

Advance Program

2001 IEEE International Symposium on Industrial Electronics (ISIE 2001)

**12 – 16 June 2001
Paradise Hotel
Pusan (Busan), KOREA**



**IEEE Industrial Electronics Society
Pusan National University
Changwon National University**

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General Information

1. Symposium Date and Venue

The ISIE 2001 will take place on June 12-16, 2001. The symposium sessions will be held in the Paradise Hotel (<http://www.paradisehotel.co.kr/>), Pusan, Korea.

2. Official Language

The official language of the symposium is English. All presentations, including discussions and submissions, must be made in the official language.

3. Welcome Party

The Welcome party will be held on Tuesday (the 12th June) evening at 19:00. This welcome reception is included in the registration fee for all attendants.

4. Banquet

A banquet will be held on Thursday (the 14th June) evening at 19:00 at the Paradise Hotel. The banquet is included in the registration fee for all attendees. There is admission fee for spouses and guests at the reduced price of \$50 per person. You can purchase the tickets at the registration desk.

5. Registration

Details of registration are contained in the symposium registration form enclosed with this booklet. Registration fee can be paid by cash or major credit cards (Visa or Master). Please pick up your registration package from the symposium registration desk at the symposium site in the Paradise Hotel during the following hours.

Tuesday (6/12)	13:00 – 18:00
Wednesday (6/13)	07:30 – 18:00
Thursday (6/14)	07:30 – 18:00
Friday (6/15)	07:30 – 18:00

Requests for the refunds will be honored only if received up to April 30, 2001. There will be a \$100.00 charge for processing a refund.

6. Extra proceedings

Additional copies of the symposium proceedings (for \$130.00) can be purchased at the registration desk.

7. Transportation

The nearest airport is Kimhae International Airport (Pusan). Limousine buses are available from the airport to Paradise hotel (symposium venue) every 20 minutes between 7:35 am – 9:55 pm. The fare is 4,500 won (about US \$4) and it takes about 1 hour.

Registration Information

Registration form is included in this booklet. Registration fees are as follows:

		Before 15, April	After 15, April
IEEE member	Full registration	US \$450	US\$ 500
	Student registration	US \$150	US\$ 150
Non-member	Full registration	US \$500	US \$550
	Student registration	US \$200	US\$ 200

Deadline for early registration is April 15, 2001.

Accommodation Information

Hotel reservation form is included in this booklet. Accommodation has been reserved at the following properties:

Hotel Name	Category	Location	Rates	Type
Paradise Hotel (symposium site)	5*	Haeundae	US \$120	Beach side
			US \$100	Mountain side
Grand Hotel	5*	Haeundae	US \$100	
Glory Condominium	4*	Haeundae	US \$45 (50,000Won)	On-Dol (Korean style) Double Bed

Deadline for hotel reservation is May 31, 2001.

Tour Information

1. Technical Tour (June 14, 1:30pm - 6:00pm)

The technical tour to Hyundai Heavy Industries is planned on June 14 (1:30 pm – 6:00 pm). Hyundai Heavy Industries (<http://www.hhi.co.kr>) is the largest shipbuilder in the world and is located in Ulsan, which is about 1 hour ride from the symposium venue. The technical tour is free of charge and can be reserved through the registration desk.

2. Social Tour (June 16, 9:00am – 4:00pm)

Social tour to Kyungju is planned on June 16 (9:00am – 4:00pm). Kyungju was the capital of the Silla Kingdom for a thousand years, and the valley in which it is situated has a great concentration of historic buildings, temples, and artifacts. After the Silla Kingdom unified the peninsula in A.D. 676, the city developed into one of the world's major cultural centers. The area is called a "Museum Without Walls" because of the wealth of historical buildings and treasures to be found there. The fee for the full day social tour is 60,000 won (about US \$50).

3. Optional Local Tours/Social Tour to Kyungju

Optional tours can be reserved with tour reservation form included in this booklet. See the travel agent's web site <http://www.arumtour.co.kr/english/intro/introduction.htm> for additional information.

	Itinerary	Remark
1	June 13, Morning: Pottery Kiln (located in Ki-jang) Departure Haewoondae-visiting Pottery Kiln "SANGJOO DANG", -Yonggungsa temple-arrival Haewoondae	takes about 4 hours fee: KRW 30,000 min: 10 persons
2	June 13, Afternoon: Tezroc Cruise Departure Haewoondae-Jungangdong port- having a meal and sightseeing of Orukdo and seaside of Pusan on Tezroc-Chagalchi market, Kukje market-arrival Haewoondae	takes about 4 hours fee: KRW 50,000 min: 20 persons
3	June 14, Morning: Experiece Hot Spring or Sauna and Steamroom Departure Heawoondae -Korean style Mud steam kiln or "Huhshimchung" of the biggest hot spring-arrival Haewoondae	takes about 3 hours fee: KRW 35,000 min: 10 persons
4	June 15, Morning: Learning Korean traditional instruments Departure Heawoondae-learning Korean traditional instruments Bok(drum), Janggu -arrival Haewoondae	takes about 3 hours fee: KRW 35,000 min: 10 persons
5	June 15, Afternoon: Visiting Temples Departure Heawoondae-Tongdosa-Bomesa-Yonggungsa -arrival Haewoondae	takes about 4 hours fee: KRW 30,000 min: 10 persons
6	Daily: Pusan Tour	Full day fee: KRW 40,000
Condition: included Micro bus + English guide + Entrance fee of the course. *Excluded lunch or dinner. This schedule could be changeable.		

4. Information on Pusan

Pusan is Korea's principal port and second largest city. It is the primary port for ferry services to Japan and is also the gateway to the Hallyosudo Waterway and its picturesque islands. As an international port city with a population of 3.8million, Pusan has first-class hotels and restaurants to match its excellent beaches and outstanding shopping and sightseeing areas. Special places of interest in downtown Pusan are **Yongdusan Park** and the central shopping and entertainment districts of **Kwangbok-dong** and **Namp'odong**, which are situated just beside the park. Pusan's huge **Chagalch'i Fish Market** is a fantastic scene in the early morning as retailers haggle over the fresh fish. The fishing fleets come in before dawn, and the catch is immediately unloaded onto the dockside. The **United Nations Memorial Cemetery** is a somber yet beautiful place. It is the final resting place for many U.N. soldiers who were sacrificed during the Korean War four decades ago. **Taejongdae Park** is on the tip of Yongdo Island south of the downtown area. It is a very hilly area, heavily forested, with rugged cliffs dropping straight down to the sea 150m(492 ft.)below. Other scenic attractions are **Haundae Beach Resort**, 11miles northeast of Pusan, and Tongnae Hot Springs, north of the downtown area. **Kumgang Amusement Park** is located in a beautiful natural setting in Tongnae, and a cable car links it to the mountain above for a magnificent view over the suburbs of Pusan. There are also temples and the ruins of an old fortress nearby. Not far to the north is **Pomosa Temple** , dating back to the late 7th century.

T'ongdosa Temple ,one of the largest temples in Korea, is located between Kyongju and Pusan. It does not appear especially expansive at first, because many of the building are dispersed throughout the surrounding mountainside. Besides the many fine statues housed in the shrines, there is an excellent collection of artwork an display in the temple museum.

Major tour sites are as follows:

Pottery One of the most significant achievements in Korean art, the perfection of celadon, was accomplished during the Goryeo Dynasty. Korean artisans developed a superbly controlled glaze that was both beautiful and unique because it fully utilized the properties of Korea's rich clay. The highest praise is

given to the color of the glaze - a delicate kingfisher green celadon inlaid with a pictorial underglaze which is called Sanggamcheongja and occupies a central position in Goryeo celadons. The motifs and decorations found on the celadon are additional reasons for its great popularity among art lovers.

Yongdusan Park Yongdusan Park sits on Mt. Yongdusan, which was formerly called Mt. Songnimsan. Before the opening of the port, Japanese referred to Mt. Songnimsan as "Mt. Chungsan" and to Mt. Yongmisan as "Mt. Sosan." Mt. Songnimsan began to be called by its current name after Japanese monks who advocated the theory of geomancy built a huge shrine on the mountain and named it "Yongdusan Shrine." Major features of the park include a statue of Admiral Yi Sun-shin, a memorial tower commemorating the April 19th student uprising, a stele containing the National Charter of Education, a bust of Paeksan An Hui-je, the Victory Bugle, a flower clock and the 120 meter-high Pusan Tower that commands a full view of downtown Pusan City.

Chagalch'i Fish Market Chagalch'i Market, which stretches along the street from the Pusan City Hall to Namp'o-dong, is not only familiar to the residents of Pusan but also famous to the people of other regions of the country. Most sellers in this market are women, except the workers who unload fish from ships. The market is noisy all the time with spirited voices full of life, which characterizes Kyongsang-do province women, coupled with the flapping sound of leaping fish. At the entrance of the market, dried fish is sold. The middle of the market sells various fish by floor. B1 Frozen and processed fish 1F Marine products and fish and shells 2F Dried sea products 3F Raw fish section. Conger eel is the most famous of all.

Taejongdae Park Taejongdae is one of the most popular tourist spots in Pusan. 250-m-high rugged cliffs dropping straight down to the sea and decades-old pine tree forest present a fantastic view. Halfway up the cliff is a 7m-wide, 4.3km-long circulatory road. From the road, visitors can see Oryukto Island, the symbol of Pusan, and, far above the horizon, Taemado Island of Japan.

Haeundae Beach Resort Haeundae Beach, 14 kilometers from Pusan City Hall, is the most crowded beach in Korea. Some 1.6 kilometers long and 35-50 meters wide, the beach has an average water depth of one meter and is equipped with all the necessary facilities, including shower rooms, changing rooms, game rooms, shops and accommodations. It is easy to get here by all types of transportation.

Tongnae Hot Springs Tongnae Hot Spring, located 14km north of Pusan Station was first developed in 1691, during the reign of King Sukchong. The temperature and flow of the hot alkaline salt water have declined slightly over the years. The spa's long history has made it one of the most convenient for visitors, for comfortable accommodations and accessible amusement facilities have long been established. The place is surrounded by Kumjongsan Mountain and Kumgang Park.(Huhshimchung)

Kumgang Amusement Park Kumgang Park is located at the foot of Mt. Kumjong on the Tongnae side. Strange rock formations, rock cliff faces and thick pine forest make a strikingly beautiful scenery. A cable car runs to the top of the mountain. In the park one finds historic sites such as Tokchindaeamun, which is the former site of the inner gate of ancient Tongnae Castle, Mangmiru gate tower, Imjin Tongnae Soldiers Tomb, a zoo, a botanical garden, world sea-life exhibition hall and amusement facilities.

Pomosa Temple Pomosa Temple, located on the eastern slope of Mt. Kumjongsan in Pusan, is said to have been built by the Great Priest Uisang during the reign of King Munmu of the Shilla Kingdom. The temple is considered one of the three largest temples in the southeastern part of the country along with Haeinsa and T'ongdosa. It is also one of the ten most famous temples of the Hwaom Sect (preaches the doctrine of all encompassing harmony) of Buddhism in the country. The Taeungjon (main building) and the three-storied stone pagoda, both designated as treasures, are only some of many cultural properties which can be found here.

T'ongdosa Temple Tongmyong Pulwon Temple is located on the mountain behind Yongdang-dong at the back of the U.N. Cemetery. The temple covers about 8,900 square meters of land and houses 17 buildings. Unlike other temples which reflect the Chinese influence in their design, this temple is built

in the Southeast Asian style. A museum and the U.N. Cemetery are located nearby.

Yonggungsa Temple The temple which is in harmony with sea, dragon, and Gwaneumdaebul which include one's more pious religion- faith than any other place, is famous for a sacred place: If you sincerely pray, god will appear in your dream, and fulfill your wishes. If you pass Chunwon Lee Gwang-su Sibi (a manument inscribed with a poem), Yaksayeoraebul, stone-lamp and 108 stairs, Bulimun, Banwolgyo Bridge, and entry sutra inside, there are the place having clear water for metical substance relieving one's thirst, Daeungjeon: large Buddist sanctum to enshrine Buddha, Yonggungdan(the Dragon King's Place Stage), Bumjonggak(the bell of a Buddist temple), Haesugwaneumdaebul(the statue is the symbol of the Goddist of Mercy) etc.

Information for International Travelers

1. Currency and Credit Cards

Korean currency is decimal. Notes come in denominations of 1,000won, 5,000won, 10,000won, and coins 10won, 50won, 100won, and 500won. Banks are open from 9:30am - 4:30pm Monday to Friday and 9:30am to 1:00pm on Saturday. Automated Teller Machines are readily available from 8:00am to 10:00pm. Traveler's checks in foreign currencies will be cashed by banks and hotels but are not usually accepted in shops. The exchange rate is subject to market fluctuations. One U.S. dollar was equivalent to about 1,300 won as of March 24, 2001. Credit cards, including VISA, American Express, Diners Club, Master Card, and JCB, are accepted at major hotels, department stores, and the larger restaurants.

2. Voltage, sockets and plugs

In Korea, outlets for both 110 and 220 volts are available, although most newer hotels have only 220 volt outlets. Overseas delegates bringing laptop computers and other electrical appliances are advised to check whether a transformer is required.

3. Visa and Passport

Foreigners wishing to enter the Republic of Korea should have a valid passport. Most visitors with confirmed round-tickets can stay for 15 days without a visa, although this does not apply to certain nationalities. See the homepage of Ministry of Foreign Affairs and Trade of Korea (<http://www.mofat.go.kr/main/etop.html>) for the detailed information. Meanwhile, any visitors from countries which have no diplomatic relations or no special visa exemption with Korea should obtain entry visa before coming to Korea. If uncertain as to the requirements for visa entry to Korea, please contact your nearest Korean Embassy or Consulate or Korean Immigration Bureau.

4. Tipping

Tipping is not a traditional Korean custom, but a 10% service charge is usually added to the bill at hotels and other tourist facilities and tipping is not expected. It is not necessary to tip a taxi driver unless he assists you with luggages or provides an extra service.

5. Telephone

Many public telephones are available around the symposium venue. Coin or telephone card is needed. The card can be purchased at the shop.

ISIE 2001

ISIE 2001 Registration Form

**Registration fees MUST be received before April 15, 2001
to qualify for Early Bird Rates.**

Last name, First name

Affiliation/Organization

Address

City, State/Province, Postal/Zip Code, Country

Phone

Fax

e-mail

IEEE membership Number

Paper Number

Registration Fees (All fees are in US Dollars)	Early Registration Before April 15, 2001		Late Registration After April 15, 2001 (Cash Only)		Total
	IEEE Member	IEEE Non-member	IEEE Member	IEEE Non-member	
Basic Symposium Fee Includes admission to Technical sessions and Workshops, Symposium proceedings, Technical tour, Welcome reception, Banquet, Farewell party, and Coffee breaks	US \$450	US \$500	US \$500	US \$550	
Guest Registration a) Includes guest kit, Welcome reception and Banquet b) Banquet only c) Welcome reception only	US \$100 US \$50 US \$20	US \$100 US \$50 US \$20	US \$100 US \$50 US \$20	US \$100 US \$50 US \$20	
Student Registration Includes admission to Technical sessions and Workshops, Symposium proceedings, Welcome reception, Banquet and Coffee breaks	US \$150	US \$200	US \$150	US \$200	
				Total	US \$

Method of Payment

Card Type: _____ Visa

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Phone: +82-51-510-1463

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ISIE 2001 Tour Reservation Form

Name:

Address:

Phone:

Fax:

E-mail:

OPTIONAL LOCAL TOUR/SOCIAL TOUR TO KYUNGJU

Tour	Date	Price	No. of Person	Payment
Pottery Kiln (located in Ki-jang)	June 13 (morning)	₩ 30,000		
Tezroc Cruise	June 13 (afternoon)	₩ 50,000		
Experiiece Hot Spring or Sauna and Steamroom	June 14 (morning)	₩ 35,000		
Learning Korean traditional instruments	June 15 (morning)	₩ 50,000		
Visiting Temples	June 15 (afternoon)	₩ 30,000		
Pusan Tour	Daily	₩ 40,000		
Kyungju Tour (social tour)	June 16 (9:00 am – 4:00 pm)	₩ 60,000		
TOTAL				

Method of Payment

Card Type: Visa Master

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Please send a copy of this form to the ISIE 2001 Secretariat by Fax.

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Keynote Speeches, Plenary Lectures, and Invited Talks

The symposium offers two keynote speeches, five plenary lectures, and three invited talks.

Keynote Speech I Advances in Industrial Electronics

Speaker: Dr. Fumio Harashima
President, Tokyo Metropolitan Institute of Technology, Japan

Date : Wednesday, June 13
Time : 10:00 am – 11:00 am
Place : Grand Ball Room

Abstract The modern industrial electronics technology started back in 1960's after the commercialization of LSI circuits and power semiconductor devices. In the middle of 1970's, micro-processors came into the market, and the advances of industrial electronics was accelerated. Since 1990's PCs and information networks have been key technologies of industrial electronics. The IEEE Industrial Electronics Society has been the major worldwide academic organization in this particular technology. The IEEE/IES has been dealing with wide-ranged technical topics, listed below.

Emerging Technologies: Electric Vehicles, Industrial Internet Technology , Industrial Multimedia, Programming Language in Industry, Technology Integration, Transportation Technology, Wireless Communication

Factory Automation: Process Automation , Manufacturing Information Systems, Software Systems for Industry Communications, Design for Manufacturability, Serviceability, and Reliability, Industrial Control, Instrumentation, and Signal Processing: Control Technology, Modeling and Simulation Algorithms , Signal, Image and Data Processing , Vehicle Electronics,

Intelligent Systems: Computational Intelligence, Man Machine Interaction, Data Fusion and Data Mining

Mechatronics: Actuators and Sensors, Industrial Robotics, Industrial Vision, Micro-Electromechanical Systems , Motion Control , Sensor Fusion

Power Electronics: Energy Systems , High Frequency Converters, High Performance Controls Motors and Drives , Power Converters, Power Devised and Components

Although the areas of industrial electronics are still expanding, I believe that the following three issues must be enhanced for the future human society.

- Environment and Energy

This is the most critical issue for human survival. The industrial electronics technology can contribute to this issue in New Energy Systems, Electric/Hybrid Vehicles, Energy Conservation Technology, etc.

- Human Welfare

The human average life expectancy has been longer and longer. Mechatronics and Robotics will be key technologies, which give comfortable lives to aged and handicapped people.

- Intelligent Systems

Intelligent human life will be the final goal of humankind in this century. Intelligent Human-Machine Systems, which maximally enhance human abilities, must be developed.

In this presentation the trends of science and technology are briefly reviewed, and some examples of research activities in the above mentioned issues are shown.

Biography Fumio Harashima was born in Tokyo in 1940. He has received B.S., and M.S. and Ph.D. degrees all in Electrical Engineering from University of Tokyo, Tokyo, Japan, in 1962, 1964 and 1967, respectively. He was an Associate Professor in the Institute of Industrial Science, University of Tokyo in

1967, and a Professor from 1980 through 1998. He was Director of the Institute from 1992 to 1995. Since April 1, 1998, he has been President of Tokyo Metropolitan Institute of Technology, Tokyo, Japan. Dr. Fumio Harashima is also currently Professor Emeritus of University of Tokyo.

His research interests are in power electronics, mechatronics and robotics. He is the co-author of four books and has authored more than 1,000 published technical papers. He has been active in various academic societies such as the Institute of Electrical Engineers of Japan, Society of Instrument and Control Engineers of Japan (SICE), Robotics Society of Japan and IEEE. Dr. Harashima served as President of IEEE Industrial Electronics Society in 1986-1987 and 1990 IEEE Secretary. He was a member of IEEE N&A Committee in 1991-1992, and IEEE Fellow Committee in 1991-1993. He served as the Founding Editor-in-Chief of the IEEE/ASME Transactions on Mechatronics in 1995. He is a member of IEEE Award Board since 2001. He is currently Editor-in-Chief of the IEEE Transactions on Industrial Electronics. Dr. Harashima is 2001 President of IEE of Japan. Dr. Harashima has received a number of awards, including 1978 SICE Best Paper Award, 1983 IEE of Japan Best Paper Award, 1984 IEEE/IES Anthony J. Hornfeck Award and 1988 IEEE/IES Eugene Mittelmann Award. He is a Fellow in IEEE and SICE.

Keynote Speech II

Evolutional Challenge on Technology and Cost for Future Memory Business

Speaker: Dr. Chang-Gyu Hwang
Samsung Electronics Co. Ltd., Korea

Date : Wednesday, June 13

Time : 11:20 am – 12:20 am

Place : Grand Ball Room

Abstract Following by Moore's laws which is basically an economic engine in the semiconductor industry, the cost of the shrink in half every 18 months (or less) has been deeply rising at an increasing rate. To counterbalance this the semiconductor industry are seeking into the strategies as shifts in wafer sizes, increasing yields, increasing manufacturing efficiencies, and increasing productivity to lower manufacturing cost couples with the demand of higher and reliable device performance. In this presentation, evolutional challenging issues on technology and cost for future memory business in the semiconductor industry will be briefly mentioned.

Biography He received the B.S. and M.S. degrees in electrical engineering from Seoul National University, Seoul, Korea, in 1976 and 1978, respectively, and the Ph.D. degree in electrical and computer engineering from the University of Massachusetts, Amherst, MA, in 1985.

