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1. Chair's Message

Welcome to the 15th International Symposium on Antennas and Propagation in 2010 (ISAP 2010)! ISAP 2010 that will be held in Macao, China, from November 23-26, 2010, is the premier forum for presentation of the current status and future trends in the field of antenna and propagation. The conference is jointly organized by the University of Macau and the State Key Laboratory of Millimeter Waves at City University of Hong Kong,



co-organized by Bureau of Telecommunications Regulation (DSRT), supported by Macao Science and Technology Development Fund (FDCT), gold sponsored by Rodhe & Schwarz, sponsored by Agilent Technologies, technically co-sponsored by Institute of Electronics, Information and Communication Engineers (IEICE), IEEE Antennas and Propagation Society (IEEE AP-S), IEEE (HK) Antennas & Propagation / Microwave Theory & Techniques (IEEE HK AP/MTT) Joint Chapter and IEEE Macau Antennas & Propagation / Microwave Theory & Techniques (IEEE Macao AP/MTT) Joint Chapter).

The technical program is mainly led by Prof. K. M. Luk and; his colleagues and Prof. Luk are working diligently to ensure an outstanding technical program including Keynote and technical sessions, short courses and tutorials, moreover, Keynote Speakers include Prof. Raj Mittra, Prof. Weng Cho Chew and Prof. Koichi Ito.

In addition, a best paper competition committee is chaired by Prof. Tapan Sarkar. The outstanding presentations of regular sessions and student paper competitions are solicited and awarded.

Aside from attending the conference, please also enjoy your tour in Macao. Macao was the first gateway between East and West 500 year ago and its UNESCO world cultural heritage of European building in the midst of traditional Chinese architecture is solid testimony of the cultural exchange between the western world and Chinese civilization. Since 16th century, gaming has been the pillar industry and Macao is now renowned as "Monte Carlo of the Orient" and "Las Vegas of the East" featuring Asia's most modern and exciting entertainment destinations and preeminent convention and exhibition venues. Macao is a unique place where you will discover a world of difference.












The Organizing Committee looks forward to meeting you and making your visit in Macao a memorable and delightful one.

Sincerely,

Prof. Kam Weng TAM and Prof. Chi Hou CHAN

General Chairs of ISAP 2010

2. General Information

<p>Date 23 – 26 November 2010</p> <p>Venue The Venetian Macao-Resort-Hotel</p>	
<p>Organizers</p>	<div style="display: flex; justify-content: space-around;"> <div data-bbox="471 703 611 834">  <p>澳門大學 UNIVERSIDADE DE MACAU University of Macau</p> </div> <div data-bbox="714 703 944 874">  <p>State Key Laboratory of Millimeter Waves 香港城市大學 City University of Hong Kong The State Key Laboratory of Millimeter Waves at City University of Hong Kong</p> </div> </div>
<p>Co-Organizer/Supporter</p>	<div style="display: flex; justify-content: space-around;"> <div data-bbox="426 890 656 1070">  <p>電訊管理局 DSRT The Bureau of Telecommunications Regulation</p> </div> <div data-bbox="725 890 932 1070">  <p>科學技術發展基金 FIDICIT The Science and Technology Development Fund</p> </div> </div>
<p>Gold Sponsor</p>	
<p>Sponsor</p>	
<p>Technical Co-Sponsors</p>	<div style="display: flex; justify-content: space-around;"> <div data-bbox="409 1262 527 1393">  <p>IEICE Communication Society</p> </div> <div data-bbox="549 1254 673 1393">  <p>IEEE Antenna and Propagation Society</p> </div> <div data-bbox="701 1238 813 1382">  <p>IEEE (HK) Section AP/MTT IEEE HK AP/MTT Joint Chapter</p> </div> <div data-bbox="846 1238 953 1393">  <p>IEEE Macau AP/MTT Joint Chapter IEEE Macau AP/MTT Joint Chapter</p> </div> </div>

3. Committees

3.1 *Organizing Committee*

General Chairs

Kam Weng TAM	University of Macau
Chi Hou CHAN	City University of Hong Kong

Technical Program Chairs

Kwai Man LUK	City University of Hong Kong
Quan XUE	City University of Hong Kong
Sio Weng TING	University of Macau
Wai Wa CHOI	University of Macau

Technical Program Vice Chairman

Kwok Kan SO	City University of Hong Kong
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Publication and Publicity Chairs

