR STAGES	04-11 HYBRID DYNAMIC MODELING OF SHEARER'S DRUM DRIVING SYSTEM AND THE INFLUENCE OF HOUSING TOPOLOGY ON THE DYNAMIC CHARACTERISTICS OF GEAR					
10:20 - 10:45	Takuya OHNO METAL-METAL FRICTION PROPERTY AND GEAR DURABILITY PERFORMANCE FROM LUBRICANT ADDITIVE IN CONTINUOUSLY VARIABLE TRANSMISSION FLUIDS	Markus DAFNER, Michael OTTO, Karsten STAHL 05-11 DETERMINATION OF LOAD DISTRIBUTIONS ON DOUBLE HELICAL GEARED PLANETARY GEAR BOXES	Hanjie JIA, Prof. Datong QIN 04-14 THEORETICAL RESEARCH ON THE VIBRATION MODE OF THE DOUBLEHELICAL STAR GEAR TRANSMISSION SYSTEM					
10:45 - 11:10	Keiichi MARITA INFLUENCE OF SURFACE PROFILE MODIFIED WITH FINE SHOT PEENING ON SCUFFING IN ROLLING-SLIDING CONTACT ELEMENT	Tobias SCHULZE, Konrad RIEDEL 05-12 LOAD-DEPENDENT BEVEL GEAR DEFLECTIONS AND THEIR IMPACT ON THE PITTING LOAD CARRYING CAPACITY	Wang Sanmin, Hao Lifeng 04-15 BOND GRAPH SIMULATION OF GEAR TRANSMISSION CONSIDERING TOOTH MESHING STIFFNESS AND DAMPING					
11:10 - 11:35	Masahiro FUJII, Yuya OMIYA, Ryo OCHIAI, Koshi ISHIMOTO, Akihiro UEDA DEVELOPMENT OF PRINTED SENSOR FOR GEAR HEALTH MONITORING SYSTEM (DEVELOPMENT OF THREE-AXIS PRINTER FOR CONDUCTIVE INK LASER SINTERING PROCESS AND PROPERTIES EVALUATION OF SINTERED ELECTRIC CIRCUIT)	Tobias REIMANN, Daniel KADACH, Teijiro YAMANAKA, Akira YAMAMOTO, Johann-Paul STEMPFLINGER, Karsten STAHL 05-13 TOOTH SURFACE STRENGTH TEST OF HYPER CONICAL GEARS	Masao NAKAGAWA, Dai NISHIDA, Deepak SAH, Toshiaki HIROGAKI, Eichi AOYAMA 04-16 INFLUENCE OF MOTOR FAULT ON SYNCHRONIZATION CHARACTERISTICS OF A MULTI-SOURCE DRIVING TRANSMISSION SYSTEM					
11:35 - 12:00	Takahiro KAWIMOTO, Daisuke IBA, Shintaro FUTAGAWA, Morimasa NAKAMURA, Nanako MIURA, Takashi IIZUKA, Arata MASUDA, Akira SONE, Ichiro MORIWAKI CURRENT METHODS OF ULTRASONIC AND EDDY ROLLING BEARING FOR LUBRICATION EVALUATION IN ROLLING BEARING	Tatsuya OHMACHI, Hidenori KOMATSUBARA, Ken-ichi MITOME 05-14 A STUDY ON LOADED TOOTH CONTACT ANALYSIS OF A CYCLOID PLANETARY GEAR REDUCER CONSIDERING BEARING ROLLER STIFFNESS	Ruizhi Shu, Jing Wei, Datong Qin 02-14 MAPS REPRESENTING EXISTENCE REGIONS OF CONJUGATE PINIONS FOR CUTTER GEOMETRY DESIGN IN INTERNAL GEAR SKIVING					
12:00 - 13:35	Akitoshi TAKEUCHI LUNCH 3 & CLOSING	Shuting Li, Yuki KONO 04-17 TRANSMISSION ERROR CONSTRUCTION OF A PAIR OF SPUR GEARS BASED ON GEAR ACCURACY DATA MEASURED	Yu CHIHARA, Yozo NAKAMURA, Junji USUDE, Toshimasa KIKUCHI, Tetsuji MONDEN, Keisuke YOSHIKAWA 02-15 NEW INTERNAL GEAR MACHINING SYSTEM, "SUPER SKIVING SYSTEM"					
		Shyi-Jeng TSAI, Ching-Hao HUANG 04-18 ESTIMATION OF LOADED STATIC TRANSMISSION ERROR OF HELICAL GEARS BY VIBRATION MEASUREMENT UNDER OPERATING CONDITIONS	Toshiya NAGUMO, Shigeki MATSUMURA, Haruo HOUJOH 02-16 PROCESS ANALYSIS FOR INTERNAL GEAR GRINDING					

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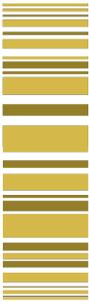
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