From 1978 to 1981, he served as an instructor in the Korean Naval Academy. From 1985 to 1989, he was a post-doc Research Associate in the Integrated Circuit Laboratory at Stanford University, Stanford, CA, where he conducted extensive research on device modeling and characterization, hot-carrier effects, and circuit reliability for small-geometry CMOS devices. He also served as a technical consultant on "Sub-micron CMOS characterization" at HP Lab. from 1986 to 1987 and held a consulting staff position in the Technology-CAD Department at Intel Corp. from 1988 to 1989. In 1989, he joined the Semiconductor Business, Samsung Electronics Co., Ltd. as Director of Device Technology Development Team. He became Senior VP and General Manager of R&D Center in 1998, Executive VP and General Manager of R&D Center in 1999, and CEO and Executive VP of Memory Division of Samsung in 2000. He is currently responsible for research, development, and manufacturing of all memory products of Samsung Electronics Co., Ltd.

During 1989 to 1994, he performed extensive research on modeling, simulation, and reliability of submicron MOS transistors; ULSI-cell technology, 0.25-um CMOS technology, and 64-Mb DRAM integration. He was the chief technologist for the development of the world's 1st 256-Mb DRAM in 0.2-um technology from 1992 to 1994. His technical achievements also include development of the world's 1st 1-Gb DRAM in 0.18-um technology in 1996, the 2nd-generation 1-Gb DRAM in 0.13-um technology

in 1998, the 4-Mb FRAM using the cell of 1 Transistor 1 Capacitor in 1999, and 512-Mb DRAM in 0.12-um technology in 2000. Other pioneering technologies and devices that he made direct contribution include the technologies for RAMBUS DRAM, giga-Hz CPU and 1-Gb NAND Flash memory. He also contributed to the standardization of Double Data Rate (DDR) and Advanced DRAM Technology (ADT). He was involved in research and development of advanced process technologies for sub-0.1um transistor process using Ni-silicide electrode, elevated S/D, preferential metal deposition (PMD) process for void-free contact, new capacitor process using Al₂O₃ dielectric, atomic layer deposition (ALD) process for high-step coverage and void-free deposition and new process architectures such as an embedded DRAM architecture with capacitor-over-metal (COM) structure and CPU architecture using SOI and SEG. His current R&D interests include technology for sub-0.1 um device and process design (4-Gb DRAM and beyond) and high-performance memory products (DRAM/SRAM/Flash/FRAM with sub-0.1 um technology). He pays special attention to low voltage/power and high-speed operation and advanced device structures for Multi-Giga bit era. He also addresses characterization, modeling, and simulation of nanometer process and device reliability for optimized semiconductor memories.

Dr. Hwang has participated actively in IEEE activities for many years. He served on the Program Committees of International Electron Devices Meeting (IEDM), International Conference on VLSI and CAD (ICVC), and International Workshop on Statistical Modeling (IWSM). He served as Chairman for Memory Subcommittee of IEDM from 1994 to 1996, Technical Program Chairman of 1997 ICVC, and a Guest Editor of the IEEE Transactions on Electron Devices in 1998. He has served on the Executive Committee of IEEE/JSAP VLSI Symposium since 1998. He has presented Plenary and Invited talks at major international semiconductor conferences which include VLSI Symposium, IEDM, ICVC, European Solid State Device Research Conference (ESSDERC) and Microprocesses and Nanotechnology Conference (MNC) on topics such as technology, driving force, and future trends of DRAM and impacts to Semiconductor Industry. He holds several international patents in semiconductor design and process and authored and co-authored more than 50 technical papers in international journals and conferences. He was listed as *One of the Top Fifty Contributors to the Korean History for Last Fifty Years* (Selected as One of the Three contributors in Science and Technology Area) by JoongAng Newspaper in Korea (Aug.15th, 1995) and received Grand Prize Award of Samsung Technology Award in 1994, Samsung Special Prize for Developing the World's First 256M DRAM in 1994, and the ISI Citation Classic Award in 2000. Dr. Hwang is a Senior Member of IEEE.

Plenary Lecture I

Exploring the Mysterious Underwater World with Robots

Speaker: Professor Junku Yuh
Department of Mechanical Engineering, University of Hawaii, Honolulu, U.S.A.

Date : Wednesday, June 13

Time : 3:20 pm – 4:20 pm

Place : Grand Ball Room

Abstract The ocean covers about two-thirds of the earth and has a great effect on the future existence of all human beings. About 37% of the world's population lives within 100km of the ocean. The ocean is generally overlooked as we focus our attention on land and atmospheric issues. We have not been able to explore the full depths of the ocean and its abundant living and non-living resources. For example, it is estimated that there are about 2,000 billion tons of manganese nodules on the floor of the Pacific Ocean near the Hawaiian Islands. Only recently we have discovered, by using manned submersibles, that a large amount of carbon dioxide comes from the seafloor and extraordinary groups of organisms live in hydrothermal vent areas. Underwater robots can help us better understand marine and other environmental issues, protect the ocean resources of the earth from pollution, and efficiently utilize them for human welfare. However, a number of complex issues due to the unstructured, hazardous undersea environment make it difficult to travel in the ocean even though today's technologies have allowed humans to land on the moon and robots to travel to Mars.

As the ocean attracts great attention on environmental issues and resources as well as scientific and military tasks, the need for and use of underwater robotic systems has become more apparent. Underwater robotics represents a fast growing research area and promising industry as advanced technologies in various subsystems develop and potential application areas are explored. Great efforts have been made in developing autonomous underwater vehicles (AUVs) or underwater robots to overcome challenging scientific and engineering problems caused by the unstructured and hazardous ocean environment. With the development of new materials, advanced computing and sensory technology, as well as theoretical advancements, R & D activities in the AUV community have increased.

Current status of AUV technologies and their applications will be presented as well as on-going research activities at the Autonomous Systems Laboratory.

Biography Dr. J. Yuh is currently Professor of the Department of Mechanical Engineering at the University of Hawaii in Honolulu, Hawaii. He is also Director of the Autonomous Systems Laboratory where about 30 people currently work on his research projects. His major research focus is underwater robotics, with sponsorship by state and federal agencies (National Science Foundation, Department of Commerce - Sea Grant College Program, Office of Naval Research) and industry (Intel, SGI, EG&G, Tektronix). He is also appointed as a Program Director of the U.S. National Science Foundation from August 2001.

Dr. Yuh received a 1991 Presidential Young Investigator Award from U.S. President George Bush through the National Science Foundation, a 1991 Boeing Faculty Award, a UH Fujio Matsuda Fellow award, and a 1989 DOW Outstanding Young Faculty Award from the American Society for Engineering Education. He is listed in Who's Who in the World, Who's Who in the West, and Men of Achievement. He has published over 70 technical articles and edited/co-edited six books and two journal special issues on underwater robotics, including Journal of Autonomous Robots (July/August 1996), Underwater Robotic Vehicles: Design and Control (1995, TSI Press); and Robotics and Manufacturing (1994, ASME Press). He served as an Associate Editor for IEEE Transaction on Robotics and Automation, and serves as an Associate Editor for the International Journal of Engineering Design and Automation and the International Journal of Intelligent Automation & Soft Computing.

Dr. Yuh has served as program chair of the 1993 International conference on Computer Applications in Industry and Engineering; organizing chair of the 1994 World Automation Congress (WAC); program co-chair of the 1996 WAC; and co-chair of an NSF Workshop on "Future Research Directions in Underwater Robotics," August, 1994. He serves as Program Chair of the 2003 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), the organizing chair of IROS 2001, and program co-chair of the 2001 IEEE International Conference on Robotics and Automation. He founded and chairs the technical committee on Underwater Robotics of the IEEE Robotics and Automation Society.

Plenary Lecture II

Definition and Analysis of Hardware- and Software-Fault-Tolerant Architectures

Speaker: Dr. Jean-Claude Laprie
Directeur de Recherche of CNRS, France

Date : Thursday, June 14

Time : 8:00 am – 9:00 am

Place : Grand Ball Room

Abstract Systems in which one piece of hardware supports multiple software are subject to software failures and require architectures that tolerate both hardware and software faults. In this talk a structured definition of hardware- and software-fault-tolerant architectures is addressed. It is tried to be as general as possible, dealing with specific classes of faults or techniques only when necessary. After discussing software-fault-tolerance methods, a set of hardware- and software-fault-tolerant architectures are

presented, analyzed, and evaluated. A sidebar addresses the cost issues related to software-fault tolerance.

Biography He received the Certified Engineering degree from the Higher National School for Aeronautical Constructions, Toulouse, France, in 1968, and the Doctor in Engineering degree in automatic control and the Doctor-of-Science degree in computer science from the University of Toulouse in 1971 and 1975, respectively. He has been working with LAAS-CNRS since 1968, where he has directed the research group on fault tolerance and dependable computing since 1975. He was chair of the IEEE Computer Society Technical Committee on Fault-Tolerant Computing in 1984-1985 and has been chair of the IFIP Working Group on Dependable Computing and Fault Tolerance since 1986.

Plenary Lecture III

Mechatronics: a Year 2001 Status Report

Speaker: Professor Masayoshi Tomizuka
Cheryl and John Neerhout, Jr., Distinguished Professor
Department of Mechanical Engineering, University of California, Berkeley, U.S.A.

Date : Thursday, June 14

Time : 9:00 am – 10:00 am

Place : Grand Ball Room

Abstract This talk presents a Year-2001 status report of mechatronics. As we enter the new century, the most updated definition of mechatronics may be: "the synergetic integration of physical systems with electronics, information technology and complex-decision making in the design, manufacture and operation of industrial products and processes." Mechatronics may be interpreted as the best practice for synthesis of engineering systems, and it covers a broad area and scope. Mechatronics research should be driven by target physical systems and not by methodologies. Vehicle lateral control for automated highway systems, hard disk drives and media handling mechanisms for printing engines are reviewed as examples of mechatronics research. Engineering students should be exposed to mechatronics and to the culture of working in teams.

Biography He received B.S. and M.S. from Keio University in 1968 and 1970, and Ph. D. from Massachusetts Institute of Technology in 1974. He has been working in Department of Mechanical Engineering, University of California at Berkeley since 1974, where he is a Cheryl and John Neerhout, Jr., Distinguished Professor. He was a teaching member in Keio University in 1974, and was a Visiting Professor, Toshiba Chair in Intelligent Mechatronics, University of Tokyo in 1991-1992. He was Vice Chairman of Graduate Studies, Department of Mechanical Engineering, University of California at Berkeley and Director of Engineering Systems Research Center, University of California at Berkeley.

Plenary Lecture IV

Horizontal and Vertical Integration in Industrial Electronics Technologies

Speaker: Professor Hiromasa Haneda
Department of Electrical and Electronics Engineering, Kobe University, Japan

Date : Friday, June 15

Time : 8:00 am – 9:00 am

Place : Grand Ball Room

Abstract Industrial electronics originates in wide spectrum of technologies as applied to industrial needs either directly or indirectly. The trends and mission are more stressed in this direction even today. In fact, those technologies from traditionally different disciplines are tied together toward the advanced. In the talk, advantages and pitfalls are discussed taking examples from power-electronics system modeling and simulation, motor controls, and robots intelligence.

Biography He received B.S. and M.S. from Kyoto University in 1963 and 1965, and Ph. D. in Electrical Engineering and Computer Sciences from University of California, Berkeley in 1972. He is a professor in Department of Electrical and Electronics Engineering, Kobe University and is a co-chairman of ISIE 2001.

Plenary Lecture V

New Approaches to Information Aggregation: an Engineering Oriented Survey

Speaker: Dr. Imre J. Rudas
Budapest Polytechnic, Hungary

Date : Friday, June 15
Time : 9:00 am – 10:00 am
Place : Grand Ball Room

Abstract In building intelligent systems, like decision support and expert systems, intelligent controllers, learning algorithms, one of the key issues is the information aggregation. The literature provides a host of attractive operators for integrating information. The variety of these operators might be confusing and make it difficult to decide which one to use in a specific model or situation. The aims of the plenary speech are:

- to give an engineering (application) oriented survey of the existing aggregation connectives starting from the classical Zadehian-operators, through the theory of t-operators, till the most up-to-date operators, containing the results of the author and his colleagues on entropy and evolutionary operators,
- to summarize the most important criteria for selecting appropriate aggregation operators,
- to provide some simulation results on performance evaluation of some operator families.

Invited Talk I

Copyright Protection Technology for Government

Speaker: Dr. Kyung Ryul Bae
CIO, Seoul Metropolitan City, Korea

Date : Wednesday, June 13
Time : 2:10 pm – 3:10 pm
Place : Sydney

Abstract Technology of tangible products has been protected by patent law and relevant organizations. Very recently government organizations began to take look into the possibility of protecting ideas and intangible products in the name of 'business model.' However, copyright of digital products has not been properly protected, even though it is becoming increasingly important in the era of inter-networked world. Massive copies and illegal distribution of digital contents can be made easily and promptly, and therefore eventually 'creativity' of this society is not respected and properly paid.

In this session, importance of digital copyright protection technologies will be discussed and states of arts will be introduced. Currently, digital audio providers, including five major labels, are very active to select technologies which can minimize illegal copy and network distribution of the audio files. Discussion of the technology will focus on trends and future perspective.

This session will be beneficial to digital content providers who are delivering contents on network and engineering companies which are in developing content delivery and copyright protection technology.

Biography He received B. S. from Old Dominion University in 1980, M. S. and Ph. D. from University

of Alabama in 1982 and 1990, respectively. He was an assistant professor in Stillman College from 1988 to 1990, an assistant professor in University of Alabama from 1990 to 1991, a professor in Sangmyung University from 1993 to 1999. He was a director in Halla Heavy Industry from 1991 to 1993. He is now a CIO (Chief Information Officer) in Seoul Metropolitan Government.

Invited Talk II

Control of Elevator Drive System

Speaker: Professor Seung-Ki Sul
Seoul National University, Korea

Date : Thursday, June 14
Time : 1:10 pm – 2:10 pm
Place : Sydney

Abstract In modern city life, elevator is an essential transportation system in the commercial buildings and apartment. In this talk, the control technology for high speed gearless elevator will be addressed. The elevator drive system is a position servo whose power rating is above several tens of KW. In modern elevator drive, permanent magnet based ac machines are widely used because of compactness and high efficiency. The wide spread use of ac machine brings out several challenging problems such as ripple free torque control of the machine, anti-vibration control of cage, smooth and fast position control, and high efficiency with high reliability. With developments of digital signal processor and high performance power semiconductor, the modern control theory can help to solve the above mentioned problems. In this talk, the elevator drive system based on TMS320vc33 DSP will be described and its overall performance with real commercial product will be addressed.

Biography Seung-Ki Sul (IEEE Fellow) was born in Pusan, Korea. He received the B.S, M.S., and Ph.D. degrees in electrical engineering from Seoul National University, Seoul, Korea, in 1980, 1983, and 1986, respectively. He was with the department of Electrical and Computer Engineering, University of Wisconsin, Madison, as an Associate Researcher from 1986 to 1988. He then was with Gold-Star Industrial Systems Company as a Principal Research Engineer from 1988 to 1991. Since, 1991, he has been a member of the faculty of the School of Electrical Engineering, Seoul National University, where he is a full professor.

Invited Talk III

Toward the Realization of MEMS Micro Coolers

Speaker: Dr. Sukhan Lee
Samsung Advanced Institute of Technology, Korea

Date : Friday, June 15
Time : 1:10 pm – 2:10 pm
Place : Sydney

Abstract As the demand on the speed as well as the die size of integrated electronics grows exponentially, so does the power consumption associated with them. Sooner or later, conventional heat sinks with a fin-fan configuration may reach their limit for cooling high performance chips in compact space. One or two dimensional heat pipes based on phase transition may be an alternative choice. However, heat pipes are basically a heat spreader and require the connection to an effective heat dissipator or a condenser for cooling. We have been developing a capillary pumped loop (CPL) based MEMS micro cooler based on phase transition. CPL based micro coolers are more powerful in heat spreading than heat pipes because the separation of gas and liquid flows in CPL removes out the interaction between gas and liquid flows in heat pipes.

This talk first reviews the current status of micro cooling research world wide. Then, the development of CPL based MEMS micro cooler at Samsung Advanced Institute of Technology will be presented in more details.

Biography Dr. Sukhan Lee is currently an Executive Vice President of Samsung Advanced Institute of Technology (SAIT), the Corporate R&D Center for Samsung. He is heading the Micro and Nano Electro Mechanical Systems Sector. He joined in SAIT in 1998. Prior to SAIT, Dr. Lee has been a Professor of Electrical Engineering and Computer Science at the University of Southern California (USC), since 1983. Also, he has jointly held a Senior Member of Technical Staff position at the Jet Propulsion Laboratory (JPL), California Institute of Technology, since 1990.

Dr. Lee received his Ph.D. in Electrical Engineering from Purdue University, West Lafayette, Indiana, in 1982, and his M.S. and B.S. in Electrical Engineering from Seoul National University, Korea, in 1972 and 1974, respectively. Dr. Lee has been elected as an IEEE Fellow in 1997, elected as a Member of Korean National Science of Academy in 1999, based on his contribution to the advancement of robotics and intelligent systems. He has been awarded a Chaired Invited Professorship of the Sung Gyun Kwan University in 2001.

Dr. Lee has also been very active in Professional Societies: he has been a Member of the Editorial Board and a Guest Editor for numerous International Journals, including the IEEE Transactions on Robotics and Automation and on Neural Networks. He is currently serving as an Associate Editor for the IEEE Sensor Journal. He has served as an AdCom Member of the IEEE Robotics and Automation Society, as Chairs of the IEEE Technical Committees on Assembly and Task Planning as well as on Computational Intelligence in Robotics. He has founded the IEEE International Symposium on Assembly Planning, as well as on Computational Intelligence in Robotics, serving as their Program and General Chairs in 1995 and 1997, respectively.

He is currently a Vice President of Korean Sensor Society. He also served as the President of KSEA(Korean American Scientists and Engineers Association) Southern California Chapter in 1996, and is elected as a Councilor of KSEA in 1999.

Workshops

The workshops for ISIE 2001 will be held on Tuesday(3:00 pm – 5:00 pm), June 12th, 2001 in the Paradise Hotel.

Workshop I **Distributed Multi-Sensor Environment with Applications**

Professor Mohamad Farooq
Royal Military College of Canada, Canada

Workshop Description:

Sensor integration and registration is a prerequisite to exploiting the inherent advantages of multi-sensor systems over single sensor systems. Using a single sensor, we can monitor objects with a precision and accuracy that depend on the sensor characteristics. By using multiple sensors to observe an object, we can obtain multiple viewpoints, extended coverage both spatially and temporally, reduce the ambiguity and obtain more precise estimate of object kinematics than that is possible through the best individual sensor. Engineers can replace a single very expensive sensor with many cheaper sensors in a tracking scenario or employ a variety of sensors to construct a complete view of the robot's environment. This certainly is the case with of a netted sensory system. For example, a single sensor may have a blind azimuth (screening angle) which an adjacent sensor may cover. In those areas where sensor coverage overlaps, the quality of object recognition and tracking is improved by the additional data provided from overlapping sensors which not only improve our estimate of object kinematics, but also help with its detection when the environment is changing. From the military point of view, multiple sensors provide diverse information, which can be used by the decision-makers to derive an appropriate response to perceived threats. As the number of threats, or objects in robot's workspace, being monitored increases, the difficulty in maintaining an accurate picture of the environment grows exponentially. As such, the need to develop state-of-the-art techniques capable of functioning in a cluttered, dynamic environment containing the objects of interest is of fundamental importance to enhancing the survivability and usefulness of a multi-sensor system.

The development and the design of a Distributed Multi-Sensor environment must be based on solid understanding of the theoretical foundations and should yield required performance in a control simulation environment. To this end, the tutorial will provide an overview of the integration and registration issues in a distributed sensory environment and point out some of the outstanding problems that need to be addressed and the challenges that still remain. Besides discussing the conventional techniques to resolve the sensor integration and registration issues, non-conventional approaches, such as Neural Networks and Fuzzy Logic based methods will also be explored. The formulation of the problem in light of these techniques will be discussed in detail. In addition, the design of a versatile simulation environment to evaluate the sensor integration techniques will be presented and the benefits of fusing the kinematics and non-kinematics information will be demonstrated through simulation results.

Workshop II **Genetic Algorithms: Concepts and Designs**

Dr. S. Kwong, Dr. K. F. Man, and Dr. K. S. Tang
City University of Hong Kong, Hong Kong

Workshop Description:

The development of Genetic Algorithms (GA) dates back to the early nineteen sixties, but during this period growth in the field was slow. It was not until the exceptional contribution made by Holland in 1975 that an exponential increase of activity in this area first occurred. On entering the nineties, we have witnessed another quantum leap in GA research and development by academics and engineers world-wide. The reason for such a phenomenon is easily explained. It has undoubtedly been generated by the advances in solid-state microelectronics fabrication that, in turn, led to the proliferation

of widely available, low cost, but speedy computers. The GA as a technique for search and optimization processes, is now ready to be fully exploited and explored. The GA works on the Darwinian principle of natural selection for which the noted English philosopher, Herbert Spencer, coined the phrase “Survival of the fittest”. It is not a mathematically guided problem solver. Therefore, it possesses an intrinsic flexibility and the freedom to choose a desirable solution according to the design specifications. Whether the specifications be nonlinear, constrained, discrete, multimodal, or even NP hard, GA is entirely equal to the challenge. It is, therefore, the aim of this tutorial to gather together relevant GA material that has already been used and demonstrated in various practical applications.

Within this theme in mind, the tutorial has therefore been designed to be of particular interest to practicing engineers and researchers. It is not our intention to present a series of rigorous mathematical formulae for the GA formulation, nor the genetic concepts that are required to read this tutorial. However, we do recommend that readers acquire the necessary GA background and biological data from other literature, so that they can appreciate the full capability of the GA to solve the types of practical engineering problems that we intend to draw attention to. This assimilation process, of course, must be accompanied by a basic knowledge of computer programming techniques.