Hang WONG	City University of Hong Kong
Kam Man SHUM	City University of Hong Kong

Finance Chairs

Sut Kam HO	University of Macau
Pedro CHEONG	University of Macau

Local Arrangement Chairs

Chon Chio LEONG	University of Macau
Ka Hing CHIANG	JESIC Technology Limited
Chun Pong CHIANG	JESIC Technology Limited

General Secretary

Wai Wa CHOI	University of Macau
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Secretary of Technical Program Committee

Wing Yee KO	City University of Hong Kong
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Members of Secretariat

Ka Sin LEONG	University of Macau
Man Lok LEE	University of Macau
Qian Ling YE	University of Macau

3.2 International Advisory Committee

Kai Fong LEE	University of Mississippi
Raj MITTRA	Pennsylvania State University
Tapan SARKAR	Syracuse University
Makoto ANDO	Tokyo Institute of Technology
Weng Cho CHEW	The University of Hong Kong
Koichi ITO	Chiba University
Dau Chyrh CHANG	Oriental Institute of Technology
Zhi Ning CHEN	Institute for Infocomm Research
Kin Lu WONG	National Sun Yat-Sen University
Joshua Le Wei LI	National University of Singapore
Marek BIAOKOWSKI	The University of Queensland
Seong-Ook PARK	Korea Advanced Institute of Science and Technology
William Ross STONE	Stoneware Ltd.
Wen Xun ZHANG	Southeast University

3.3 Best-Paper Award Committee

Chair

Tapan K. Sarkar Syracuse University, USA

Vice Chair

ZhiNing Chen Institute for Infocomm Research, Singapore

Members

Dau Chyrh Chang Oriental Institute of Technology, Taiwan
Mitsuo Taguchi Nagasaki University, Japan
Monai Krairiksh King MongKut's Institute of Technology Ladkrabang,
Thailand
Magdalena Salazar Palma Universidad Carlos III de Madrid, Spain
Kwok-Wa Leung City University of Hong Kong, Hong Kong