This tutorial starts with an introduction of GA. Of which, the basic fundamental framework of GA is outlined. What makes GA work and how does it improve its evolution are the essence of GA. There are a number of variations to achieve this task. And each task has its own merit. Hence, a range of GA structural modifications to improve the performance are thus recommended. A newly proposed and unique Hierarchical Genetic Algorithm (HGA) is also introduced. It is demonstrated as a powerful methodology in addressing the problems in determining the system topology.

Workshop III

Variable Structure Systems Theory Based Training Strategies for Computationally Intelligent Systems

Professor Okyay Kaynak
Bogazici University, Istanbul, Turkey

Workshop Description:

Noise rejection, handling plant-model mismatches and alleviation of structured or unstructured uncertainties constitute the prime challenges that are frequently encountered in the practice of systems and control engineering. One way of reducing the adverse effects of the stated difficulties and obtaining a good tracking precision is to utilize the techniques of variable structure systems theory, which offers well formulated solutions particularly to problems containing uncertainty and imprecision.

In this tutorial, variable structure systems theory based training strategies of computationally intelligent systems are discussed. Several approaches are developed for alleviating the above-mentioned difficulties.

In one of the approaches described, a dynamic parameter adaptation law is derived and the applicability of the algorithm is discussed. The analysis presented aims to extract the conditions for establishing equivalence between sliding mode control of the plant and sliding mode learning in the controller. Another method is based on the selection of an extended Lyapunov function, by the use of which the sensitivity of the cost measure to the adjustable parameters are minimized together with an error measure. The particular importance of what has been presented is the imposition of a sliding regime on the plant under control while a similar behavior is observed at the output of the controller. Specifically, the unavailability of the desired control sequence emerges as the prime problem that is alleviated by the learning control approaches discussed.

The performances of the methods developed are assessed on the dynamic models of several nonlinear systems, whose dynamic equations are assumed to be unknown throughout the results presented. In the tests, the alleviation of the adverse effects of observation noise and varying payload conditions are studied.

Symposium Schedule at a Glance

		6/12 (Tue)	6/13 (Wed)	6/14 (Thu)	6/15 (Fri)	6/16 (Sat)	Time and Place
Welcoming Reception		●					Time : 19 : 00 Place : Garden or Capri
Opening Ceremony			●				Time : 09 : 00 – 10 : 00 Place : Grand Ball Room
Banquet				●			Time : 19 : 00 – 21 : 00 Place : Grand Ball Room
Farewell Party					●		Time : 19 : 00 – 20 : 00 Place : Garden or Capri
Keynote Speech	I		●				Time : 10 : 00 – 11 : 00 Place : Grand Ball Room
	II		●				Time : 11 : 20 – 12 : 20 Place : Grand Ball Room
Invited Talk	I		●				Time : 14 : 10 – 15 : 10 Place : Sydney
	II			●			Time : 13 : 10 – 14 : 10 Place : Sydney
	III				●		Time : 13 : 10 – 14 : 10 Place : Sydney
Plenary Lecture	I		●				Time : 15 : 20 – 16 : 20 Place : Grand Ball Room
	II			●			Time : 08 : 00 – 09 : 00 Place : Grand Ball Room
	III			●			Time : 09 : 00 – 10 : 00 Place : Grand Ball Room
	IV				●		Time : 08 : 00 – 09 : 00 Place : Grand Ball Room
	V				●		Time : 09 : 00 – 10 : 00 Place : Grand Ball Room
Workshop	I	●					Time : 15 : 00 – 17 : 00 Place : Sydney I
	II	●					Time : 15 : 00 – 17 : 00 Place : Sydney II
	III	●					Time : 15 : 00 – 17 : 00 Place : Miami
Technical Tour				●			Time : 13 : 30 – 18 : 00 Place : Hyundai Heavy Industries
Social Tour						●	Time : 09 : 00 – 16 : 00 Place : Kyongju

ISIE 2001 WEDNESDAY SESSIONS (JUNE 13)

Track	1	2	3	4	5	6	7
Room	Grand I	Grand II	Grand III	Sydney I	Sydney II	Miami	Capri
09 : 00 to 12 : 20	<p>Opening Ceremony (09 : 00 – 10 : 00)</p> <p>Keynote Speech I (10 : 00 – 11: 00) : Advances in Industrial Electronics Prof. F. Harashima, Tokyo Metropolitan Institute of Technology, Japan</p> <p>Keynote Speech II (11 : 20 – 12 : 20) : Evolutional Challenge on Technology and Cost for Future Memory Business Dr. Chang-Gyu Hwang, Samsung Electronics, Co. Ltd, Korea</p>						
14 : 10 to 15 : 10	<p>Invited Talk I : Copyright Protection Technology for Government Dr. Kyung Ryul Bae, CIO, Seoul Metropolitan City, Korea</p>						
15 : 20 to 16 : 20	<p>Plenary Lecture I : Exploring the Mysterious Underwater World with Robots Prof. Junku Yuh, University of Hawaii, Honolulu, U.S.A.</p>						
WeP 16 : 40 to 18 : 40	Power Systems I	Electronic Lamp Ballast	Nonlinear and Adaptive Control	Vision Systems	Data Fusion and Data Mining	Factory Automation	Industrial Applications I

ISIE 2001 THURSDAY SESSIONS (JUNE 14)

Track	1	2	3	4	5	6	7
Room	Grand I	Grand II	Grand III	Sydney I	Sydney II	Miami	Capri
08 : 00 to 10 : 00	<p>Plenary Lecture II (08 : 00 – 09 : 00) : Definition and Analysis of Hardware- and Software-Fault-Tolerant Architectures Dr. J.-C. Laprie, CNRS, France</p> <p>Plenary Lecture III (09 : 00 – 10 : 00) : Mechatronics: a Year 2001 Status Report Prof. M. Tomizuka, University of California, Berkeley, U.S.A.</p>						
ThA 10 : 10 to 12 : 10	Communication	Internet Based Control	Intelligent Control	Neural Network	PWM Techniques	Speech Recognition Technology and Applications	Industrial Applications II
13 : 10 to 14 : 10	<p>Invited Talk II : Control of Elevator Drive System Prof. Seung-Ki Sul, Seoul National University, Korea</p>						
ThM 14 : 20 to 16 : 20	Converters I	Inverters I	Control of Induction Motor Drives I	Synchronous, Reluctance, and DC-Motor Drives I	Language Engineering and Its Prospectives	Motion Control	Power Systems II
ThP 16 : 40 to 18 : 40	Converters II	Inverters II	Control of Induction Motor Drives II	Synchronous, Reluctance, and DC-Motor Drives II	Industrial Applications Based on Optimal Control	Control and Instrumentation for RTP	
	<p>Banquet (19 : 00 – 21 : 00)</p>						

ISIE 2001 FRIDAY SESSIONS (JUNE 15)

Track	1	2	3	4	5	6	7
Room	Grand I	Grand II	Grand III	Sydney I	Sydney II	Miami	Capri
08 : 00 to 10 : 00	Plenary Lecture IV (08 : 00 – 09 : 00) : Horizontal and Vertical Integration in Industrial Electronics Technologies Prof. H. Haneda, Kobe University, Japan Plenary Lecture V (09 : 00 – 10 : 00) : New Approaches to Information Aggregation: an Engineering Oriented Survey Prof. Imre. J. Rudas, Budapest Polytechnic, Hungary						
FrA 10 : 10 to 12 : 10	Neuro and Fuzzy Control I	Mechatronics II	Control Theory I	Power Devices and Components II	Electronic Commerce I	SRM and Drive I	Control and Automation I
13 : 10 to 14 : 10	Invited Talk III : Toward the Realization of MEMS Micro Coolers Dr. Sukhan Lee, Samsung Advanced Institute of Technology, Korea						
FrM 14 : 20 to 16 : 20	Neuro and Fuzzy Control II	Image and Signal Processing I	Control Theory II	Robotics	Electronic Commerce II	SRM and Drive II	Control and Automation II
FrP 16 : 40 to 18 : 40	Mechatronics I	Image and Signal Processing II	Power Devices and Components I	Mobile Robotics	Advances in Magnetic Disk Drive Technology	Application of Chaos	
	Farewell Party (19 : 00 – 20:00)						

ISIE 2001 WORKSHOP SCHEDULE (JUNE 12)

	Title	Speaker	Room
Workshop I (15:00–17:00)	Distributed Multi-Sensor Environment with Applications	Prof. M. Farooq Royal Military College of Canada Canada	Sydney I
Workshop II (15:00–17:00)	Genetic Algorithms: Concepts and Designs	Prof. S. Kwong, Prof. K. F. Man Prof. K. S. Tang City University of Hong Kong Hong Kong	Sydney II
Workshop III (15:00–17:00)	Variable Structure Systems Theory Based Training Strategies for Computationally Intelligent Systems	Prof. O. Kaynak Bogazici University Turkey	Miami

Advance Program

Grand I

WeP1

Power Systems I

Chair : C.-C. Hua, *National Yunlin Univ. of Sci. & Tech., Taiwan*

16:40 WeP1-01

Fully Digital Control of Distributed Photovoltaic Power Systems

C.-C. Hua, J.-R. Lin, *National Yunlin Univ. of Sci. & Tech., Taiwan*

17:00 WeP1-02

Method of Expanded Current Synchronous Detection for Active Power Filters Considering Three Phase Unbalanced Power System

Y.-G. Jung, *Daebul Univ., Korea*

Y.-C. Lim, W.-Y. Kim, J.-Y. Cho, *Chonnam National Univ., Korea*

17:20 WeP1-03

A Study on the Simulation Scheme for Utility Interactive PV Generation Systems

I.-K. Yu, B.-T. Kim, *Changwon National Univ., Korea*

M. Park, *Osaka Univ., Japan*

17:40 WeP1-04

A COTS-Based Dependable Excitation System Design for 500MW-Class Thermal Power Plants

S. Kwon, S. Kim, J. Lee, K. H. Kim, *Korea Electrotech. Research Inst., Korea*

18:00 WeP1-05

Network Stability Improvement by the Use of Solid State Static VAR Compensator

A. Draou, A. Tahri, M. Benganem, *Univ. of Sci. & Tech. of Oran, Algeria*

M. Ermis, *B.I.L.T.E.N Middle East Technical Univ., Turkey*

18:20 WeP1-06

A Stabilization of Frequency Oscillations Using Power Modulation Control of HVDC Link in an AC/DC Interconnected Power System

I. Ngamroo, *Sirindhorn International Inst. of Tech., Thailand*

A. Kunakorn, *King Mongkuk's Inst. of Tech. Ladkrabang, Thailand*

Grand II

WeP2

Electronic Lamp Ballast

Chair : C. S. Moo, *National Sun Yat-Sen Univ., Taiwan*

16:40 WeP2-01

A Novel Single-Stage High-Power-Factor Electronic Ballast with Symmetrical Topology

H. L. Cheng, C. S. Moo, W. M. Chen, *National Sun Yat-Sen Univ., Taiwan*

17:00 WeP2-02

An Electronic Ballast with Piezoelectric Transformer for Cold Cathode Fluorescent Lamps

C. S. Moo, *National Sun Yat-Sen Univ., Taiwan*

17:20 WeP2-03

Self-Oscillating Electronic Ballast Design Based on the Point of View of Control System

Á. R. Seidel, F. E. Bisogno, R. K. Pavão, R. N. d. Prado, *Universidade Federal de Santa Maria, Brazil*

17:40 WeP2-04

An Improved Arrangement of the Lamps in the Half-Bridge Topology

Á. R. Seidel, F. E. Bisogno, M. A. D. Costa, R. N. d. Prado, *Universidade Federal de Santa Maria, Brazil*

18:00 WeP2-05

Development of High Power Electronic Ballast for 250 Watts HPS Lamps

I.-W. Jeong, G.-H. Rim, H.-J. Lee, *Korea Electrotech. Research Inst., Korea*

18:20 WeP2-06

Electronic Ballast with Constant Power Output Controller for 250W MHD Lamp

C.-Y. Park, D.-Y. Jung, *Kangwon National Univ., Korea*

Grand III

WeP3

Nonlinear and Adaptive Control

Chair : N.-M. Kwok, *Hong Kong Inst. of Vocational Education, Hong Kong*

16:40 WeP3-01

Control of a Flexible Manipulator Using a Sliding Mode Controller with a Fuzzy-Like Weighting Factor

N.-M. Kwok, *Hong Kong Inst. of Vocational Education, Hong Kong*

17:00 WeP3-02

Synthesis of Discrete Time Adaptive Flight Control System Using Nonlinear Model Matching

Y. Osa, H. Hiraoka, *Kobe City College of Tech., Japan*

T. Mabuchi, *TRDI, Japan*

S. Uchikado, *Tokyo Denki Univ., Japan*

17:20 WeP3-03

Adaptive Control of Multi-Variables Nonlinear System Based on Artificial Neural Network

D. Gong, Y. Zhou, *China Univ. of Mining and Tech., China*

17:40 WeP3-04

Design of an Adaptive Tension/Velocity Controller for Winding Processes

K. Park, H. Kim, *Kookmin Univ., Korea*

J. H. Hwang, *Korea Inst. of Industrial Tech., Korea*

18:00 WeP3-05

A Technique for Exact Parameter Estimation of Impulse Magnetizer

P.-S. Kim, *Daelim College, Korea*

18:20 WeP3-06

Performance Enhancement of a Class of Nonlinear Nonminimum Phase Systems by Adaptive Observer

V. Kroumov, K. Shibayama, R. Sawae, *Okayama Univ. of Sci., Japan*

Sydney I

WeP4

Vision Systems

Chair : I.-S. Kweon, *KAIST, Korea*

- 16:40 WeP4-01
Fast Detection and Tracking of Repetitive Color Pattern Landmark
 K.-J. Yoon, I.-S. Kweon, *KAIST, Korea*
- 17:00 WeP4-02
Hydraulic System Design and Vehicle Dynamic Modeling for the Analysis and Development of Tire Roller
 J.-H. Kim, C.-S. Park, S.-G. Kim, J.-H. Kim, *Kookmin Univ., Korea*
- 17:20 WeP4-03
A Viewpoint-Dependent Autostereoscopic 3D Display Method
 K.-M. Huh, Y.-B. Park, *Dankook Univ., Korea*
- 17:40 WeP4-04
A High-Speed High-Resolution Vision System for the Inspection of TFT LCD
 J.-H. Kim, S. Ahn, J. W. Jeon, *Sung Kyun Kkwan Univ., Korea*
 J.-E. Byun, *Univ. of Suwon, Korea*
- 18:00 WeP4-05
A Moving Detectable Retina Model Considering the Mechanism of an Amacrine Cell for Vision
 J.-W. Lee, S.-P. Chae, M.-N. Kim, S.-Y. Kim, J.-H. Cho, *Kyungpook National Univ., Korea*
- 18:20 WeP4-06
Edge Representation and Recognition Using Neural Networks
 O. Kwon, C. Lee, *Yonsei Univ., Korea*

Sydney II

WeP5

Data Fusion and Data Mining

Chair : V. Torra

Organizer : V. Torra, *Inst. of Investigation on Intel-ligancy Artificial-CSIC Campus, Spain*

- 16:40 WeP5-01
Sensitivity Analysis for WOWA, OWA, and WM Operators
 V. Torra, *Inst. of Investigation on Intel-ligancy Artificial-CSIC Campus, Spain*
- 17:00 WeP5-02
Fuzzy Association Rules for Handling Continuous Attributes
 H. Ishibuchi, T. Nakashima, T. Yamamoto, *Osaka Prefecture Univ., Japan*
- 17:20 WeP5-03
Forecasting Local Region Data with Fuzzy Time Series
 C.-C. Tsai, S.-J. Wu, *National Tainan Teachers College, Taiwan*
- 17:40 WeP5-04
Discovering Association Strength among Brand Loyalties from Purchase History

Miami

WeP6

Factory Automation

Chair : S. Okuma, *Nagoya Univ., Japan*

- 16:40 WeP6-01
FMS Scheduling Based on Timed Petri Net Model –Minimization of Total Deadline Over-Time
 Y. W. Kim, T. Suzuki, S. Okuma, *Nagoya Univ., Japan*
 A. Inaba, *Gifu Prefectural Research Inst. of Manufacturing Information Tech., Japan*
- 17:00 WeP6-02
Control and Monitoring of Factory Automation System Using Fuzzy Petri Nets
 M.-G. Roh, S.-E. Hong, *Soonchunhyang Univ., Korea*
- 17:20 WeP6-03
Field Device Integration
 R. Simon, C. Diedrich, M. Riedl, M. Thron, *Institut für Automation und Kommunikation e. V., Germany.*
- 17:40 WeP6-04
An Efficient Bandwidth Allocation Scheme for Control Messages on Real-Time Control Systems Built upon the Dual Wireless LANs
 J. Lee, M. Kim, *Cheju National Univ., Korea*
- 18:00 WeP6-05
The Real Time Verification When Replacing DH Plus with DeviceNet for Tire Conveyor System
 O.-D. Park, *Kumho Industrial Co. Ltd., Korea*
 S.-K. Park, C.-B. Park, *Chosun Univ., Korea*
- 18:20 WeP6-06
Real-Time Inspection System for Printed Circuit Boards
 J.-Y. Pyun, K.-S. Choi, N.-H. Kim, B.-D. Choi, S.-J. Ko, *Korea Univ., Korea*

Capri

WeP7 (Poster Session)

Industrial Applications I

Chair : S. Kim, *Pusan National Univ., Korea*

- 16:40 WeP7-01
A Discrete Wavelet Monitoring of Plasma Impedance Matching for Process Control
 B. Kim, W. Choi, *Chonnam National Univ., Korea*
- 16:40 WeP7-02
Visual Tracking Using Snake Based on Target's Contour Information
 W. Kim, J.-J. Lee, *KAIST, Korea*
- 16:40 WeP7-03
Channel Simulator for Developing Interference Cancellation Signal Processing Techniques of the ICS-OAR
 J.-W. Kim, C.-H. Lee, *KM-Telecomm Inc., Korea*
 S.-J. Lee, *InnoAce Co. Ltd., Korea*

Volumetric Visualization Using Depth Information of Stereo Images

S. Lee, S. Yoon, Y. Cho, M. Lee, *Yonsei Univ., Korea*
J. Kim, *Shinheung College, Korea*

16:40 WeP7-29

A New Control Protocol for Home Appliances – LnCP

K.-S. Lee, H.-J. Choi, S.-M. Baek, *LG Electronics Inc., Korea*

16:40 WeP7-30

Objective Method for Assessment of Video Quality Using Wavelets

O. Kwon, C. Lee, *Yonsei Univ., Korea*

16:40 WeP7-31

Parallel Fuzzy Inference System for Large Volumes of Data on Parallel Computers

S. G. Lee, *Hannam Univ., Korea*

16:40 WeP7-32

Internet-Based Teleoperation Using Concurrent Bilateral Control

J.-W. Park, J.-M. Lee, *Pusan National Univ., Korea*

16:40 WeP7-33

Adapting the Migration Topology of Macro-Micro Evolutionary Algorithm by Clustering the Individuals Using Self-Organizing Map

S.-K. Oh, M.-S. Kim, J.-J. Lee, *KAIST, Korea*

16:40 WeP7-34

New Ternary Spreading Codes with Zero-Correlation Duration for Approximately Synchronized CDMA

J.-S. Cha, *Electronics and Telecommunications Research Inst., Korea*

K. Tsubouchi, *Tohoku Univ., Japan*

16:40 WeP7-35

Design and Implementation of Multi-Agent Environment for Internet Information Retrieval Service

B.-H. Lee, M.-S. Park, Y. Chung, H.-C. Kwon, *Pusan National Univ., Korea*

16:40 WeP7-36

Building Intelligent Systems for Mining Information Extraction Rules from Web Pages by Using Domain Knowledge

H. Seo, J. Yang, J. Choi, *Korea*

16:40 WeP7-37

Document Filtering Boosted by Unlabeled Data

S.-B. Park, B.-T. Zhang, *Seoul National Univ., Korea*

16:40 WeP7-38

Korean Part-of-Speech Tagging Based on Context Information among Eojeols

Y.-M. Ahn, Y.-H. Seo, *Chungbuk National Univ., Korea*

16:40 WeP7-39

Semantic Information for Word Sense Disambiguation

C.-H. Kim, J.-S. Kim, B.-Y. Kim, C.-Y. Ock, *Univ. of Ulsan, Korea*

16:40 WeP7-40

Intelligent Integration of Information on Internet for Traveler on Demand

S.-W. Jung, K.-Y. Kim, T.-W. Park, H.-C. Kwon, *Pusan National Univ., Korea*

Grand I

ThA1

Communication

Chair : J. H. Park, *Inha Univ., Korea*

10:10 ThA1-01

Design of the Train Network Simulator Based on Train Communication Network

C.-H. Cho, J.-D. Lee, J.-H. Lee, K.-H. Kim, Y.-J. Kim, *Korea Electrotech. Research Inst., Korea*

10:30 ThA1-02

A Control Strategy of Parallel Active Filters Using Extended p-q Theory and Quasi-Instantaneous Positive Sequence Extraction Method

M. T. Haque, S. H. Hosseini, T. Ise, *Tabriz Univ., Iran*

10:50 ThA1-03

Development of Multi-Channel Diagnostics System in TDX-Families Signal Service Equipment

M. S. Gi, Y. D. Hwan, *Semyung Univ., Korea*

11:10 ThA1-04

A Study on the Signal Anti-Reduction Equipment in Power Line Communication

J.-S. Ko, J.-H. Kim, *Wonkwang Univ., Korea*

11:30 ThA1-05

Modified MAC(Media Access Control) Protocol Design for the Acoustic-Based Underwater Digital Data Communication

J.-K. Yeo, H.-H. Lee, *Chungnam Univ., Korea*
Y.-K. Lim, *Korea Research Inst. of Ships and Ocean Engineering, Korea*

11:50 ThA1-06

Implementation of Industrial Controllers with Reducing Excessive OS Overhead

T. R. Park, W. H. Kwon, *Seoul National Univ., Korea*
J. H. Park, *Inha Univ., Korea*

Grand II

ThA2

Internet Based Control

Chair : K.-H. Cho, *Univ. of Ulsan, Korea*

10:10 ThA2-01

Centralised Access over TCP/IP Based on Real-Time Java VM

G. Andronico, S. Cavalieri, F. Colaianni, *Univ. of Catania, Italy*

10:30 ThA2-02

The Nuclear Plant Information System for Remote Users Based on the Web

S. J. Song, K. S. Jeong, I. K. Hwang, Y. S. Sim, *Korea Atomic Energy Research Inst., Korea*

10:50 ThA2-03

A New Consolidation Algorithm in Point-To-Multipoint ABR Services of ATM Networks for Industrial Applications

S.-W. Shin, K.-H. Cho, *Univ. of Ulsan, Korea*

- 11:10 ThA2-04
A Study about Contents Gathering and Delivery in Internet Portal Environment Using Messaging & XML
M.-H. Cho, S.-Y. Rhew, *Soongsil Univ., Korea*
- 11:30 ThA2-05
Update and Implementation of H.282 Remote Device Control Protocol for Multimedia Conference
D. S. Seong, *Kyonggi Univ., Korea*
- 11:50 ThA2-06
Web Based rSPC(Realtime Statistical Process Control) System Supporting XML Protocol
S. Han, *Chung-Ang Univ., Korea*

Grand III

ThA3

Intelligent Control

Chair : I. J. Rudas, *Banki Donat Polytechnic, Hungary*

- 10:10 ThA3-01
New Types of Aggregation Operators in Intelligent Systems: Absorbing Norms and Evolutinary Operators
I. J. Rudas, *Banki Donat Polytechnic, Hungary*
- 10:30 ThA3-02
Chaotic Analysis of Partial Discharge(CAPD) as a Novel Approach to Investigate Insulation Degradation Caused by the Various Defects
Y. Lim, J. Lee, W. Kang, J. Koo, J. Kim, Y. Chang, *Hanyang Univ., Korea*
- 10:50 ThA3-03
Adaptive Genetic Algorithm with a Cooperative Mode
M. Sugisaka, X. Fan, *Oita Univ., Japan*
- 11:10 ThA3-04
Reinforcement Learning Approach to Cooperation Problem in a Homogeneous Robot Group
K.-I. Kawakami, K. Ohkura, K. Ueda, *Kobe Univ., Japan*
- 11:30 ThA3-05
Formation Control Based on Artificial Intelligence for Multi-Agent Coordination
S.-W. Hong, S.-U. Shin, D.-S. Ahn, *Pukyong National Univ., Korea*
- 11:50 ThA3-06
Design of a Neuro-Fuzzy Controller for Speed Control Applied to DC Servo Motor
K. S. Hoon, K. L. Kyo, *Kon-Kuk Univ., Korea*

Sydney I

ThA4

Neural Network

Chair : S. H. Hosseini, *Tabriz Univ., Iran*

- 10:10 ThA4-01
Using Neural Networks with a Linear Output Neuron to Model

Plasma Etch Processes

- B. Kim, S. Park, W. Choi, H. Kim, S. Yang, *Chonnam National Univ., Korea*
- 10:30 ThA4-02
Research on Fast Training Algorithm for Recurrent Neural Network
D. Gong, S. Xu, *China Univ. of Mining and Tech., China*
- 10:50 ThA4-03
Blocking Artifacts Reduction Algorithm in Block Boundary Area Using Neural Network
K.-K. Kwon, S.-H. Lee, J.-W. Lee, S.-W. Ban, K.-N. Park, K.-I. Lee, *Kyungpook National Univ., Korea*
- 11:10 ThA4-04
PLD Implementation of Neural Network for Industrial Gas Discrimination System
U-T. Jang, S.-K. Choi, W.-Y. Chung, *Dongseo Univ., Korea*
- 11:30 ThA4-05
Neural Network Speed Controller For Induction Motor Based on Feedback Linearization
S. H. Hosseini, M. Banaei, *Tabriz Univ., Iran*
- 11:50 ThA4-06
Dynamic Neural Networks for Inverse Dynamics Based Control of Evaporator
V. Nanayakkara, Y. Ikegami, H. Uehara, *Saga Univ., Japan*

Sydney II

ThA5

PWM Techniques

Chair : K. Matsui, *Chubu Univ., Japan*

- 10:10 ThA5-01
Various Harmonic Characteristics of SVC Using NPC-PWM Inverter
R. Ishida, K. Matsui, *Chubu Univ., Japan*
- 10:30 ThA5-02
Application of Five Level PWM Inverter to SVC
S. Yamamoto, K. Matsui, *Chubu Univ., Japan*
- 10:50 ThA5-03
Analysis of Insulation Characteristics of PWM Inverier-Fed Induction Motors
D.-H. Hwang, D.-Y. Park, Y.-J. Kim, D.-H. Kim, J.-Y. Koo, I.-G. Hur, *Korea Electrotech. Research Inst., Korea*
- 11:10 ThA5-04
Time Domain Models for Calculating Transient Overvoltages in PWM Drives Using EMTDC
A. Kunakorn, *King Mongkut's Inst. ofTech. Ladkrabang, Thailand*
J. Hiley, K. S. Smith, *Heriot-Watt Univ., Scotland*
- 11:30 ThA5-05
An Overmodulation Strategy for SVPWM Inverter Using Offset Voltage
Y.-Y. Choi, S.-H. Kim, *Kangwon National Univ., Korea*
- 11:50 ThA5-06
A Study on the Four Parallel Operation of the Single Phase PWM

Converter Using the Fuzzy-Neural Controller
Y.-C. Kim, J.-H. Kim, H.-K. Yun, C.-Y. Won, *Sung Kyun Kwan Univ., Korea*

10:10 ThA7-04
Field and Thermal Modeling for Impulse Magnetizing Fixture Based on Exact Parameter Estimation
P. Kim, *Dealim College, Korea*

Miami

ThA6 Speech Recognition Technology and Applications

Chair : : S.-I. Yang, *Hanyang Univ., Korea*
Organizer : S.-I. Yang, *Hanyang Univ., Korea*

10:10 ThA6-01
Denoising on Wavelet Packets Domain for Robust Speech Recognition
S. Chang, Y. Kwon, S.-I. Yang, *Hanyang Univ., Korea*

10:30 ThA6-02
A Study on Wavelet Packet Threshold Selection for Speech Enhancement
I.-J. Kim, H.-S. Kim, K.-H. Koh, S.-I. Yang, Y. Kwon, *Hanyang Univ., Korea*

10:50 ThA6-03
New Speaker Recognition Feature Using Correlation Dimension
J. Seo, *Hanyang Univ., Korea*

11:10 ThA6-04
Realization of Speech Recognition Using DSP
H. Chin, *Hanyang Univ., Korea*

11:30 ThA6-05
Korean Speech Recognition of Large Vocabulary Based on Diphone Model
M. Kim, *Hanyang Univ., Korea*

11:50 ThA6-06
A Study on Speaker Adaptation of Large Vocabulary
B. Jeon, *Hanyang Univ., Korea*

Capri

ThA7 (Poster Session) Industrial Applications II

Chair : J.-W. Ahn, *Kyungsoong Univ., Korea*

10:10 ThA7-01
Measurement of Organic Compounds in Air Using Activated Carbon Coated Sensor
K. J. Choi, Y. H. Kim, *Dong-A Univ., Korea*

10:10 ThA7-02
Control Problem and Solution in the Steady State in the Strip Casting Process
Y. H. Kim, D. S. Lee, M. G. Joo, T. Kang, K. N. Paek, *Research Inst. of Industrial Sci. and Tech., Korea*

10:10 ThA7-03
A Novel Simulation Method for PV Generation Systems Using Real Weather Conditions
I.-K. Yu, B.-T. Kim, *Changwon National Univ., Korea*
M. Park, *Osaka Univ., Japan*

10:10 ThA7-05
Application of a Hydrophilic Fe-Co Magnetic Fluid to the Oil Seal of a Rotary Shaft
J. H. Lee, Y. S. Kim, *Dong-A Univ., Korea*

10:10 ThA7-06
A Harmonic Meter Using Phase Locked Loop
I. Yamamoto, K. Matsui, *Chubu Univ., Japan*

10:10 ThA7-07
Development of Online Impedance Meter to Measure the Impedance of Distribution Line
N. Ishigure, K. Matsui, *Chubu Univ., Japan*

10:10 ThA7-08
Time-Critical Data Transmission in the Foundation Fieldbus
S. H. Hong, B. D. Chang, *Hanyang Univ., Korea*

10:10 ThA7-09
Dynamic Behavior Control of Autonomous Mobile Robots Using Schema Co-evolutionary Algorithm
W.-B. Sim, H.-B. Chun, D.-W. Lee, *Chung-Ang Univ., Korea*

10:10 ThA7-10
Current Harmonics Elimination with a Series Hybrid Active Filter
B.-R. Lin, B.-R. Yang, *National Yunlin Univ. of Sci. and Tech., Taiwan*

10:10 ThA7-11
A Novel Channel Estimation Method for OFDM in High-Speed Mobile System
J.-P. Cho, *Electronics and Telecommunications Research Inst., Korea*,
H.-K. Baik, *Chonbuk National Univ., Korea*

10:10 ThA7-12
Design of Fuzzy Logic Controller for Firing Angle of TCSC Using Real-Type Tabu Search
W.-G. Kim, G.-H. Hwang, H. T. Kang, S.-O. Lee, J. H. Park, *Pusan National Univ., Korea*

10:10 ThA7-13
A Study on Maintaining Control of Tension for a Catenary's Cable
Y.-S. Lee, S.-I. Hong, *Pukyong National Univ., Korea*

10:10 ThA7-14
Ultra Shallow Junction Formation Using Excimer Laser Annealing for Ultra Small Devices
E. S. Jung, Y. J. Lee, *Donggeui Univ., Korea*
J. C. Bea, *Tohoku Univ., Japan*

10:10 ThA7-15
Implementation of Hardware and Software in the Electronic Cauterizer with the Moxa-Pad
B.-K. Jo, J.-I. Bae, J.-K. Kim, H.-Y. Kim, R.-Y. Choi, *Pukyong National Univ., Korea*
J.-K. Kim, M.-J. Kwon, M.-G. You, H.-J. Lee, T.-W. Kim, *Kijangmedical Co., Ltd., Korea*

- 10:10 ThA7-16
A Study on the Feedback System of Ultra Precision Positioning Apparatus Using Laser Interferometer
 J.-Y. Kim, H.-N. Lee, L.-K. Kwac, *Chosun Univ., Korea*
 I.-S. Kim, *Mokpo National Univ., Korea*
 D.-H. Kim, *Wonkwang Univ., Korea*
- 10:10 ThA7-17
Fuzzy Decision Support System to the Prediction of Ozone Concentrations
 S. Kim, J. Kim, *Pusan National Univ., Korea*
 C.-B. Lee, *Kangwon National Univ., Korea*
 M.-Y. Kim, *National Inst. of Environmental Research, Korea*
- 10:10 ThA7-18
Surface Profile Estimation Using a Profilometer and Digital Filtering
 Y.-J. Cho, *Pusan National Univ., Korea*
 Y.-P. Koo, *Pukyong National Univ., Korea*
- 10:10 ThA7-19
Real-time Tabu Search Algorithm for Function Optimization
 H.-S. Kim, *Pusan National Univ., Korea*
- 10:10 ThA7-20
Thermo-mechanical Behavior of Elastomer for CSP and Reliability
 T. Kim, D.-H. Lee, J.-K. Lee, P.-S. Ahn, B. U. Kang, H.-S. Moon, C.-H. Choi, *LG Cable Ltd., Korea*
- 10:10 ThA7-21
UV Characteristics of n-Type Porous Silicon-based Permeated Diaphragms
 C.-G. Kang, M.-S. Kang, J. H. Jin, N.-K. Min, *Korea Univ., Korea*
- 10:10 ThA7-22
Characteristics of Ag/AgCl Thin Film Reference Electrode in Urea Sensors
 J. H. Jin, S. H. Park, N.-K. Min, S.-I. Hong, *Korea Univ., Korea*
- 10:10 ThA7-23
The New Growing Formula of Porous Silicon Followed by Patterned Anode
 M. S. Kang, C.-G. Kang, H.-I. Kim, N.-K. Min, *Korea Univ., Korea*
- 10:10 ThA7-24
Measuring Concentration of CO₂ and O₂ on Porous Silicon by Permeating Membrane
 J.-H. Yang, C.-G. Kang, J. H. Jin, N.-K. Min, S. I. Hong, *Korea Univ., Korea*
- 10:10 ThA7-25
Collaborative Filtering with Automatic Rating for Recommendation
 M. Kwak, D.-S. Cho, *Ewha Womans Univ., Korea*
- 10:10 ThA7-26
New High Speed Dynamic D-Type Flip Flop for Prescaler
 W. Yun, S.-H. Yoon, J.-W. Chong, *Hanyang Univ., Korea*
- 10:10 ThA7-27
Position Sensorless Speed Control Scheme for Permanent Magnet Synchronous Motor Drives
 H.-W. Park, *Korea Naval Academy, Korea*
- S.-H. Lee, C.-U Kim, *Pusan National Univ., Korea*
 T.-H. Won, *Donggeui College, Korea*
 M.-S. Kim, *Donggeui Univ. Korea*
- 10:10 ThA7-28
Reference Frame Approach for Torque Ripple Minimization of BLDCM over Wide Speed Range Including Cogging Torque
 H.-W. Park, *Korea Naval Academy, Korea*
 Y.-W. Lee, *Donggeui Univ., Korea*
 S.-I. Hong, *Pukyong National Univ., Korea*
 C.-U. Kim, *Pusan National Univ., Korea*
- 10:10 ThA7-29
A Novel High Performance Position Sensorless Control of Switched Reluctance Motor Drives
 H.-W. Park, *Korea Naval Academy, Korea*
 C.-U. Kim, *Pusan National Univ., Korea*
- 10:10 ThA7-30
Algorithm for Tracking Multi-Objects Using Color Parameters
 C.-H. Shin, J.-S. Lee, *Chongju Univ., Korea*
- 10:10 ThA7-31
Measurement and Analysis of Optical Properties of Acupuncture Points and Channels
 S. M. Lee, G. Yoon, *Samsung Advanced Inst. of Tech., Korea*
 C. Choi, K.-S. Soh, *Seoul National Univ., Korea*
- 10:10 ThA7-32
The Design of Optimal Tumor Imitator for Microwave Radiometry Based on Physiological Properties
 J. Lee, S. Lee, K. Kim, S. Eoum, T. Kim, *Samsung Advanced Inst. of Tech., Korea*
- 10:10 ThA7-33
An Intelligent Power Module Implemented in 0.8 μ m High Voltage CMOS Process
 G. H. Song, S. B. Han, *Gyeongsang National Univ., Korea*
 E. D. Kim, S. C. Kim, N. K. Kim, W. Bahng, *Korea Electrotech. Research Inst., Korea*
- 10:10 ThA7-34
A Study on the Inverse Kinematic Analysis of the Casing Oscillator
 E. J. Rhee, M. K. Park, *Pusan National Univ., Korea*
 J. M. Bae, *Mannesmann Rexroth Korea Ltd., Korea*
 D. W. Joo, *Yongsan College, Korea*
- 10:10 ThA7-35
A Stabilized Snake Constraint for Tracking Object Boundaries
 D. J. Kang, J. Y. Kim, *Tongmyung Univ. of Information Tech., Korea*
 I. S. Kweon, *KAIST, Korea*
- 10:10 ThA7-36
Eddy Currents Modeling with the Consideration of the Magnetic Reynolds Number
 K. Lee, K. Park, *K-JIST, Korea*
- 10:10 ThA7-37
Modeling and Simulation of $\Sigma\Delta$ Frequency Synthesizers
 Y. Fan, *Philips Semiconductors, U.S.A.*
- 10:10 ThA7-38
A Study of ABS Control to Prevent Slip at Braking
 J.-H. Choi, J.-K. Lee, *Pusan National Univ., Korea*

S.-S. Kim, S.-Y. Yang, S.-T. Park, *Univ. of Ulsan, Korea*

10:10 ThA7-39
Stock Price Prediction Using Reinforcement Learning
J. W. Lee, *Sungshin Women's Univ., Korea*

10:10 ThA7-40
A Dependency Parsing Method for Head-Final Languages
S.-S. Kang, *Hansung Univ., Korea*

Grand I

ThM1 Converters I

Chair : E.-C. Nho, *Pukyong National Univ., Korea*

14:20 ThM1-01
Design of Soft-Switched Constant Frequency Quasi-Resonant Converter Fed Regulated Power Supply Using Matlab Simulink
G. Uma, S. Prabu, C. Chellamuthu, *Anna Univ., India*

14:40 ThM1-02
Bi-Directional AC/DC Converter Based on Neutral Point Clamped
B.-R. Lin, H.-R. Tsay, *National Yunlin Univ. of Sci. & Tech., Taiwan*

15:00 ThM1-03
Bifurcation in Parallel-Connected Buck Converters under a Democratic Sharing Scheme
H. H. C. Iu, C. K. Tse, *Hong Kong Polytech. Univ., Hong Kong*

15:20 ThM1-04
A High Efficiency Zero-Voltage-Transition AC-DC Boost Converter Using Combined Inductors and Energy Recovery Circuits
Y.-H. Kim, K.-S. Park, *Chung-Ang Univ., Korea*

15:40 ThM1-05
Modeling and Analysis of Interleaved Dual Boost Converter
M. Veerachary, T. Senjyu, K. Uezato, *Univ. of the Ryukyus, Japan*

16:00 ThM1-06
Adaptive Non-Linear State Feedback Controller for the Boost DC-to-DC Converter
H. Rodríguez, R. Ortega, *Supelec Plateau de Moulon, France*

Grand II

ThM2 Inverters I

Chair : B. Schmitt, *Siemens Ltd., Korea*

14:20 ThM2-01
Modular Structured Multilevel Inverter for High Power AC Power Supply Applications
N. A. Azli, A. H. M. Yatim, *Univ. Teknologi Malaysia, Malaysia*

14:40 ThM2-02
Dynamic Performance Study of an ASVC Using a Multi-Level Topology Inverter
A. Draou, M. Benghanem, A. Tahri, *Univ. of Sci. & Tech. of Oran, Turkey*

15:00 ThM2-03
A Generalized Undeland Snubber for Flying Capacitor Multilevel Inverter and Converter
I.-D. Kim, E.-C. Nho, C.-J. Joe, M.-S. Lee, *Pukyong National Univ., Korea*

15:20 ThM2-04
Dynamic Analysis of Hybrid Wind/Diesel System with Three-Level Inverter
F. M. A. Gahli

15:40 ThM2-05
Retrofit of Fixed Speed Induction Motors with Medium Voltage Drive Converters Using NPC Three-Level Inverter High-Voltage IGBTs Based Topology
B. Schmitt, *Siemens Ltd., Korea*

16:00 ThM2-06
A Study on Inverter and Motor Winding for Conducted EMI Prediction
Y. C. Kim, H. K. Yun, C. Y. Won, *Sung Kyun Kwan Univ., Korea*
Y. R. Kim, *Anyang Univ., Korea*
Y. S. Kim, *Inha Univ., Korea*
S. W. Choi, *Seoul National Univ., Korea*

Grand III

ThM3 Control of Induction Motor Drives I

Chair : C. Attaianesi, *Univ. of Cassino, Italy*

14:20 ThM3-01
A Low Cost Digital SVM Modulator with Dead Time Compensation
C. Attaianesi, D. Capraro, G. Tomasso, *Univ. of Cassino, Italy*

14:40 ThM3-02
Robustness, Simplification and Time-Consumption Reduction of Online-Trained ANN-Controller Fed IM-Servo Drives
F. I. Ahmed, A. M. Zaki, E. A. Ibrahim, *Cairo Univ., Egypt*

15:00 ThM3-03
An Induction Motor Position Control System with Direct Torque Control
M.-H. Kim, N.-H. Kim, M.-H. Kim, D.-H. Kim, *Yeungnam Univ., Korea*

15:20 ThM3-04
Improvement of Voltage Source PWM Converter in Induction Motor Drive System with Chopper
M. Tawada, K. Matsui, *Chubu Univ., Japan*

15:40 ThM3-05
Analysis of Three-Phase 12/8 Structure Switched Reluctance Motor Drive
H. Chen, D. Zhang, X. Meng, *China Univ. of Mining & Tech., China*

16:00 ThM3-06
Speed Control of an Induction Motor with Acceleration Feedforward Control
J.-W. Lee, S.-H. Kim, *Kangwon National Univ., Korea*

Sydney I

ThM4

Synchronous, Reluctance, and DC-Motor Drives I

Chair : J. Tang, *Alfred Univ., U.S.A.*

14:20 ThM4-01
PID Controller Using the TMS320C31 DSK with On-Line Parameter Adjustment Capability for Real-Time DC Motor Speed and Position Control
J. Tang, *Alfred Univ., U.S.A.*

14:40 ThM4-02
Energy Efficient Dual Mode Servo Drive for Battery Driven Vehicles Using Soft Switched Converters
G. Uma, N. Nagarajan, C. Chellamuthu, *Anna Univ., India*

15:00 ThM4-03
Analysis of a Novel Bi-Directional Rectifier with Double DC Bus Voltage
B.-R. Lin, Z.-L. Hung, *National Yunrin Univ. of Sci. & Tech., Taiwan*