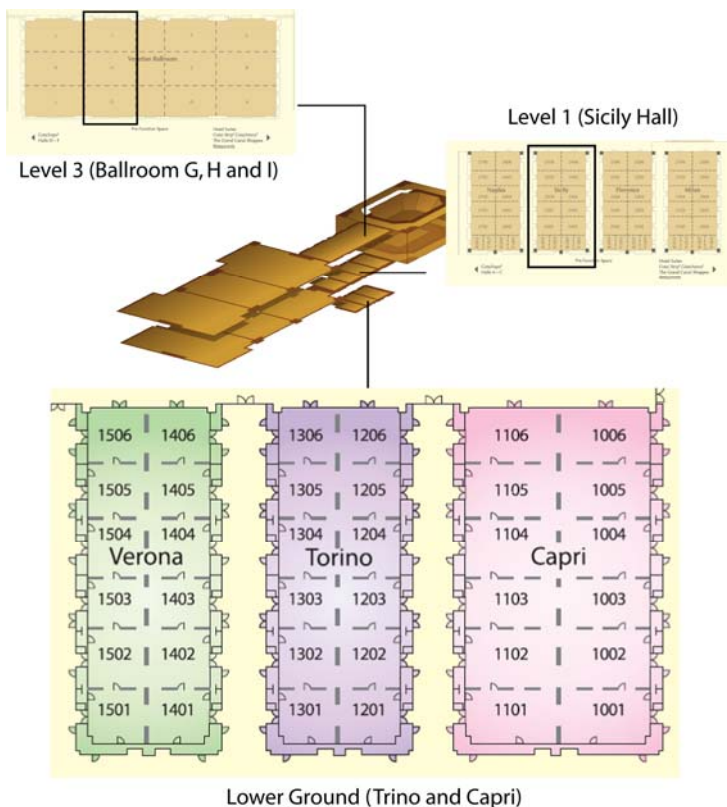
3.4 ISPA ISC and TAB Members

Ajay Chakraborty	IIT Kharagpur, India
Ananda Mohan	UTS, Australia
Ananjan Basu	IIT Delhi, India
Bevan Bates	Adelaide University, Australia
Chi H. Chan	City University of Hong Kong, Hong Kong
Chuwong Phongcharoenpanich	KMITL, Thailand
Dau-Chyrh Chang	OIT & YZU, Taiwan
Hiroyuki Arai	Yokohama National University, Japan
Hong-Twu Chen	ROC Military Academy, Taiwan
Jaehoon Choi	Hanyang University, Korea
K. J. Vinoy	IISc Bangalore, India
K. M. Luk	City University of Hong Kong, Hong Kong
Kam Weng Tam	University of Macau , Macao
Kunio Sawaya	Tohoku University, Japan
Kyeong-Sik Min	Korea Maritime University, Korea
Joshua Le Wei Li	National University of Singapore
Makoto Ando	Tokyo Institute of Technology, Japan
Mazlina Esa	University Teknologi Malaysia, Malaysia
Monai Krairiksh	KMITL, Thailand
Prayoot Akkaraekthalin	KMITNB, Thailand
Seong Ook Park	KAIST, Korea
Sio Weng Ting	University of Macau, Macao
Trevor Bird	CSIRO, Australia
Wai Wa Choi	University of Macau, Macao
Wei Hong	Southeast University, China
Wen Xun Zhang	Southeast University, China
Yilong Lu	Nanyang Technological University, Singapore
Zaiki Awang	University Teknologi MARA, Malaysia

3.5 Reviewers of ISAP2010

Abu Sahmah Mohd Supa'at	Kiyotaka Fujisaki	Prayoot Akkaraekthalin
Akimasa Hirata	Koichi Hirayama	Qiang Chen
Akkarat Boonpoonga	Koichi Ichige	Rangsan Wongsan
Akram Alomainy	Koki Watanabe	Rokuzo Hara
Ananda Sanagavarapu Mohan	Komsak Meksamoot	Sarawuth Chaimool
Andrew Weily	Kunio Sakakibara	Satoshi Hori
Anyong Qing	Kuo-Sheng Chin	Sevia Idrus
Atsushi Yamamoto	Kyoichi Iigusa	Sharul Kamal Abdul Rahim
Chao-Fu Wang	Linus Lau	Shigeki Obote
Chatree Mahatthanajatuphat	Manabu Yamamoto	Shinichi Ichitsubo
Chein-Jen Wang	Mardina Abdullah	Shinichiro Ohnuki
Cheng-Nan Hu	Masaharu Takahashi	Shyh-Kang Jeng
Christophe Fumeaux	Masahiro Tanaka	Steven Gao
Chuwong Phongcharoenpanich	Masayuki Nakano	Suneat Pranonsatit
Da-Gang Fang	Mazlina Esa	Takayuki Sasamori
Denchai Worasawate	Md Zaini Jamaludin	Takeo Ohgane
Duang-Arthit Srimoon	Michael Ong	Takeshi Fukusako
En-Xiao Liu	Mingyao Xia	Takuichi Hirano
Franklin Joseph	Mitoshi Fujimoto	Tetsuro Imai
Haiying Yao	Mitsuhiro Yokota	Titipong Lertwiriya-prapa
Hao Wang	Mohamad Kamal A Rahim	Toru Takahashi
Hieng Tiong Su	Mohd Khairul Mohd Salleh	Toshifumi Moriyama
Hiroshi Iwai	Mohd Zazar Mohd Jenu	Toshihiko Nishimura
Hiroyuki Tsuji	Monthippa Uthansakul	Wei Hong
Hisato Iwai	Naobumi Michishita	Weijiang Zhao
Hon Tat Hui	Naoki Honma	Wen-Piao Lin
Hong-Xing Zheng	Naoki Kita	Xiang-Yu Cao
Hou Zhang	Nasimuddin N	Y. P. Zhang
Huey-Ru Chuang	Nobuhiro Kuga	Yasuhiko Tanabe
Jaehoon Choi	Noor Asmawati Samsuri	Yasushi Takatori
Jeffrey S. Fu	Norhudah Seman	Yijun Feng
Jian-Xin Chen	Noriaki Oodachi	Yong Heui Cho
Jui-Ching Cheng	Nozomu Ishii	Yong-Chang Jiao
Jukkrit Tagapanij	Ozgur Isik	Yongxin Guo
Jun Hu	Panisa Keowsawat	Yoshiaki Ando
Kan Okubo	Peerapong Uthansakul	Yoshichika Ohta
Kazuo Sato	Peter Song	Yoshio Inasawa
Kei Sakaguchi	Phakkawat Jantree	Young Joong Yoon
Keisuke Noguchi	Phumin Kirawanich	Yongki Cho
Keizo Cho	Piyaporn Krachodnok	Zhongxiang Shen
Kentaro Nishimori	Pornchai Supnithi	
Kin-Lu Wong	Power Hsu	

4. Floor Plan





5. Technical Program

5.1 Program at a Glance

Program is available in following pages.