15:20 ThM4-04
The Design of Pre-Compensator PIDA Controller for AC Induction Motor
Y. D. Lim, D. Y. Ha, Y. S. Cho, B. K. Choi, *Dong-A Univ., Korea*

15:40 ThM4-05
Novel Current Control Scheme with Deadbeat Algorithm for Three-Phase Current-Source Active Power Filter
K. Nishida, Y. Konishi, M. Nakaoka, *Yamaguchi Univ., Korea*

16:00 ThM4-06
Speed Control Method for Switched Reluctance Motor Drives Using Self-Tuning of Switching Angle
J.-Y. Seo, K.-H. Kim, *Chonnam National Univ., Korea*
D.-H. Jang, *Hoseo Univ., Korea*
H.-R. Cha, *Samsung Electronics Co. Ltd., Korea*

Sydney II

ThM5

Language Engineering and Its Prospectives

Chair : A. Yoon, *Pusan National Univ., Korea*

Organizer : A. Yoon, *Pusan National Univ., Korea*

14:20 ThM5-01
Translator's Workbench for Specific Purpose in Multi-User Network Environment
B. Han, *iTeamz Multi-Lingual Information Center, Korea*

14:40 ThM5-02
Development of a Domain-Specific Multilingual Terminology Lexicon Using DiET 2.5
A. Yoon, *Pusan National Univ., Korea*

15:00 ThM5-03
The Methods of Progress Efficiency of Morphosyntactical Analyzer for French Information Processing
L. Seo, *Paichai Univ., Korea*

15:20 ThM5-04

Categorization of Railroad-Related Terms toward Building Thesaurus

H. Kim, *Kyonggi Univ., Korea*

15:40 ThM5-05
Linguistic Database Handling Using XML in Web Environment
H. W. Jeong, A. Yoon, *Pusan National Univ., Korea*

Miami

ThM6

Motion Control

Chair : T. T. Nguyen, *Pukyong National Univ., Korea*

Organizer : T. T. Nguyen, *Pukyong National Univ., Korea*

14:20 ThM6-01
A Hybrid Control of Active Suspension System Using H_{∞} and Non-linear Adaptive Controls
T. T. Nguyen, T. H. Bui, S. B. Kim, *Pukyong National Univ., Korea*
T. P. Tran, *Hochiminh City Univ. of Tech., Vietnam*

14:40 ThM6-02
Development of High Speed Rotating Arc Sensor and Seam Tracking Controller for Welding Robots
S. K. Jeong, G. Y. Lee, S. B. Kim, *Pukyong National Univ., Korea*

15:00 ThM6-03
Motion Control of Two-Wheeled Welding Mobile Robot with Seam Tracking Sensor
B.-O. Kam, Y.-B. Jeon, S. B. Kim, *Pukyong National Univ., Korea*

15:20 ThM6-04
Seam Tracking and Welding Speed Control of Mobile Robot for Lattice Type Welding
Y.-B. Jeon, B.-O. Kam, S. B. Kim, *Pukyong National Univ., Korea*
S. S. Park, *Renault Samsung Motors Co. Ltd., Korea*

15:40 ThM6-05
Speed Control of PIG Using Bypass Flow in Natural Gas Pipeline
T. T. Nguyen, S. B. Kim, *Pukyong National Univ., Korea*
H. R. Yoo, Y. W. Rho, *Korea Gas Co., Korea*

16:00 ThM6-06
Fault Detection for Time-Delayed System by Using Robust Control Theory
H.-S. Kim, M.-K. Kim, *Korea Maritime Univ., Korea*

Capri

ThM7 (Poster Session)

Power Systems II

Chair : S.-K. Park, *Changwon Univ., Korea*

14:20 ThM7-01
A Universal Protection Circuit for Electronic Ballasts
T. F. Lin, C. S. Moo, *National Sun Yat-Sen Univ., Taiwan*
H. C. Yen, *Fortune Inst. of Tech., Taiwan*

14:20 ThM7-02
Detection of Acoustic Resonance in Metal Halide Lamps

- Y. C. Hsieh, C. S. Moo, H. W. Chen, *National Sun Yat-Sen Univ., Taiwan*
M. J. Soong, *Industrial Tech. Research Inst., Taiwan*
- 14:20 ThM7-03
An Series-Resonant Electronic Ballast for Rapid-Start Fluorescent Lamps with Programmable Starting
C. S. Moo, *National Sun Yat-Sen Univ., Taiwan*
- 14:20 ThM7-04
Characteristic Analysis of ZVS-HB Type High Frequency Resonant Inverter According to the Variable Capacitance of the DC Voltage Source Separation Capacitor
J.-S. Won, G.-P. Cho, D.-H. Kim, C.-C. Ro, *Yeungnam Univ., Korea*
J.-H. Kim, *Nagoya Univ., Japan*
D.-Y. Jung, *Samchok National Univ., Korea*
- 14:20 ThM7-05
An Analysis of the Backlight Inverter by Topology
G.-H. Kweon, Y.-C. Lim, *Chonnam National Univ., Korea*
S.-H. Yang, *Honam Univ., Korea*
- 14:20 ThM7-06
Direct Torque Control of Induction Motors Using Fuzzy Variable Switching Sector
J.-S. Ryu, I.-S. Yoon, K.-S. Lee, S.-C. Hong, *Dankook Univ., Korea*
- 14:20 ThM7-07
Development of Induction Motor-Generator Set for Traction System Combined Testing
G.-D. Kim, Y.-J. Han, H.-J. Park, *Korea Electrotech. Research Inst., Korea*
K.-H. Han, *Myongji Univ., Korea*
- 14:20 ThM7-08
An Analysis of the Field Induced Pressure on Electrostrictive Polymers
K. C. Park, J. W. Jeon, H. Choi, J.-D. Nam, H. Kim, H. Kim, *Sung Kyun Kwan Univ., Korea*
- 14:20 ThM7-09
Performance Analysis of Electronic Ballasts for Compact Fluorescent Lamp
M. A. D. Costa, Á. R. Seidel, F. E. Bisogno, R. N. d. Prado, *Universidade Federal de Santa Maria, Brazil*
- 14:20 ThM7-10
Dynamical Mathematical Model for Fluorescent Lamps
Á. R. Seidel, F. E. Bisogno, R. N. d. Prado, *Universidade Federal de Santa Maria, Brazil*
- 14:20 ThM7-11
Analysis on the Operation Characteristic of the Combined Electric Power Generation System by Photovoltaic and Wind Energy with Power Storage Apparatus
J.-Y. Lim, S.-A. Yoon, G.-J. Lee, Y.-S. Yoon, I.-S. Cha, *Dongshin Univ., Korea*
- 14:20 ThM7-12
A Novel Three Phase Diode Rectifier with Sinusoidal Input Current
K. Ohtsuka, K. Matsui, *Chubu Univ., Japan*
- 14:20 ThM7-13
Optimal Control of SVC for Subsynchronous Resonance Stability in Typical Power System
S. H. Hosseini, O. Mirshekar, *Tabriz Univ., Iran*
- 14:20 ThM7-14
A Novel High Performance Single-Phase 3-Level PWM Inverter for UPS
F.-S. Kang,
- 14:20 ThM7-15
Flame Image Processing & Analysis for Optimal Coal Firing of Thermal Power Plant
S. J. Lee, W. B. Baek, *Hanjung Heavy Industries, Korea*
- 14:20 ThM7-16
Implementation of FLC for Speed Control of a DC Servo Motor Using Real-Type Tabu Search
G.-H. Hwang, J. H. Park, D.-H. Lee, *Pusan National Univ., Korea*
D.-W. Kim, H.-J. Park, *Tongmyong College, Korea*
J. I. Woo, *Dong-A Univ., Korea*
- 14:20 ThM7-17
Development of Dynamic Behavior Simulation System for Power Plants, and Application to a Real HRSG Plant
T.-J. Lho, S.-H. Yoon, *Tongmyong Univ. of Information Tech., Korea*
- 14:20 ThM7-18
Single-Phase Power Factor Corrector with Neutral Point Switch Clamped Topology
B.-R. Lin, Z.-L. Hung, *National Yunlin Univ. of Sci. & Tech., Taiwan*
- 14:20 ThM7-19
A Simple Pulsed Nd:YAG Laser Power Supply Adopted ZCC Method
W.-Y. Kim, *Dongju College, Korea*
J.-H. Hong, H.-J. Kim, *Pusan National Univ., Korea*
- 14:20 ThM7-20
The Characteristics of New Piezoelectric Ballast for Fluorescent T8 Lamp
J. S. Lee, Y. H. Lee, H. I. Chai, M. S. Yoon, K. J. Lim, H. H. Kim, *Chungbuk National Univ., Korea*
- 14:20 ThM7-21
Simple Power Supply for a Pulsed CO₂ Laser with Long Pulse Duration of Millisecond Order
H.-J. Chung, D.-H. Lee, J.-H. Joung, S.-J. Park, Y.-S. Lee, H.-J. Kim, *Pusan National Univ., Korea*
- 14:20 ThM7-22
ASIC Design for DTC Based Speed Control of Induction Motor
S. J. Kim, H. J. Lee, S. K. Kim, Y. A. Kwon, *Pusan National Univ., Korea*
- 14:20 ThM7-23
Development of a Vibration Motor with Open Delta Windings Used for Mobile Telecommunication Devices
S.-U. Chung, S.-M. Hwang, S.-K. Jeong, C.-M. Kim, H.-J. Lee, *Pusan National Univ., Korea*
- 14:20 ThM7-24
Effect of Rotor Eccentricity on Spindle Vibration in Magnetically

Symmetric and Unsymmetric BLDC Motors

K.-T. Kim, S.-M. Hwang, T.-J. Kim, W.-B. Jeong, C.-U. Kim,
Pusan National Univ., Korea

14:20 ThM7-25

A Study on the Analysis of Galloping for Power Transmission Line

H.-S. Kim, G.-S. Byun, *Korea Maritime Univ., Korea*

14:20 ThM7-26

Variation of Force Density in BLDC Linear Motor on the Width of PM and Coil

J.-P. Hong, D.-H. Kang, *Korea Electrotech. Research Inst., Korea*
S.-W. Joo, S.-C. Hahn, *Dong-A Univ., Korea*

14:20 ThM7-27

A Novel Indirect Rotor Position Sensing for Brushless DC Motor Drivers

H.-W. Park, *Korea Naval Academy, Korea*
S.-J. Kwon, *Pukyong National Univ., Korea*
J.-G. Park, *Korea Maritime Univ., Korea*
C.-U. Kim, *Pusan National Univ., Korea*

14:20 ThM7-28

High Performance Drive of Single-Phase Induction Motor

K.-J. Lee, H.-G. Kim, *Kyungpook National Univ., Korea*
D.-K. Lee, *Kumi College, Korea*
T.-W. Chun, *Univ. of Ulsan, Korea*
E.-C. Nho, *Pukyong National Univ., Korea*

14:20 ThM7-29

Analysis of DC Link Ripple Currents in AC/DC/AC PWM Converts

Y.-W. Park, D.-C. Lee, *Yeungnam Univ., Korea*

14:20 ThM7-30

A Design of Transverse Flux Motor with Permanent Magnet Shield

Y. H. Jeong, D. H. Kang, J. M. Kim, *Korea Electrotech. Research Inst., Korea*
S. M. Jang, *Chungnam National Univ., Korea*

14:20 ThM7-31

Cooling System of Haenam-Jeju HVDC System

J.-S. Kwak, C.-K. Kim, B.-E. Koh, *Korea Electric Power Research Inst., Korea*

14:20 ThM7-32

Introduction of Haenam-Jeju HVDC System

B.-E. Koh, G.-J. Jung, *Korea Electric Power Research Inst., Korea*
I.-H. Moon, *Jeju District Head Office, Korea*
S.-K. Kim, *Kwangju T/O, Korea*

14:20 ThM7-33

A Novel Maximum Power Point Tracking Control for Photovoltaic Power System under Rapidly Changing Solar Radiation

T.-Y. Kim, H.-G. Ahn, S.-K. Park, *Changwon National Univ., Korea*

14:20 ThM7-34

New Hybrid PWM Converter Having APF Function

H.-S. Song, K. Nam, *POSTECH, Korea*

14:20 ThM7-35

A Study on the Simultaneous Control of Buck and Boost DC-DC Converter by Fuzzy Controller

H.-J. Kim, *Hanyang Univ., Korea*

H.-S. Park, *Hyundai Elevator Co. Ltd., Korea*

14:20 ThM7-36

Load Sharing Improvement in Parallel-Operated Lead Acid Batteries

H.-S. Ban, J.-M., Lee, H.-S. Mok, G.-H. Choe, *Kon-Kuk Univ., Korea*

14:20 ThM7-37

A 3-Phase Series Active Power Filter with Compensate Voltage Drop and Voltage Unbalance

S.-W. Han, S.-Y. Lee, G.-H. Choe, *Kyung Moon College, Korea*

14:20 ThM7-38

Rising Time Minimization of DC Voltage after Output Short-Circuit of a Boost Type Rectifier

E.-C. Nho, I.-D. Kim, C.-J. Joe, *Pukyong National Univ., Korea*
T.-W. Chun, *Univ. of Ulsan, Korea*
H.-G. Kim, *Kyungpook National Univ., Korea*

14:20 ThM7-39

Analysis of Torque Ripple in BLDC Motor with Commutation Time

B.-H. Kang, C.-J. Kim, H.-S. Mok, G.-H. Choe, *Kon-Kuk Univ., Korea*

14:20 ThM7-40

Analysis and Control of PWM Converter with V-I Output Characteristics of Solar Cell

J.-H. Yoo, J.-S. Gho, T.-G. Ryu, G.-H. Choe, *Kon-Kuk Univ., Korea*

Grand I

ThP1 Converters II

Chair : C. Bunlaksananusorn, *King Mongkut's Inst. of Tech. Ladkrabang, Thailand*

16:40 ThP1-01

Integrated Design of EMI and Passive Filters for Power Electronic Converters with PFC Circuit

C. S. Moo, H. C. Yen, *National Sun Yat-Sen Univ., Taiwan*
Y. C. Hsieh, *Kao-Yuan Inst. of Tech., Taiwan*
Y. C. Chuang, *Kung-Shan Inst. of Tech., Taiwan*

17:00 ThP1-02

Fault Detection and Isolation of Two DC-DC Converters Parallel Operation with Single CT

M.-J. Jung, S.-E. Park, S.-U. Oh, S.-J. Seong, *Chungnam National Univ., Korea*

17:20 ThP1-03

Signal Flow Graph Nonlinear Modeling Analysis of IDB Converter

M. Veerachary, T. Senjyu, K. Uezato, *Univ. of the Ryukyus, Japan*

17:40 ThP1-04

A New Generalized Direct Matrix Converter

S. H. Hosseini, E. Babaei, *Tabriz Univ., Iran*

18:00 ThP1-05

A New Direct DC to AC Matrix Converter

S. H. Hosseini, E. Babaei, *Tabriz Univ., Iran*

18:20 ThP1-06
Macromodel-Based Simulation of DC/DC Switching Regulators
C. Bunlaksananusorn, *King Mongkut's Inst. of Tech. Ladkrabang, Thailand*

Grand II

ThP2 Inverters II

Chair : M. El-Bakry, *Electronics Research Inst., Egypt*

16:40 ThP2-01
Implementing Pulse Angle Modulation Techniques for Inverters
M. El-Bakry, *Electronics Research Inst., Egypt*

17:00 ThP2-02
Modeling of an IGBT-Inverter with Neural Networks in Control Environment
K. Gulez, N. Mutoh, F. Harashima, K. Ohnishi, *Tokyo Metropolitan Inst. of Tech., Japan*

17:20 ThP2-03
Single Phase UPS Inverter with Variable Output Voltage and Digital State Feedback Control
H. Gueldner, H. Wolf, *Dresden Univ. of Tech., Germany*
N. Blacha, *AEG SVS Power Supply Systems GmbH, Germany*

17:40 ThP2-04
Disturbance Observer-Based Digital Control for Single-Phase UPS Inverters
J.-Y. Jang, K.-B. Lee, J.-H. Song, I. Choy, *Korea Inst. of Sci and Tech., Korea*

18:00 ThP2-05
Comparison between Two Inverter Topologies for Application in Industrial Drives
M. N. Eskander

18:20 ThP2-06
Three Phase Soft Switching Inverter with Pulse Current Transformer-Assisted Resonant Snubbers
C. Y. Inaba, E. Hiraki, M. Nakaoka, *Yamaguchi Univ., Japan*

Grand III

ThP3 Control of Induction Motor Drives II

Chair : F. F. M. El-Sousy, *Electronics Research Inst., Egypt*

16:40 ThP3-01
Design and Implementation of 2DOF I-PD Controller for Indirect Field Orientation Control Induction Machine Drive System
F. F. M. El-Sousy, *Electronics Research Inst., Egypt*

17:00 ThP3-02
Approach to Fuzzy Control of an Indirect Field-Oriented Induction Motor Drives
H. Lee, *Korea Electric Power Research Inst., Korea*
J. Lee, S. Seong, *Chungnam National Univ., Korea*

17:20 ThP3-03
Re-Adhesion Control for High-Speed Electric Railway with

Parallel Motor Control System

M.-S. Kim, D.-H. Hwang, H.-J. Ryoo, D.-Y. Park, Y.-J. Kim, *Korea Electrotech. Research Inst., Korea*
D.-H. Kim, *Yeungnam Univ., Korea*

17:40 ThP3-04
Passivity-Based Control for Phase-Locked Loop Induction Motor Drive

F. Xue, *Dongguan Electric Power Company, China*
J. Yang, J. Wu, *South China Univ. of Tech., China*
C. C. Chan, *Univ. of Hong Kong, Hong Kong*

18:00 ThP3-05
A Study on the Transient Behaviour of Induction Machines with the Help of Measurement Coils
T. M. Wolbank, R. Woehrschimmel, *Vienna Univ. of Tech., Austria*

18:20 ThP3-06
SPIM Speed Control by Cbwn Technique
V. Tipsuwanporn, C. Sompracha, *KMIT, Thailand*
P. Thepsatorn, *Srinakarinwirot Univ., Thailand*
A. Charean, W. Sawaengsinkasikit, *Kasem Bundit Univ., Thailand*

Sydney I

ThP4 Synchronous, Reluctance, and DC-Motor Drives II

Chair : H. Chen, *China Univ. of Mining & Tech., China*

16:40 ThP4-01
Speed Ripple Reduction of Permanent Magnet Synchronous Motor with Eccentric Load
J.-W. Park, D.-H. Koo, J.-M. Kim, *Korea Electrotech. Research Inst., Korea*
G.-H. Kang, *Changwon National Univ., Korea*
J.-B. Park, *LISTEM, Korea*

17:00 ThP4-02
The Switched Reluctance Motor Drive for Application in Electric Bicycle
H. Chen, J. Jiang, *China Univ. of Mining & Tech., China*

17:20 ThP4-03
A Robust Control of Permanent Magnet Synchronous Motor Using Load Torque Estimation
M.-S. Kim, D.-S. Song, Y.-K. Lee, H.-W. Park, *Korea Navy Academy, Korea*
T.-H. Won, *Donguei Inst. of Tech., Korea*
Y.-I. Jung, *Korea Electrical Safety Co., Korea*
M. H. Lee, *Pusan National Univ., Korea*

17:40 ThP4-04
A New Performance Estimation Method for a Switched Reluctance Motor without the Design Process of the Torque Controller
C. Choi, *K-JIST, Korea*
D. Lee, *Agency for Defense Development, Korea*
K. Park, *K-JIST, Korea*

18:00 ThP4-05
Characteristics Analysis of Axial Flux Type Reluctance Motor Using 2 and 3-Dimensional Finite Element Method
K.-H. Kim, Y.-H. Cho, *Dong-A Univ., Korea*

D.-H. Kang, Y.-H. Jeong, J.-M. Kim, *Korea Electrotech. Research Inst., Korea*

18:20 ThP4-06
Analysis and Design of Robust 2DOF Controller for Vector Controlled Permanent-Magnet Synchronous Machine Drive System

F. F. M. El-Sousy, *Electronics Research Inst., Egypt*

Sydney II

**ThP5
Industrial Applications Based on Optimal Control**

Chair : K. B. Kim, *Korea Univ., Korea*

Organizer : K. B. Kim, *Korea Univ., Korea*

16:40 ThP5-01
Game Optimal Receding Horizon Guidance Laws and Its Equivalence to Receding Horizon Guidance Laws

K. B. Kim, *Korea Univ., Korea*

17:00 ThP5-02
Driving Simulation of a Parallel Hybrid Electric Vehicle Using Receding Horizon Control

S.-I. Jeon, K.-B. Kim, S.-T. Jo, J.-M. Lee, *Seoul National Univ., Korea*

17:20 ThP5-03
Constrained Nonlinear Receding Horizon Control and Its Application to a Thrust Vectored Aircraft

Y. I. Lee, *Gyeongsang National Univ., Korea*

B. Kouvaritakis, M. Cannon, *Oxford Univ., U.K.*

17:40 ThP5-04
Normalized Iterative Feedback Tuning with PD-type Modified Feedback Experiment

S. Jo, S. W. Kim, *POSTECH, Korea*

18:00 ThP5-05
Guaranteed Cost LPV Output-Feedback Controller Design for the Nonlinear System

D. J. Choi, P. Park, *POSTECH, Korea*

Miami

**ThP6
Control and Instrumentation for RTP**

Chair : Y. I. Lee, *Gyeongsang National Univ., Korea*

Organizer : Y. I. Lee, *Gyeongsang National Univ., Korea*

16:40 ThP6-01
Temperature Control of a Rapid Thermal Processor Based on Receding Horizon Control

Y. I. Lee, J. S. Jang, *Gyeongsang National Univ., Korea*

17:00 ThP6-02
A Temperature Profile Following Control Scheme for Rapid Thermal Processing

S.-Y. Yun, J.-S. Lim, J. Lyou, *Chungnam National Univ., Korea*

17:20 ThP6-03

Numerical Analysis of 3-D, Unsteady, Heat and Flow in Rapid Thermal Processing

J. D. Chung, Y. M. Cho, J. S. Lee, *Seoul National Univ., Korea*

C.-H. Jung, Y.-J. Choi, K. Jung, *Kornic Systems Co., Korea*

17:40 ThP6-04
Optimal Design of a Rapid Thermal Processor via Physical Modeling and Convex Optimization

S. J. Kim, S. B. Kang, Y. M. Cho, S. Y. Hyun, J. D. Chung, J. S.

Lee, C. H. Jung, Y. J. Choi, K. R. Jung

18:00 ThP6-05
Nonparametric Adaptive Control of Wafer Temperature in RTP

J. Y. Choi, H. M. Do, H. S. Choi, *Seoul National Univ., Korea*

18:20 ThP6-06
Control of Wafer Temperature Uniformity in RTP Using an Optimal Iterative Learning Control Technique

H. J. Ahn, *Korea Univ. Korea*

S. R. Joo, *Kornic Systems Co., Korea*

K. S. Lee, *Sogang Univ., Korea*

Grand I

**FrA1
Neuro and Fuzzy Control I**

Chair : K. F. Man, *City Univ. of Hong Kong, Hong Kong*

10:10 FrA1-01
Gain-Scheduled Control of a Solar Power Plant Using a Hierarchical Moga-Tuned Fuzzy-PI Controller

R. Stirrup, D. Loebis, A. J. Chipperfield, *The Univ. of Sheffield, U.K.*

K. S. Tang, K. F. Man, *City Univ. of Hong Kong, Hong Kong*

10:30 FrA1-02
Design of a Fuzzy Controller Using Genetic Algorithms Employing Random Signal-Based Learning and Simulated Annealing

C.-W. Han, J.-I. Park, *Yeungnam Univ., Korea*

10:50 FrA1-03
The Application of ART Neural Network to Image Processing for Controlling a Mobile Vehicle

M. Sugisaka, F. Dai, *Oita Univ., Japan*

11:10 FrA1-04
Process Control by a CFCM-Based On-Line Adaptive Neuro-Fuzzy Inference System

K.-C. Kwak, J.-W. Ryu, *Chungbuk National Univ., Korea*

S.-S. Kim, *Woosuk Univ., Korea*

11:30 FrA1-05
Fuzzy Logic Control for the Contouring Accuracy of XY Positioning System

D.-J. Shin, U.-Y. Huh, *Inha Univ., Korea*

11:50 FrA1-06
Information Fusion Based Method for Fuzzy Controller Design

G. Feng, Q. Jianling, S. Xiliang, G. Changmao, *Navy Aeronautical Engineering Academy, China*

Grand II

FrA2

Mechatronics II

Chair : T. Mizuma, *Traffic Safety and Nuisance Research Inst., Japan*

10:10 FrA2-01
Development of Onboard Train Automatic Control System for Korean Standard EMU

S.-H. Han, S.-G. Lee, W.-K. Kim, *Korea Railroad Research Inst., Korea*

10:30 FrA2-02
A Study on the 3-DOF Attitude Control of Free-Flying Vehicle

D. Park, M.-S. Park, S.-K. Hong, *Ajou Univ., Korea*

10:50 FrA2-03
Swing-Up and Stabilization Control of a Two-Links Rotational Pendulum

D.-H. Yang, H.-C. Choi, K.-J. Yoo, S.-K. Hong, *Ajou Univ., Korea*

11:10 FrA2-04
Design and Implementation of HILS System for ABS ECU of Commercial Vehicle

J. M. Cho, D. H. Hwang, K. C. Lee, J. W. Joen, D. Y. Park, Y. J. Kim, *Korea Electrotech. Research Inst., Korea*
J. S. Joh, *Changwon National Univ., Korea*

11:30 FrA2-05
Safety Evaluation on Automatically Operation Bus System by ITS Technologies

T. Mizuma, *Traffic Safety and Nuisance Research Inst., Japan*
H. Nakamura, *Nihon Univ., Japan*

11:50 FrA2-06
Dynamic Performance Simulation of Diesel Engine for Underwater Vehicle

C. H. Jung, S. Y. Yang, *Naval Systems Development Center, Korea*

Grand III

FrA3 Control Theory I

Chair : D. Y. Lee, *KAIST, Korea*

10:10 FrA3-01
Design and Verification of Supervisory Controller of High-Speed Train

H. I. Son, S. P. Yoo, D. Y. Lee, *KAIST, Korea*

10:30 FrA3-02
Nonlinear Boiler Model of 300MW Power Unit for System Dynamic Performance Studies

C. Liu, J. Liu, Y. Niu, W. Liang, *North China Electric Power Univ., China*

10:50 FrA3-03
QFT Approach for the Track-Following Servo System of an Optical Disk Drive

J. R. Ryoo, M. J. Chung, *KAIST, Korea*

11:10 FrA3-04
Stability, Gain and Sampling Time of Discrete Time Acceleration Control Loop

I. Godler, K. Hashimoto, T. Ninomiya, *Kyushu Univ., Japan*

11:30 FrA3-05
A Robust Control of a Magnetic Suspension System with a Flexible Rail

J.-M. Kim, C.-K. Kim, M.-K. Park, K.-H. Kim, *Korea Electrotech. Research Inst., Korea*

11:50 FrA3-06
Application of Time-Delay-Control in Variable Structure Motion Control Systems

H. Morioka, M. Oka, A. Uchibori, *Ube National College of Tech., Japan*
K. Wada, *Yamaguchi Univ. Japan*
A. Sabanovic, *Turkey*

Sydney I

FrA4 Power Devices and Components II

Chair : M. M. R. Ahmed, *Univ. of Northumbria, U.K.*

10:10 FrA4-01
The Analysis about TCSC to Mitigate SSR

T.-K. Oh, Z.-Z. Mao, *Korea Electrotech. Research Inst., Korea*

10:30 FrA4-02
Improved Current Sharing between Varistors in Parallel

M. M. R. Ahmed, *Univ. of Northumbria, U.K.*

10:50 FrA4-03
Current Tunable CMOS Operational Transresistance Amplifier

V. Riewruja, J. Panklang, A. Julprapa, *King Mongkut's Inst. of Tech. Ladkrabang, Thailand*

11:10 FrA4-04
A Small Sized Lateral Trench Electrode IGBT Having Improved Latch-Up and Breakdown Characteristics for Power IC Industry

E. G. Kang, S. H. Moon, M. Y. Sung, *Korea Univ., Korea*

11:30 FrA4-05
Effect of MTTF and MTTR Statistical Uncertainty on Mission Dependability for Power Electronics Equipped Systems

V. Fazio, P. Firpo, S. Savio, *Univ. degli Studi di Genova, Italy*

11:50 FrA4-06
An Experimentally Validated Electro-Thermal Compact Model for 4H-Sic Power Diodes

R. Kolessar, H.-P. Nee, *Royal Inst. of Tech., Swiss*

Sydney II

FrA5 Electronic Commerce I

Chair : I.-Y. Lee, *Soonchunhyang Univ., Korea*

Organizer : I.-Y. Lee, *Soonchunhyang Univ., Korea*

10:10 FrA5-01
Intellectual Property Management of Digital Contents for Internet On-Line Commerce

S.-Y. Lim, H.-S. Ham, *Electronics and Telecommunications Research Inst., Korea*

T.-Y. Kim, <i>Korea Univ., Korea</i>	
10:30	FrA5-02
Information Hiding for Electronic Commerce	
H.-W. Lee, <i>Cheonan Univ., Korea</i>	
10:50	FrA5-03
An Anonymity Control Electronic Cash System with Divisible Using KCDSA	
S.-C. Jang, <i>Soonchunhyang Univ., Korea</i>	
11:10	FrA5-04
The Implementation of Electronic Money for M-Commerce Using Java Card	
I.-S. Hong, I.-G. Chun, <i>Soonchunhyang Univ., Korea</i>	
11:30	FrA5-05
ESES/j-Crypto and Its Application	
J.-Y. Lee, <i>Electronics and Telecommunications Research Inst., Korea</i>	
11:50	FrA5-06
Extracting Catalog Information from Semi-Structured Web Sources	
J.-S. Jung, D.-I. Oh, <i>Soonchunhyang Univ., Korea</i>	

Miami

FrA6	
SRM and Drive I	
Chair : J.-W. Ahn, <i>Kyungsung Univ., Korea</i>	
Organizer : J.-W. Ahn, <i>Kyungsung Univ., Korea</i>	
10:10	FrA6-01
Study on the Optimal Driving Condition of SRM Using GA-Neural Network	
S.-G. Oh, <i>Chinju National Univ., Korea</i>	
J.-W. Ahn, <i>Kyungsung Univ., Korea</i>	
Y.-J. Lee, M.-H. Lee, <i>Pusan National Univ., Korea</i>	
10:30	FrA6-02
The Converter with Single-Phase Half Bridge Inverter for the Switched Reluctance	
D. H. Jang, <i>Hoseo Univ., Korea</i>	
10:50	FrA6-03
A Super High Speed Single Phase SRM	
J. Lim, Y. Jung, S. Kim, <i>LG Electronics Inc., Korea</i>	
11:10	FrA6-04
Five-Level Inverter for Optimal Excitation of SRM Drive	
S.-H. Lee, C.-U. Kim, <i>Pusan National Univ., Korea</i>	
S.-G. Oh, <i>Chinju National Univ., Korea</i>	
S.-J. Park, <i>Tongmyung College, Korea</i>	
11:30	FrA6-05
Reduction of Vibration and Acoustic Noise of SRM with Hybrid Excitation Method	
J.-W. Moon, <i>Daeyang Electric, Korea</i>	
J.-W. Ahn, <i>Kyungsung Univ., Korea</i>	
N. Matsui, <i>Nagoya Inst. Tech., Japan</i>	
11:50	FrA6-06

2-Stage Commutated SRM with Auxiliary Winding
T.-U. Jung, <i>LG, Korea</i>
S.-T. Kim, <i>Agency for Tech. and Standards, Korea</i>
S.-J. Seong, <i>Chungman National Univ., Korea</i>
Y.-M. Hwang, <i>Pusan National Univ., Korea</i>

Capri

FrA7 (Poster Session)	
Control and Automation I	
Chair : Y. S. Suh, <i>Univ. of Ulsan, Korea</i>	
10:10	FrA7-01
The Concept for the Integration of Tele-Operated Unmanned Vehicle and Vehicle Driving Simulator	
D.-S. Yun, J.-H. Shim, M.-S. Kim, Y.-H. Park, J.-H. Kim, W.-S. Lee, <i>Kookmin Univ., Korea</i>	
10:10	FrA7-02
The Sensors Fusion Design and Performance Analysis of Unmanned Vehicle for the Tele-Operation System	
D.-S. Yun, J.-H. Shim, M.-S. Kim, Y.-H. Park, J.-H. Kim, <i>Kookmin Univ., Korea</i>	
10:10	FrA7-03
Design of PLCs for Automated Industrial Systems Based on Discrete Event Models	
B.-S. Kang, K.-H. Cho, <i>Univ. of Ulsan, Korea</i>	
10:10	FrA7-04
User-Friendly Automatic Polishing Robot System and Its Remote Operation Based on Network	
S. J. Go, <i>Dongueui Inst. of Tech., Korea</i>	
M. C. Lee, B. S. Kim, <i>Pusan National Univ., Korea</i>	
10:10	FrA7-05
H[∞] Steering Control System for the Unmanned Vehicle	
C. S. Kim, K. S. Park, W. G. Lee, M. H. Lee, <i>Pusan National Univ., Korea</i>	
H. C. Lee, <i>Yongsan College, Korea</i>	
J. W. Kim, <i>Dong-A Univ., Korea</i>	
J. I. Bae, <i>Pukyong National Univ., Korea</i>	
10:10	FrA7-06
NDE(Nondestructive Examination) by an Ultrasonic Sensor	
H. K. Kim, D. H. Lee, H. T. Ahn, M. H. Lee, <i>Pusan National Univ., Korea</i>	
W. S. Jeon, S. Y. Yang, <i>Agency for Defence Development, Korea</i>	
J. K. Kim, <i>Pukyong National Univ., Korea</i>	
10:10	FrA7-07
Tension Control System for Hot Strip Mills	
B. J. Ahn, S. H. Park, T. D. Yum, M. H. Lee, <i>Pusan National Univ., Korea</i>	
B. Y. Kim, <i>Jaeneung College, Korea</i>	
10:10	FrA7-08
Motion Analysis of a Mobile Robot with a Multi-Link Manipulator	
H. Y. Son, S. K. Ha, J. Y. Choi, K. S. Park, S. G. Jeong, Y. S. Cheon, M. H. Lee, <i>Pusan National Univ., Korea</i>	
Y. I. Park, <i>Agency for Defense Development, Korea</i>	
10:10	FrA7-09

- Measurement of Vehicle Motion-Variable Using Vanishing Point Analysis Technique**
T. H. Lee, S. K. Ha, J. Y. Choi, M. H. Lee, *Pusan National Univ., Korea*
H. M. Lee, *Metaltech, Korea*
K. S. Yoon, *Taegu Univ., Korea*
N. S. Hur, *Chinju National Univ., Korea*
J. I. Bae, *Pukyong National Univ., Korea*
- 10:10 FrA7-10
- Real-Time Lane Detection for Autonomous Vehicle**
S. G. Jeong, T. H. Lee, S. K. Ha, J. Y. Choi, D. H. Lee, M. H. Lee, *Pusan National Univ., Korea*
- 10:10 FrA7-11
- Lane Tracking Considering the Time-Delay of Vision Sensor**
S. J. Hong, J. Y. Choi, K. Y. Jeong, Y. I. Jeong, M. H. Lee, *Pusan National Univ., Korea*
K. S. Yoon, *Taegu Univ., Korea*
K. T. Park, *Korea Inst. of Machinery Materials, Korea*
N. S. Hur, *Chinju National Univ., Korea*
- 10:10 FrA7-12
- Observability of INS with a Multi-Antenna GPS System**
S. Hong, M. H. Lee, *Pusan National Univ., Korea*
J. A. Rios, J. L. Speyer, *Univ. of California, U.S.A.*
- 10:10 FrA7-13
- Development of Wireless Extension of Profibus for Hard Real-Time Requirement**
K. C. Lee, S. Lee, *Pusan National Univ., Korea*
- 10:10 FrA7-14
- Laminated Magnetic Flux Sensor for Thick Steel Plate Control**
K. H. Park, B. K. Kang, D. E. Kim, S. H. Jeong, *POSTECH, Korea*
- 10:10 FrA7-15
- Laying Control of a Submarine Cable**
S. Y. Yang, C. H. Jung, *Agency for Defense Development, Korea*
- 10:10 FrA7-16
- The Design of Sliding Mode Controller with Perturbation Observer for a 6-DOF Parallel Manipulator**
M. K. Park, M. C. Lee, S. J. Go, *Pusan National Univ., Korea*
- 10:10 FrA7-17
- Content-Based Image Retrieval Using Fuzzy Multiple Attribute Relational Graph**
S.-H. Jung, *Changwon National Univ., Korea*
- 10:10 FrA7-18
- Development of Real-Time Service Restoration System for Distribution Automation System**
K.-J. Mun, J. H. Park, H. S. Kim, J.-I. Seo, *Pusan National Univ., Korea*
- 10:10 FrA7-19
- A Teleoperation Position Control for 2-DOF Manipulators with Control Input Saturation**
S. H. Ahn, B. S. Park, J. S. Yoon, *Korea Atomic Energy Research Inst., Korea*
- 10:10 FrA7-20
- Harmonic Reduction of CO₂ Welding Machine Using Single-Switch, Three Phase Boost Converter with Sixth Order Harmonic Injected PWM**
J.-H. Lee, J.-H. Kim, C.-Y. Won, *Sung Kyun Kwan Univ., Korea*
S.-S. Kim, Y.-S. Kim, S.-W. Choi, *Inha Univ., Korea*
- 10:10 FrA7-21
- Collision-Free Path Planning for Mobile Robots Using Artificial Potential Field Approach with Simulated Annealing**
M. G. Park, J. H. Jeon, M. C. Lee, *Pusan National Univ., Korea*
- 10:10 FrA7-22
- Development of Multi-Axis Gantry Type Welding Robot System Using PC-Based Controller**
J.-H. Lee, J.-K. Kim, H.-S. Kim, I.-W. Park, *Hyundai Heavy Industries Co., Korea*
- 10:10 FrA7-23
- Run and Hit without Restriction: A Concurrency Control Scheme for Mobile Computing**
S. H. Cho, J.-H. Hwang, C.-S. Hwang, *Korea Univ., Korea*
K. Y. Bae, *Sangmyung Univ., Korea*
- 10:10 FrA7-24
- Hybrid Modeling and Control for a Platoon Maneuvers in Automated Highway Systems**
S. M. Jeon, J. W. Choi, *Pusan National Univ., Korea*
- 10:10 FrA7-25
- A Relative Navigation System for Vehicle Platooning Based on GPS**
M. J. Woo, J. W. Choi, *Pusan National Univ., Korea*
H. S. Han, *Kyungwon Univ., Korea*
- 10:10 FrA7-26
- A Powered Wheelchair Controller Based on Master-Slave Control Architecture**
H. M. Shim, J. P. Hong, S. B. Chung, S. H. Hong, *Inha Univ., Korea*
- 10:10 FrA7-27
- HiRAMBO: A New Hierarchical Representation Scheme for Planar Curves**
P. Ho, *Donggeui Inst. of Tech., Korea*
M. Kim, *Pusan National Univ., Korea*
- 10:10 FrA7-28
- High-Speed Tracking Algorithm of Moving Object**
Y.-S. Cho, *Keuk-Dong College, Korea*
J.-S. Lee, *Chongju Univ., Korea*
- 10:10 FrA7-29
- Performance Evaluation Technique for Control Algorithms of Underwater Vehicle Actuating System**
W. S. Jeon, H. J. Cho, S. S. Kim, *Agency for Defense Development, Korea*
M. H. Lee, *Pusan National Univ., Korea*
- 10:10 FrA7-30
- Minimum Time-Optimal Control of a Single-DOF Mechanical System under Actuator Constraints**
Y.-O Kim, I.-J. Ha, *Seoul National Univ., Korea*
- 10:10 FrA7-31
- A Study for AGV Steering Control and Identification Using Vision System**

J. W. Lee, S. U. Choi, C. H. Lee, K. S. Lee, *Dong-A Univ., Korea*
Y. J. Lee, D. H. Song, *Korea Aviation Polytech. College, Korea*

10:10 FrA7-32
Robust Model Reference Adaptive Control of Underactuated Robot Manipulators

M.-S. Kim, S.-K. Oh, J.-H. Shin, J.-J. Lee, *KAIST, Korea*

10:10 FrA7-33
Feature-Based Visual Servoing Control of Intelligent Robot System by Utilizing Redundant Feature

J. Lee, S. H. Han, *Kyungnam Univ., Korea*

M. H. Lee, *Pusan National Univ., Korea*

H. Hashimoto, *Inst. of Industrial Sci. Univ. of Tokyo, Japan*

10:10 FrA7-34
Development of Camera Tracking System Using a Self Tuning Regulator in Visual Feedback Control

D. Y. Jeong, J. Lee, S. H. Han, *Kyungnam Univ., Korea*

Y. K. Kim, *Univ. of Stuttgart, Germany*

10:10 FrA7-35
Fuzzy Logic Control of a Robot Manipulator Based on Visual Servoing

Ch. S. Kim, W. H. Seo, S. H. Han, *Kyungnam Univ., Korea*

O. Khatib, *Stanford Univ., U.S.A.*

10:10 FrA7-36
Image-Based Visual Feedback Control of a Dual-Arm Robot

Y. T. Kim, S. H. Han, H. S. Go, *Kyungnam Univ., Korea*

S. Ch. Fan, *Beijing Univ., China*

10:10 FrA7-37
Neural Network Control for Vision-Based Road Following of Autonomous Vehicle

D. Y. Jeong, S. H. Han, *Kyungnam Univ., Korea*

S. J. Park, *Tongmyong Univ. of Information Tech., Korea*

M. H. Lee, *Pusan National Univ., Korea*

T. Shibata, *Agency of Industrial Sci. and Tech. Ministry of International Trade and Industry, Japan*

10:10 FrA7-38
Study on the Estimation of Wheel State in Electrolytic In-Process Dressing (ELID) Grinding

H.-Y. Kim, J.-H. Ahn, Y.-H. Seo, *Pusan National Univ., Korea*

10:10 FrA7-39
Self-Localization of Mobile Robot with Single Camera in Corridor Environment

M. H. Kim, S. C. Lee, K. H. Lee, *Sogang Univ., Korea*

10:10 FrA7-40
Automatic TCXO Frequency-Temperature Test Chamber Using Thermoelectric Device Array

K.-S. Shin, W.-Y. Chung, *Dongseo Univ., Korea*

Grand I

FrM1

Neuro and Fuzzy Control II

Chair : J. B. Park, *Yonsei Univ., Korea*

14:20 FrM1-01
Digital Fuzzy-Model-Based Control of a Class of Nonlinear

Systems

W. Chang, J. B. Park, *Yonsei Univ., Korea*

Y. H. Joo, *Kunsan National Univ., Korea*

14:40 FrM1-02
An Approach to Anticontrol of Chaos for a Stable LTI System and a TS Fuzzy System