23 Nov. 2010 (Tuesday)

Venue	Rm. Capri 1101 SCA1	Rm. Capri 1102 SCB1	Rm. Capri 1103 SCC1
10:00 - 11:00	Eigenvalues and Eigenvectors in Array Antennas - Optimization of Array Antennas for High Performance by Prof. Nobuyoshi Kikuma Nagoya Institute of Technology, Japan	Design, Analysis and Practical Applications of RFID Antennas by Prof. Raj Mittra Penn State University, USA Prof. Andrey S. Andrenko YRP R&D Center, Fujitsu Laboratories LTD., Japan	The Physics and Mathematics of Multiantenna Systems and How to Improve Their Performances by Prof. Tapan K. Sarkar Syracuse University, Syracuse, New York, USA Prof. Magdalena Salazar-Palma Universidad Carlos III de Madrid, Spain
11:00 - 11:30	Tea Break		
11:30 - 12:30	Eigenvalues and Eigenvectors in Array Antennas - Optimization of Array Antennas for High Performance	Design, Analysis and Practical Applications of RFID Antennas	The Physics and Mathematics of Multiantenna Systems and How to Improve Their Performances

Time	SCA2	SCB2	SCC2
14:30 - 15:30	MIMO and Diversity Antenna Systems for Mobile Terminals and Small Base Stations by Prof. Hiroyuki Arai Yokohama National University, Japan	A Historical Perspective of the Method of Moments by Prof. Kenneth K. Mei City University of Hong Kong, China	Antenna Designs for Mobile Communications and Satellite Services by Dr. Hang WONG City University of Hong Kong, China
15:30 - 16:00	Tea Break		
16:00 - 17:00	MIMO and Diversity Antenna Systems for Mobile Terminals and Small Base Stations	A Historical Perspective of the Method of Moments	Antenna Designs for Mobile Communications and Satellite Services

18:30 - 21:30 | Welcome Reception - "Rohde & Schwarz Night" @ Splash, Four Seasons Hotel Macao

24 Nov. 2010 (Wednesday)

Meeting Rooms Sicily

Venue

Time

08:40 - 09:15

Opening Ceremony

09:15 - 10:05

Keynote Speech by Prof. Raj Mittra

10:05 - 10:30

Tea Break

10:30 - 11:20

Keynote Speech by Prof. Weng Cho Chew and Prof. Leslie George Tham

11:20 - 12:10

Keynote Speech by Prof. Prof. Koichi Ito

12:10 - 13:30 | Lunch @ Torino, Venetian-Resort-Hotel

24 Nov. 2010 (Wednesday)

Venue	Rm. Capri 1001	Rm. Capri 1002	Rm. Capri 1003	Rm. Capri 1101	Rm. Capri 1102	Rm. Capri 1103		
Time	WA1	WA1	WB1	WCI	WCI	WD1		
13:30 - 13:50	Rohde & Schwarz Special Session		Wideband Antennas 1	Student Paper Competition		EMC/EMI Simulations & Measurements		
13:50 - 14:10							20	18
14:10 - 14:30							111	34
14:30 - 14:50							120	97
14:50 - 15:10							155	140
	293	233						
	Tea Break							
Time	WA2	WA2	WB2			WD2		
15:30 - 15:50	Antennas with Metamaterials 1		Computational Electromagnetics 1			Mobile and Indoor Propagations 1		
15:50 - 16:10							92	24
16:10 - 16:30							134	35
16:30 - 16:50							173	64
16:50 - 17:10							198	71
17:10 - 17:30	201	222						
	213	251						

25 Nov. 2010 (Thursday)

Venue	Rm. Capri 1001	Rm. Capri 1002	Rm. Capri 1003	Rm. Capri 1101	Rm. Capri 1102	Rm. Capri 1103
Time	TA1	TB1	TC1	TD1	TE1	TF1
	Small Antennas 1	Millimeter Wave and Sub-Millimeter Wave Antennas 1	Antenna Measurements 1	Remote Sensing	High-Frequency Techniques and Time Domain Techniques	MIMO Radio Channels & Mobile Radio Communication Systems 1
08:30 - 08:50	61	323	91	19	110	128
08:50 - 09:10	69	105	179	33	177	145
09:10 - 09:30	70	115	273	113	131	162
09:30 - 09:50	75	122	318	221	256	186
09:50 - 10:10	80	124	332	275	336	265