Z. Li, J. B. Park, *Yonsei Univ., Korea*

Y. H. Joo, *Kunsan National Univ., Korea*

15:00 FrM1-03
Fuzzy Intervention in PID Controller Design

W. Gharieb, *Ain Shams Univ., Egypt*

15:20 FrM1-04
Most and Less Similar Fuzzy Operators

A. Szakál, K. Lórinicz, *Budapest Polytech., Hungary*

15:40 FrM1-05
High-Precision Contour Control of Industrial Robot Arm by Neural Network Compensation with Learning Uncertainties

T. Zhang, *Saga Univ., Japan*

16:00 FrM1-06
Tuning of a PID Controller Using Immune Network Model and Fuzzy Set

D. H. Kim, *Taejon National Univ., Korea*

Grand II

FrM2

Image and Signal Processing I

Chair : H.-C. Kim, *Cheju National Univ., Korea*

14:20 FrM2-01
Image Processing Technique for Detection of a Particular Object from Motion Images

T. Sumimoto, *Okayama Univ., Japan*

K. Kuramoto, *Maritime Safety Academy, Japan*

S. Okada, H. Miyauchi, M. Imade, *Chugoku National Industrial Research Inst., Japan*

H. Yamamoto, *Okayama Univ., Japan*

Y. Arvelyna, *Tokyo Univ., Japan*

14:40 FrM2-02
Blocking Artifacts Reduction in Block-Coded Images Using Self-Similarity

K.-N. Park, K.-K. Kwon, S.-W. Ban, K.-I. Lee, *Kyungpook National Univ., Korea*

15:00 FrM2-03
Histogram Based Boundary Detection between Unvoiced Sound and Noise in Korean Speech

J.-I. Park, D.-G. Ha, O.-K. Shin, *Korea Maritime Univ., Korea*

15:20 FrM2-04
Electrical Impedance Tomography Reconstruction Algorithm Using Extended Kalman Filter

H.-C. Kim, K. Kim, Y. J. Lee, *Cheju National Univ., Korea*

15:40 FrM2-05
Speech Recognition Using the Metric Defined by Integri-Normalizer

S.-S. Kim, *Woosuk Univ., Korea*

D.-J. Lee, *Electric Safety Laboratory Research Inst., Korea*
J.-S. Kim, K.-C. Kwack, J.-W. Ryu, *Chungbuk National Univ., Korea*
S.-H. Lee, *Pusan National Univ., Korea*

16:00 FrM2-06
A Real-Time Face Recognition System Using Multiple Mean Faces and Dual Mode Fisherfaces
J. Choi, S. Lee, C. Lee, J. Yi, *Sung Kyun Kwan Univ., Korea*

Grand III

FrM3

Control Theory II

Chair : O.-K. Kwon, *Inha Univ., Korea*

14:20 FrM3-01
Variable Structure Systems in Control of Biochemical Processes
O. H. Dagci, *Ohio State Univ., U.S.A.*
M. O. Efe, *Carnegie Mellon Univ., U.S.A.*
O. Kaynak, *Bogazici Univ., Turkey*
X. Yu, *Central Queensland Univ., Australia*

14:40 FrM3-02
Frequency Domain Model and Stability Analysis of a Simple On-Line Trained Neuro-Controller
M. M. Salem, A. M. Zaki, *Electronics Research Inst., Egypt*
O. P. Malik, *The Univ. of Calgary, Canada*

15:00 FrM3-03
Decentralised Observer-Based Control Scheme for Interconnected Descriptor Systems with Unknown Inputs
T. K. Yeu, S. Kawaji, *Kumamoto Univ., Japan*

15:20 FrM3-04
Robust H_∞ FIR Filtering for Uncertain Nonlinear Time-Varying Systems
H.-S. Ryu, O.-K. Kwon, *Inha Univ., Korea*

15:40 FrM3-05
Power System Load Frequency Control Using Noise-Tolerable PID Feedback
Y.-H. Moon, H.-S. Ryu, J.-G. Lee, S. Kim, *Yonsei Univ., Korea*

16:00 FrM3-06
Fault Diagnosis and Fault Tolerant Control of DC Motor Driving System
J. H. Lee, *Agency for Defence Development, Korea*
J. Lyou, *Chungnam National Univ., Korea*

Sydney I

FrM4

Robotics

Chair : K. Tagawa, *Kobe Univ., Japan*

14:20 FrM4-01
Control of an Operator-Mobile Manipulator Coordination System
J. H. Chung, *Stevens Inst. of Tech., U.S.A*

14:40 FrM4-02
Robotic Endoscope with Pneumatic Actuator
B. Kim, K.-D. Kim, J. Park, J. Lee, *Korea Inst. of Sci. and Tech.,*

Korea
S.-H. Kim, *KAIST, Korea*
Y.-S. Hong, *Hankuk Aviation Univ., Korea*

15:00 FrM4-03
Optimal Resolution of Kinematical Redundancy for Endpoint Compliance
K. Tagawa, *Kobe Univ., Japan*

15:20 FrM4-04
Point-to-Point Control of Elastic Joint Robots - Dynamic Output Feedback Passification Approach
Y. I. Son, H. Shim, J. H. Seo, *Seoul National Univ., Korea*

15:40 FrM4-05
Development of Off-Line Programming System for Arc Welding Robot System in Shipbuilding
C.-W. Jung, J.-D. Kim, H.-S. Kim, *Hyundai Heavy Industries Co. Ltd., Korea*
K. Son, *Pusan National Univ., Korea*

16:00 FrM4-06
The Implementation of the Gaits and Body Structure for Hexapod Robot
B.-H. Lee, I.-K. Lee, *Semyung Univ., Korea*

Sydney II

FrM5

Electronic Commerce II

Chair : I.-Y. Lee, *Soonchunhyang Univ., Korea*
Organizer : I.-Y. Lee, *Soonchunhyang Univ., Korea*

14:20 FrM5-01
A Design of Middleware Component for Connection between XML and RDB
K.-S. Joo, *Soonchunhyang Univ., Korea*

14:40 FrM5-02
Mapping XML Documents on an Object-Relational Form
S.-H. Ha, *Soonchunhyang Univ., Korea*

15:00 FrM5-03
Intelligent Shopping Mall Agent Considering User's Preference
C.-H. Cho, *Korea Univ., Korea*

15:20 FrM5-04
An Implementation of Product Recommender System Using Java Expert System Library
I.-K. Chun, I.-S. Hong, *Soonchunhyang Univ., Korea*

15:40 FrM5-05
Information Gathering Mobile Agent
Y.-H. Kong, *Soonchunhyang Univ., Korea*

16:00 FrM5-06
M-Commerce Security Platform Based of WTLS and J2ME
N. J. Park, Y.-J. Song, *Dongguk Univ., Korea*

Miami

FrM6

SRM and Drive II

Chair : J.-W. Ahn, *Kyungsung Univ., Korea*

Organizer : J.-W. Ahn, *Kyungsung Univ., Korea*

14:20 FrM6-01
Novel Encoder for SRM Drive with High Resolution Switching Angle Control

S.-J. Park, *Tongmyung College, Korea*

J.-W. Ahn, *Kyungsung Univ., Korea*

M.-H. Lee, *Pusan National Univ., Korea*

T. A. Lipo, *Univ. of Wisconsin-Madison, U.S.A.*

14:40 FrM6-02
Unity Power Factor Drive of SRM with Single Stack

F.-S. Kang, C.-U. Kim, *Pusan National Univ., Korea*

S.-J. Park, *Tongmyung College, Korea*

H.-W. Park, *Korea Naval Academy, Korea*

S.-I. Hong, *Pukyung National Univ., China*

15:00 FrM6-03
Robustness Analysis of the Estimation of Rotor Position in SR Drive

J. Choi, J. Kim, K. Kim, H. Lee, Y. Hwang, S. Seung, *Chungnam National Univ., Korea*

15:20 FrM6-04
Advanced Torque Control of Switched Reluctance Motor

Y.-H. Kim, S. Kim, H.-S. Lyoo, J. Lee, *Hanyang Univ., Korea*

15:40 FrM6-05
Application Modified C-dump Converter for Industrial Low Voltage SRM

K.-D. Kim, D.-J. Shin, U.-Y. Huh, *Inha Univ., Korea*

Capri

FrM7 (Poster Session) Control and Automation II

Chair : H. Song, *Hongik Univ., Korea*

14:20 FrM7-01
A Simple UPFC Control Algorithm and Simulation on Stationary Reference Frame

D.-G. Cho, E.-H. Song, *Changwon National Univ., Korea*

14:20 FrM7-02
Design of Fuzzy Logic Controller for HVDC Using an Adaptive Evolutionary Algorithm

J.-G. Choi, G.-H. Hwang, H.-T. Kang, J. H. Park, *Pusan National Univ., Korea*

14:20 FrM7-03
Novel Model Following Sliding Mode Controller with Virtual State

S.-K. Park, I.-J. Ok, H.-K. Ahn, *Changwon National Univ., Korea*

14:20 FrM7-04
An Adaptive Control Method for Robot Manipulators Using Radial Basis Function Networks

Y.-K. Choi, M.-J. Lee, *Pusan National Univ., Korea*

14:20 FrM7-05
Design of Fuzzy-Model-Based Controller for Time-Varying Input-

Delayed TS Fuzzy Systems

H. J. Lee, J. B. Park, *Yonsei Univ., Korea*

Y. H. Joo, *Kunsan Univ., Korea*

14:20 FrM7-06
Speed Control of Fork Lift Vehicle Using a Genetic Algorithm

J. I. Bae, J. W. Park, H. S. Park, D. S. Ahn, *Pukyong National Univ., Korea*

M. H. Lee, *Pusan National Univ., Korea*

14:20 FrM7-07
Controller Design of Network-Based Reomte Control System Using Genetic Algorithm

K. C. Lee, S. Lee, *Pusan National Univ., Korea*

14:20 FrM7-08
A Design of Adaptive Neural Filter Banks with Filter Neuron

J.-W. Lee, W.-G. Jung, G.-K. Lee, *Gyeongsang National Univ., Korea*

14:20 FrM7-09
A Study on the Control Model Identification and H_∞ Controller Design for Tandem Cold Mills

I. S. Kim, Y. S. Chang, S. G. Jeong, K. Y. Jung, M. H. Lee, *Pusan National Univ., Korea*

14:20 FrM7-10
Mixed H₂/H_∞ Controller Design Considering Minimum Entropy

S.-H. Lee, *Pusan National Univ., Korea*

S.-S. Kim, *Woosuk Univ., Korea*

J.-S. Kim, *Chungbuk National Univ., Korea*

Y.-S. Jang, *LG Electronics Inc., Korea*

14:20 FrM7-11
A Frequency Domain Identification Method Using Total Least Squares

J.-S. Kim, *Chungbuk National Univ., Korea*

S.-S. Kim, *Woosuk Univ., Korea*

Y.-S. Jang, *LG Electronics Inc., Korea*

S.-H. Lee, *Pusan National Univ., Korea*

14:20 FrM7-12
Robust Sliding Mode Control of Linear Systems with Uncertainties

J.-H. Park, *Chungju National Univ., Korea*

S.-S. Kim, *Woosuk Univ., Korea*

S.-H. Lee, *Pusan National Univ., Korea*

D.-J. Lee, *Chungbuk National Univ., Korea*

14:20 FrM7-13
Parameter Optimization of Field Oriented Control System with 6 Sigma Tool

J.-S. Hwang, K.-H. Kim, Y.-T. Kim, S.-M. Kim, *LG Electronics Inc., Korea*

14:20 FrM7-14
New Approach to Real-Time Adaptive Learning Control of Neural Networks Based on Evolutionary Algorithm (I)

S.-O. Chang, J.-K. Lee, *Pusan National Univ., Korea*

14:20 FrM7-15
New Approach to Real-Time Adaptive Learning Control of Neural Networks Based on Evolutionary Algorithm (II)

S.-O. Chang, J.-K. Lee, *Pusan National Univ., Korea*

14:20 FrM7-16

Robust Adaptive Controller Using Universal Approximators for Nonlinear Systems under Input Constraint

J.-H. Park, G.-T. Park, *Korea Univ., Korea*

14:20 FrM7-17
A Steering Algorithm for the MCU Based Controller of Two-Wheeled Vehicles

J. P. Hong, H. M. Shim, S. B. Chung, S. H. Hong, *Inha Univ., Korea*

E. H. Lee, *Korea Polytech. Univ., Korea*

14:20 FrM7-18
Stochastic Stability with S-Eigenvalues in Stochastic Systems

Y. B. Seo, J. W. Choi, *Pusan National Univ., Korea*

D. H. Lee, *Kyungwon Univ., Korea*

14:20 FrM7-19
Reconfigurable Flight Control System Using Eigenstructure Assignment

S. W. Lee, J. W. Choi, *Pusan National Univ., Korea*

14:20 FrM7-20
Efficient Eigenvalue Assignment for Linear Time-Varying Systems

H. C. Lee, J. W. Choi, *Pusan National Univ., Korea*

14:20 FrM7-21
A Study on Gantry Crane Control Using Neural Network Two Degree of PID Controller

C. U. Choi, J. H. Shon, J. W. Lee, K. S. Lee, *Dong-A Univ., Korea*

Y. J. Lee, D. H. Song, *Korea Aviation Polytech. Univ., Korea*

14:20 FrM7-22
Precision Position Control of a Piezoelectric Actuator with Neural-Network Based Hysteresis Compensation

B.-R. Lee, S.-R. Hong, K.-K. Ahn, S.-Y. Yang, *Univ. of Ulsan, Korea*

14:20 FrM7-23
Controller Design for the Bilinear System

S.-H. Lee, K.-H. Hwang, J.-H. Park, *Pusan National Univ., Korea*

Y.-S. Jang, *LG Electronics Inc., Korea*

14:20 FrM7-24
Speciation Genetic Algorithm for Solving Shortest Path Problems

S. Kim, Y. Yoon, Y. Kim, *Pusan National Univ., Korea*

14:20 FrM7-25
Internal Model Control of Active Power Filter Using Resonance Model

J.-H. Park, D.-W. Kim, *Tongmyong College., Korea*

D.-R. Shin, J.-I. Woo, *Dong-A Univ., Korea*

H.-W. Lee, *Kyungnam Univ., Korea*

14:20 FrM7-26
Indoor Navigation of Mobile Robot

M.-W. Han, P. Kopacek, *Vienna Univ. of Tech., Austria*

14:20 FrM7-27
Precision Position Regulation of Shape Memory Alloy Wire Actuators

G. Song, *Univ. of Akron, U.S.A.*

14:20 FrM7-28
Evaluation of Internal Defects in Squirrel Cage Rotor by Novel Hall Sensor Technique

J.-H. Lee, S.-W. Choi, *Pusan National Univ., Korea*

M.-J. Park, *LG Production Engineering Research Center, Korea*

14:20 FrM7-29
An Inverse Filtering Technique for the Recursive Digital Filter Model

S.-J. Kim, *Tongmyoung Univ. of Information Tech., Korea*

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**FrP1
Mechatronics I**

Chair : M. Parnichkun, *Asian Inst. of Tech., Thailand*

16:40 FrP1-01
Development of a Force-Displacement Controlled Medical Tele-Analyzer

M. Parnichkun, W. Pongern, T. Jearsiripongkul, *Asian Inst. of Tech., Thailand*

17:00 FrP1-02
Skillful Adaptation of a 7-DOF Manipulator to Avoid Moving Obstacles in a Teleoperated Force Control Task

D. P. T. Nanayakkara, K. Kiguchi, T. Murakami, K. Watanabe, K. Izumi, *Saga Univ., Japan*

17:20 FrP1-03
A Study on Highlight Distribution for Underwater Simulated Target

B. I. Kim, H. U. Lee, M. H. Park, *Agency for Defense Development, Korea*

17:40 FrP1-04
Remote Monitoring Based Non Personal Computer with Electrocardiogram

J.-W. Lee, N.-H. Kim, S.-H. Hong, *Inha Univ., Korea*

18:00 FrP1-05
Dynamics of Dual-Drive Servo Mechanism

H.-K. Park, S.-S. Kim, J.-M. Park, D. Hong, *Korea Univ., Korea*

18:20 FrP1-06
Refrigerator System Modeling and Validation

Y. Ikegami, V. Nanayakkara, H. Uehara, *Saga Univ., Japan*
M. Nakashima, *Misawa Environmental Tech., Japan*

Grand II

**FrP2
Image and Signal Processing II**

Chair : D.-S. Kim, *Kyungpook National Univ., Korea*

16:40 FrP2-01
On the Application of Speaker Verification to Electronic-Commerce

J. M. Sung, J. G. Kim, H. Y. Hur, M. G. Song, H. S. Kim, *Pusan National Univ., Korea*

17:00 FrP2-02
A Study on the Coherent Frequency Hopping Technique Using FFT

K. Lee, C. Kim, *Yonsei Univ., Korea*

K. Shin, J. Seo, *Agency for Defense Development, Korea*

17:20 FrP2-03
A Study on the Robustness of Watermark According to Frequency Band
K.-H. Bae, S.-H. Jung, *Changwon National Univ., Korea*

17:40 FrP2-04
Automatic Car License Plate Extraction Using Modified Generalized Symmetry Transform and Image Warping
D.-S. Kim, S.-I. Chien, *Kyungpook National Univ., Korea*

18:00 FrP2-05
A Study on Roughness Measurement of Machined Surfaces Using Reflected Laser Beam Image
Y. F. Shen, H. Y. Kim, J. H. Ahn, *Pusan National Univ., Korea*

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FrP3 Power Devices and Components I

Chair : W. Sonphao, *KMITL, Thailand*

16:40 FrP3-01
Use of Multi-Functional Sensing for the Measurement of Electrolytic Concentration in Solution with Higher Accuracy
A. B. Md. Ismail, S. R. Khan, *Rajshahi Univ., Bangladesh*
K. Shida, *Saga Univ., Japan*

17:00 FrP3-02
A Series-Shunt Compensator with Comined UPS Operation
A. D. le Roux, H. du T. Mouton, *Univ. of Stellenbosch, South Africa*

17:20 FrP3-03
Stationary Reference Frame-Based Simple Active Power Filter with Voltage Regulation
J.-H. Cho, D.-G. Cho, E.-H. Song, *Changwon National Univ., Korea*

17:40 FrP3-04
Silicon Anisotropic Etching of TMAH Solution
W. Sonphao, *KMITL, Thailand*

18:00 FrP3-05
Evaluation System of Physical Exercise Ability Using Bio-Electrical Impedance
T. Nakamura, *Japan*

18:20 FrP3-06
Lateral Trench IGBT with Effective p+ Diverter Having Superior Electrical Characteristics for Smart Power IC
E. G. Kang, S. H. Moon, M. Y. Sung, *Korea Univ., Korea*

Sydney I

FrP4 Mobile Robotics

Chair : D.-S. Ahn, *Pukyong National Univ., Korea*

16:40 FrP4-01
The Design of Auto Guided Vehicle System(AGVS)
H. J. Kim, S. C. Kim, Y. D. Lim, *Dong-A Univ., Korea*

17:00 FrP4-02

Robust Control for Dynamic Walking of Biped Robot with Ground Contacting Condition
J.-G. Kim, I.-G. Park, *Inha Univ., Korea*

17:20 FrP4-03
Optimal Tracking Control of a Nonholonomic Mobile Robot
K. H. Park, S. B. Cho, Y. W. Lee, *Dongeeui Univ., Korea*

17:40 FrP4-04
Force Guided Tracking Control for the Blind Mobile Robot
S. Jung, P.-W. Jeon, *Chungnam National University*

18:00 FrP4-05
Interacting Mobile Robots for Tele-Operation System Using the World Wide Web
K.-S. Park, J.-I. Bae, D.-S. Ahn, *Pukyong National Univ., Korea*

18:20 FrP4-06
Complete Coverage Navigation of Clean Robot Based on Triangular Cell Map
J. Seop, J. B. Park, Y. H. Choi, *Yonsei Univ., Korea*

Sydney II

FrP5 Advances in Magnetic Disk Drive Technology

Chair : S.-H. Lee, *Samsung Advanced Inst. of Tech., Korea*

Organizer : S.-H. Lee, *Samsung Advanced Inst. of Tech., Korea*

16:40 FrP5-01
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Y. H. Im, E. Kim, Y. Kim, *Samsung Advanced Inst. of Tech., Korea*
G. S. Park, *Korea Maritime Unvi., Korea*

17:00 FrP5-02
Optimal Shape Design for Electrodes of a Rotary Microactuator
S. Jung, J.-J. Choi, C. Lee, J. Park, D. Min, C. Kim, J. U. Jeon, *Samsung Advanced Inst. of Tech., Korea*

17:20 FrP5-03
A Dual-Stage Control Algorithm Based on Coarse Actuator Motion Preview
Y.-H. Kim, S.-H. Lee, *Samsung Advanced Inst. of Tech., Korea*

17:40 FrP5-04
Comparative Design of Dual-Stage Actuator Control Systems for Hard Disk Drives
S.-H. Lee, Y.-H. Kim, *Samsung Advanced Inst. of Tech., Korea*

18:00 FrP5-05
Offset Compensation of Capacitive Sensors for Electrostatic Microactuators
D.-K. Min, J. U. Jeon, *Samsung Advanced Inst. of Tech., Korea*

18:20 FrP5-06
Identification of Disturbances in HDD Track Following Servo System Using PES Only
C. H. Park, *Samsung Electronics Co. Ltd., Korea*

Miami

FrP6

Application of Chaos

Chair : I. Nagy

Organizer : I. Nagy, *Technical Univ. of Tech. and Economics Budapest, Hungary*

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The Application of Chaos in Power Electronics and Electrical Drives

C. K. Tse, *Hong Kong Polytech. Univ., Hong Kong*

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Exact Orbital Stability Analysis of Static and Dynamic Ramp Compensations in DC-DC Converters

C.-C. Fang, *Taiwan Semiconductor Manufacturing Co., Taiwan*

17:20

FrP6-03

Quasiperiodic Route to Chaos in DC-DC Converters

A. E. Aroudi, M. B. M. Debat, L. M. Salameero, *Rovira i Virgili Univ., Spain*

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FrP6-04

Aperiodic and Chaotic Dynamics in a Hybrid Step Motor-New Experimental Results

F. Alin, B. Robet, C. Goeldel, *Univ. de reims Champagne-Ardenne, France*

18:00

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Stability Analysis of Feedback Controlled Resonant DC-DC Converter Using Poincare Map Function

I. Nagy, *Technical Univ. of Tech. and Economics Budapest, Hungary*

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Jung, G.-J.	ThM7-32	Kim, B.-Y.	WeP7-39
Jung, J.-S.	FrA5-06	Kim, C.	FrP2-02
Jung, K.	ThP6-03	Kim, C.	FrP5-02
Jung, K. R.	ThP6-04	Kim, C. S.	FrA7-05
Jung, K. Y.	FrM7-09	Kim, C. Y.	WeP7-15
Jung, M.-J.	ThP1-02	Kim, C.-H.	WeP7-39
Jung, S.	FrP4-04	Kim, C.-J.	ThM7-39
Jung, S.	FrP5-02	Kim, C.-K.	ThM7-31
Jung, S.-H.	WeP7-24	Kim, C.-K.	FrA3-05
	FrA7-17	Kim, C.-M.	ThM7-23
	FrP2-03	Kim, C.-U.	ThA7-27
Jung, S.-W.	WeP7-40		ThA7-28
Jung, T.-U.	FrA6-06		ThA7-29
Jung, W.-G.	FrM7-08		ThM7-24
Jung, Y.	FrA6-03		ThM7-27
Jung, Y.-G.	WeP1-02		FrA6-04
Jung, Y.-I.	ThP4-03		FrM6-02
Kam, B.-O.	ThM6-03	Kim, Ch. S.	FrA7-35
	ThM6-04	Kim, D. E.	FrA7-14
Kang, B. K.	FrA7-14	Kim, D. H.	FrM1-06
Kang, B. U.	ThA7-20	Kim, D.-H.	ThA5-03

Kim, D.-H.	ThA7-16	Kim, J.-H.	ThM7-04
Kim, D.-H.	ThM3-03	Kim, J.-H.	FrA7-01
	ThM7-04		FrA7-02
	ThP3-03	Kim, J.-K.	ThA7-15
Kim, D.-S.	FrP2-C	Kim, J.-K.	ThA7-15
	FrP2-04	Kim, J.-K.	FrA7-22
Kim, D.-W.	ThM7-16	Kim, J.-M.	ThP4-01
	FrM7-25		ThP4-05
Kim, E.	FrP5-01		FrA3-05
Kim, E. D.	ThA7-33	Kim, J.-S.	WeP7-39
Kim, G.-D.	ThM7-07	Kim, J.-S.	FrM2-05
Kim, H.	WeP3-04		FrM7-10
Kim, H.	ThA4-01		FrM7-11
Kim, H.	ThM5-04	Kim, J.-W.	WeP7-03
Kim, H.	ThM7-08	Kim, J.-Y.	ThA7-16
Kim, H.	ThM7-08	Kim, K.	ThA7-32
Kim, H. H.	ThM7-20	Kim, K.	FrM2-04
Kim, H. J.	FrP4-01	Kim, K.	FrM6-04
Kim, H. K.	FrA7-06	Kim, K. B.	ThP5-C
Kim, H. S.	FrA7-18		ThP5-O
	FrP2-01		ThP5-01
Kim, H. Y.	FrP2-05	Kim, K. H.	WeP1-04
Kim, H.-C.	FrM2-C	Kim, K.-B.	ThP5-02
	FrM2-04	Kim, K.-D.	FrM4-02
Kim, H.-G.	ThM7-28	Kim, K.-D.	FrM6-05
	ThM7-38	Kim, K.-H.	ThA1-01
Kim, H.-I.	ThA7-23		FrA3-05
Kim, H.-J.	WeP7-04	Kim, K.-H.	ThM4-06
Kim, H.-J.	ThM7-19	Kim, K.-H.	ThP4-05
	ThM7-21	Kim, K.-H.	FrM7-13
Kim, H.-J.	ThM7-35	Kim, K.-T.	ThM7-24
Kim, H.-S.	ThA6-02	Kim, K.-Y.	WeP7-40
Kim, H.-S.	ThA7-19	Kim, M.	WeP6-04
Kim, H.-S.	ThM6-06	Kim, M.	ThA6-05
	ThM7-25	Kim, M.	FrA7-27
Kim, H.-S.	FrA7-22	Kim, M. H.	FrA7-39
	FrM4-05	Kim, M.-H.	ThM3-03
Kim, H.-Y.	ThA7-15	Kim, M.-H.	ThM3-03
Kim, H.-Y.	FrA7-38	Kim, M.-K.	ThM6-06
Kim, I.	WeP7-13	Kim, M.-N.	WeP4-05
Kim, I. S.	FrM7-09		WeP7-05
Kim, I.-D.	ThM2-03	Kim, M.-S.	WeP7-33
	ThM7-38		FrA7-32
Kim, I.-S.	ThA7-16	Kim, M.-S.	ThA7-27
Kim, I-J.	ThA6-02	Kim, M.-S.	ThP3-03
Kim, J.	WeP7-26	Kim, M.-S.	ThP4-03
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	WeP7-28		FrA7-02
Kim, J.	WeP7-27	Kim, M.-Y.	ThA7-17
Kim, J.	ThA3-02	Kim, N. K.	ThA7-33
Kim, J.	ThA7-17	Kim, N.-H.	WeP6-06
Kim, J. G.	FrP2-01	Kim, N.-H.	ThM3-03
Kim, J. K.	WeP7-15	Kim, N.-H.	FrP1-04
Kim, J. K.	FrA7-06	Kim, P.	ThA7-04
Kim, J. M.	ThM7-30	Kim, P.-S.	WeP3-05
Kim, J. W.	FrA7-05	Kim, S.	WeP1-04
Kim, J. Y.	ThA7-35	Kim, S.	WeP7-C
Kim, J.-D.	FrM4-05		ThA7-17
Kim, J.-G.	FrP4-02		FrM7-24
Kim, J.-H.	WeP4-02	Kim, S.	ThM4-05
Kim, J.-H.	WeP4-02		FrM6-04
Kim, J.-H.	WeP4-04	Kim, S.	FrA6-03
	ThA5-06	Kim, S.	FrM3-05
	FrA7-20	Kim, S. B.	ThM6-01
Kim, J.-H.	ThA1-04		ThM6-02

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Kim, S. C.	ThA7-33	Kolessar, R.	FrA4-06
Kim, S. C.	FrP4-01	Kong, Y.-H.	FrM5-05
Kim, S. H.	WeP7-10	Konishi, Y.	ThM4-05
Kim, S. J.	ThM7-22	Koo, D.-H.	ThP4-01
Kim, S. J.	ThP6-04	Koo, J.	ThA3-02
Kim, S. K.	ThM7-22	Koo, J.-Y.	ThA5-03
Kim, S. S.	FrA7-29	Koo, Y.-P.	ThA7-18
Kim, S. W.	ThP5-04	Kopacek, P.	FrM7-26
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Kim, S.-H.	ThA5-05	Kroumov, V.	WeP3-06
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Kim, S.-H.	FrM7-29	Kuramoto, K.	FrM2-01
Kim, S.-J.	ThM7-32	Kwac, L.-K.	ThA7-16
Kim, S.-K.	ThM7-32	Kwack, K.-C.	FrM2-05
Kim, S.-M.	FrM7-13	Kwak, J.-S.	ThM7-31
Kim, S.-S.	ThA7-38	Kwak, K.-C.	FrA1-04
Kim, S.-S.	FrA1-04	Kwak, M.	ThA7-25
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Kim, S.-S.	FrA7-20	Kwok, N.-M.	WeP3-C
Kim, S.-S.	FrP1-05	WeP3-01
Kim, S.-T.	FrA6-06	Kwon, H.-C.	WeP7-17
Kim, S.-Y.	WeP4-05	WeP7-35
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Kim, T.	ThA7-20	Kwon, K.-K.	ThA4-03
Kim, T.	ThA7-32	FrM2-02
Kim, T.-J.	ThM7-24	Kwon, K.-R.	WeP7-08
Kim, T.-W.	ThA7-15	Kwon, M.-J.	ThA7-15
Kim, T.-Y.	ThM7-33	Kwon, O.	WeP4-06
Kim, T.-Y.	FrA5-01	WeP7-30
Kim, W.	WeP7-02	Kwon, O.-K.	FrM3-C
Kim, W. Y.	ThM7-19	FrM3-04
Kim, W.-G.	ThA7-12	Kwon, S.	WeP1-04
Kim, W.-K.	FrA2-01	Kwon, S.-G.	WeP7-08
Kim, W.-Y.	WeP1-02	Kwon, S.-J.	ThM7-27
Kim, Y.	FrM7-24	Kwon, S.-K.	WeP7-04
Kim, Y.	FrP5-01	Kwon, W. H.	ThA1-06
Kim, Y. C.	ThM2-06	Kwon, Y.	ThA6-01
Kim, Y. H.	ThA7-01	ThA6-02
Kim, Y. H.	ThA7-02	Kwon, Y. A.	ThM7-22
Kim, Y. J.	FrA2-04	Kyo, K. L.	ThA3-06
Kim, Y. K.	FrA7-34	Lee, B.	WeP7-14
Kim, Y. R.	ThM2-06	Lee, B.-H.	WeP7-17
Kim, Y. S.	ThA7-05	WeP7-35
Kim, Y. S.	ThM2-06	Lee, B.-H.	FrM4-06
Kim, Y. T.	FrA7-36	Lee, B.-R.	FrM7-22
Kim, Y. W.	WeP6-01	Lee, C.	WeP4-06
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Kim, Y.-J.	ThA1-01	Lee, C.-H.	WeP7-03
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Kim, Y.-O.	FrA7-30	FrA7-10
Kim, Y.-T.	FrM7-13	Lee, D. H.	FrM7-18
Ko, J.-S.	ThA1-04	Lee, D. S.	ThA7-02
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Lee, D. Y.	FrA3-C	FrA7-32
.....	FrA3-01	Lee, J.-K.
Lee, D.-C.	ThM7-29	ThA7-20
Lee, D.-H.	ThA7-20	Lee, J.-K.
Lee, D.-H.	ThM7-16	ThA7-38
.....	.....	ThM7-21	.....	.....	FrM7-14
Lee, D.-J.	.....	FrM2-05	.....	Lee, J.-M.	.....
Lee, D.-J.	.....	FrM7-12	.....	.....	WeP7-32
Lee, D.-K.	.....	ThM7-28	.....	Lee, J.-M.	.....
Lee, D.-W.	.....	ThA7-09	.....	.....	ThM7-36
Lee, E. H.	.....	FrM7-17	.....	Lee, J.-M.	.....
Lee, G. Y.	.....	ThM6-02	.....	.....	ThP5-02
Lee, G.-J.	.....	ThM7-11	.....	Lee, J.-S.	.....
Lee, G.-K.	.....	FrM7-08	.....	.....	WeP7-25
Lee, H.	.....	WeP7-27	.....	Lee, J.-S.	.....
Lee, H.	.....	ThP3-02	.....	.....	ThA7-30
Lee, H.	.....	FrM6-04	.....	Lee, J.-S.	.....
Lee, H. C.	.....	FrA7-05	.....	.....	FrA7-28
Lee, H. C.	.....	FrM7-20	.....	Lee, J.-W.	.....
Lee, H. J.	.....	ThM7-22	.....	.....	WeP4-05
Lee, H. J.	.....	FrM7-05	.....	.....	WeP7-05
Lee, H. M.	.....	FrA7-09	.....	.....	ThA4-03
Lee, H. U.	.....	FrP1-03	.....	Lee, J.-W.	.....
Lee, H. W.	.....	WeP7-21	.....	.....	ThM3-06
Lee, H.-H.	.....	ThA1-05	.....	Lee, J.-W.	.....
Lee, H.-J.	.....	WeP2-05	.....	.....	FrM7-08
Lee, H.-J.	.....	ThA7-15	.....	Lee, J.-W.	.....
Lee, H.-J.	.....	ThM7-23	.....	.....	FrP1-04
Lee, H.-N.	.....	ThA7-16	.....	Lee, J.-Y.	.....
Lee, H.-W.	.....	FrA5-02	.....	.....	FrA5-05
Lee, H.-W.	.....	FrM7-25	.....	Lee, K.	.....
Lee, I.-K.	.....	FrM4-06	.....	.....	ThA7-36
Lee, I.-Y.	.....	FrA5-C	.....	Lee, K.	.....
.....	.....	FrA5-O	.....	.....	FrP2-02
.....	.....	FrM5-C	.....	Lee, K. C.	.....
.....	.....	FrM5-O	.....	.....	FrA2-04
Lee, J.	.....	WeP1-04	.....	Lee, K. C.	.....
Lee, J.	.....	WeP6-04	.....	.....	FrM7-07
Lee, J.	.....	WeP7-26	.....	.....	FrA7-13
.....	.....	WeP7-27	.....	Lee, K. H.	.....
Lee, J.	.....	ThA3-02	.....	.....	FrA7-39
.....	.....	ThM4-05	.....	Lee, K. S.	.....
.....	.....	FrM6-04	.....	.....	ThP6-06
Lee, J.	.....	ThA7-32	.....	Lee, K. S.	.....
Lee, J.	.....	ThP3-02	.....	.....	FrA7-31
Lee, J.	.....	FrA7-33	.....	.....	FrM7-21
.....	.....	FrA7-34	.....	Lee, K.-B.	.....
Lee, J.	.....	FrM4-02	.....	.....	ThP2-04
Lee, J. H.	.....	ThA7-05	.....	Lee, K.-I.	.....
Lee, J. H.	.....	FrM3-06	.....	.....	WeP7-08
Lee, J. S.	.....	ThM7-20	.....	.....	ThA4-03
Lee, J. S.	.....	ThP6-03	.....	.....	FrM2-02
Lee, J. S.	.....	ThP6-04	.....	Lee, K.-J.	.....
Lee, J. W.	.....	ThA7-39	.....	.....	ThM7-28
Lee, J. W.	.....	FrM7-21	.....	Lee, K.-S.	.....
.....	.....	FrA7-31	.....	.....	WeP7-29
Lee, J.-D.	.....	ThA1-01	.....	Lee, K.-S.	.....
Lee, J.-G.	.....	FrM3-05	.....	.....	ThM7-06
Lee, J.-H.	.....	WeP7-12	.....	Lee, M.	.....
Lee, J.-H.	.....	ThA1-01	.....	.....	WeP7-26
Lee, J.-H.	FrA7-20	Lee, M.
Lee, J.-H.	FrA7-22	WeP7-27
Lee, J.-H.	FrM7-28	WeP7-28
Lee, J.-J.	WeP7-02	Lee, M. C.
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Nanayakkara, V.	ThA4-06		FrP4-06
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Ngamroo, I.	WeP1-06	Park, J. H.	ThA7-12
Nguyen, T. T.	ThM6-C		ThM7-16
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Niu, Y.	FrA3-02	Park, J.-H.	FrM7-25
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Oh, D.-I.	FrA5-06	Park, J.-I.	FrM2-03
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Oh, S.-K.	WeP7-33	Park, J.-W.	WeP7-32
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Oh, S.-U.	ThP1-02	Park, K.	ThA7-36
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Ohnishi, K.	ThP2-02	Park, K. C.	ThM7-08
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Ok, I.-J.	FrM7-03	Park, K. H.	FrP4-03
Oka, M.	FrA3-06	Park, K. S.	FrA7-05
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Ortega, R.	ThM1-06		FrM2-02
Osa, Y.	WeP3-02	Park, K.-S.	ThM1-04
Paek, K. N.	ThA7-02	Park, K.-S.	FrP4-05
Park, B. S.	FrA7-19	Park, M.	WeP1-03
Park, C. H.	FrP5-06		ThA7-03
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Park, C.-Y.	WeP2-06	Park, M. K.	ThA7-34
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Park, D. Y.	FrA2-04	Park, M.-J.	FrM7-28
Park, D.-W.	WeP7-17	Park, M.-K.	FrA3-05
Park, D.-Y.	ThA5-03	Park, M.-S.	WeP7-35
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Park, G. S.	FrP5-01	Park, N. J.	FrM5-06
Park, G.-T.	FrM7-16	Park, O.-D.	WeP6-05
Park, H. S.	FrM7-06	Park, P.	ThP5-05
Park, H.-J.	ThM7-07	Park, S.	ThA4-01
Park, H.-J.	ThM7-16	Park, S. H.	ThA7-22
Park, H.-K.	FrP1-05	Park, S. H.	FrA7-07
Park, H.-S.	ThM7-35	Park, S. J.	FrA7-37
Park, H.-W.	ThA7-27	Park, S. S.	ThM6-04
	ThA7-28	Park, S.-B.	WeP7-37
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Park, H.-W.	ThP4-03		FrM6-01
Park, I.-G.	FrP4-02		FrM6-02
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Ro, C.-C.	ThM7-04	Shon, J. H.	FrM7-21
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Ryu, J.-W.	FrA1-04	Son, Y. I.	FrM4-04
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Sabanovic, A.	FrA3-06	Song, D. S.	WeP7-10
Salameero, L. M.	FrP6-03	Song, D.-S.	ThP4-03
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Savio, S.	FrA4-05	FrP3-03
Sawae, R.	WeP3-06	Song, G.	FrM7-27
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.....	WeP2-04	Song, M. G.	FrP2-01
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Seo, H.	WeP7-36	Sonphao, W.	FrP3-C
Seo, J.	ThA6-03	FrP3-04
Seo, J.	FrP2-02	Soong, M. J.	ThM7-02
Seo, J. H.	FrM4-04	Speyer, J. L.	FrA7-12
Seo, J.-I.	FrA7-18	Stirrup, R.	FrA1-01
Seo, J.-Y.	ThM4-06	Sugisaka, M.	ThA3-03
Seo, L.	ThM5-03	FrA1-03
Seo, W. H.	FrA7-35	Suh, Y. S.	FrA7-C
Seo, Y. B.	FrM7-18	Sumimoto, T.	FrM2-01

Sung, J. M.	FrP2-01	Yang, J.-H.	ThA7-24
Sung, M. Y.	FrA4-04	Yang, S.	ThA4-01
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Suzuki, T.	WeP6-01		ThA6-O
Szaki, A.	FrM1-04		ThA6-01
Tagawa, K.	FrM4-C		ThA6-02
	FrM4-03	Yang, S. Y.	FrA2-06
Tahri, A.	WeP1-05	Yang, S. Y.	FrA7-06
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Tang, J.	ThM4-C	Yang, S.-H.	ThM7-05
	ThM4-01	Yang, S.-Y.	ThA7-38
Tang, K. S.	FrA1-01		FrM7-22
Tawada, M.	ThM3-04	Yatim, A. H. M.	ThM2-01
Thepsatorn, P.	ThP3-06	Yen, H. C.	ThM7-01
Thron, M.	WeP6-03		ThP1-01
Tipuwanporn, V.	ThP3-06	Yeo, J.-K.	ThA1-05
Tomasso, G.	ThM3-01	Yeu, T. K.	FrM3-03
Torra, V.	WeP5-C	Yi, J.	FrM2-06
	WeP5-O	Yoo, H. R.	ThM6-05
	WeP5-01	Yoo, J.-H.	ThM7-40
Tran, T. P.	ThM6-01	Yoo, K.-J.	FrA2-03
Tsai, C.-C.	WeP5-03	Yoo, S. P.	FrA3-01
Tsay, H.-R.	ThM1-02	Yoon, A.	ThM5-C
Tse, C. K.	ThM1-03		ThM5-O
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Tsubouchi, K.	WeP7-34		ThM5-05
Uchibori, A.	FrA3-06	Yoon, D. H.	WeP7-09
Uchikado, S.	WeP3-02	Yoon, G.	ThA7-31
Ueda, K.	ThA3-04	Yoon, I.-S.	ThM7-06
Uehara, H.	ThA4-06	Yoon, J. S.	WeP7-06
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Uezato, K.	ThM1-05	Yoon, K. S.	FrA7-09
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Uma, G.	ThM1-01	Yoon, K.-J.	WeP4-01
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Veerachary, M.	ThM1-05	Yoon, S.	WeP7-28
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Wada, K.	FrA3-06	Yoon, S.-H.	ThA7-26
Watanabe, K.	FrP1-02	Yoon, S.-H.	ThM7-17
Woehrschimmel, R.	ThP3-05	Yoon, Y.	FrM7-24
Wolbank, T. M.	ThP3-05	Yoon, Y.-S.	ThM7-11
Wolf, H.	ThP2-03	You, M.-G.	ThA7-15
Won, C. Y.	ThM2-06	Youm, S.-H.	WeP7-19
Won, C.-Y.	ThA5-06	Yu, I.-K.	WeP1-03
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Won, J.-S.	ThM7-04	Yu, X.	FrM3-01
Won, T.-H.	ThA7-27	Yum, T. D.	FrA7-07
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Woo, J. I.	ThM7-16		FrA7-02
Woo, J.-I.	FrM7-25	Yun, H. K.	ThM2-06
Woo, M. J.	FrA7-25	Yun, H.-K.	ThA5-06
Wu, J.	ThP3-04	Yun, J.-S.	WeP7-04
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Xiliang, S.	FrA1-06	Yun, W.	ThA7-26
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Xue, F.	ThP3-04		FrM3-02
Yada, K.	WeP5-04	Zhang, B.-T.	WeP7-37
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Yamamoto, S.	ThA5-02	Zhou, Y.	WeP3-03
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