Tea Break

Time	TA2	TB2	TC2	TD2	TE2	TF2
	Adaptive and Smart Antennas	Dual Band Antennas	Antenna Measurements 2	Remote Sensing and Other Propagations	Computational Electromagnetics 2	Satellite Communication Systems and Other Systems
10:30 - 10:50	41	126	38	60	192	207
10:50 - 11:10	46	203	104	76	193	209
11:10 - 11:30	119	262	116	73	202	291
11:30 - 11:50	170	285	215	268	239	44
11:50 - 12:10	176	303	248	281	290	52

12:10 – 13:30 | Lunch @ Torino, Venetian-Resort-Hotel

25 Nov. 2010 (Thursday)

Venue	Rm. Capri 1001	Rm. Capri 1002	Rm. Capri 1003	Rm. Capri 1101	Rm. Capri 1102	Rm. Capri 1103
Time	TA3	TB3	TC3	TD3	TE3	TF3
	Small Antennas 2	Multi-Band Antennas	Millimeter Wave and Sub-Millimeter Wave Antennas 2	Mobile and Indoor Propagations 2	Other Electromagnetic Wave Theories	MIMO Radio Channels & Mobile Radio Communication Systems 2
13:30 - 13:50	98	142	235	72	59	272
13:50 - 14:10	103	159	135	87	88	277
14:10 - 14:30	121	180	138	178	89	298
14:30 - 14:50	130	246	167	183	189	309
14:50 - 15:10	11	23	324	242	196	216

13

Tea Break

Time	TA4	TB4	TC4	TD4	TE4	TF4
	Antenna Array 1	Wideband Antennas 2	Antennas with Metamaterials 2	Other Propagations	Mobile and Indoor Propagations and Millimeter and Optical Wave Propagations	EMC/EMI Simulations & Measurements and MIMO Radio Channels & Mobile Radio Communication Systems
15:30 - 15:50	187	58	238	79	278	289
15:50 - 16:10	195	136	258	158	284	74
16:10 - 16:30	260	153	261	197	286	77
16:30 - 16:50	231	200	283	236	311	85
16:50 - 17:10	229	321	333	243	263	123
17:10 - 17:30	322	244	335	274	185	84

26 Nov. 2010 (Friday)

Venue	Rm. Capri 1001	Rm. Capri 1002	Rm. Capri 1003	Rm. Capri 1101
Time	FA1	FB1	FC1	FD1
	Small Antennas 3	Adaptive and Smart Antennas and Other Antennas	Antenna Measurements 3	Other Systems 1
08:30 - 08:50	276	208	300	56
08:50 - 09:10	217	211	302	118
09:10 - 09:30	220	240	17	212
09:30 - 09:50	249	282	150	328
09:50 - 10:10	259	42	43	329

Tea Break

Time	FA2	FB2	FC2	FD2
	Small Antennas 4	Antenna Array 2	Planar Antennas	RF/Microwave Filters
10:30 - 10:50	182	160	163	214
10:50 - 11:10	280	156	175	267
11:10 - 11:30	305	184	194	325
11:30 - 11:50	55	294	219	218
11:50 - 12:10	316	308	228	232

12:10 – 13:30 | Lunch @ Torino, Venetian-Resort-Hotel

26 Nov. 2010 (Friday)

Venue	Rm. Capri 1001	Rm. Capri 1002	Rm. Capri 1003	Rm. Capri 1101
Time	FA3	FB3	FC3	FD3
	UWB Antennas	Antenna Array 3	Millimeter Wave and Sub-Millimeter Wave Antennas and Other Antennas	Biological Effects and Medical Applications and Other Systems
13:30 - 13:50	101	31	279	147
13:50 - 14:10	114	108	100	287
14:10 - 14:30	172	165	143	12
14:30 - 14:50		234	148	330
14:50 - 15:10	313	288	40	

Tea Break

Time	FA4	FB4	FC4	FD4
	Small Antennas and Other Antennas	Reconfigurable and Multiband Antennas	Other Antennas	RF/Microwave Components
15:30 - 15:50	326	29	32	161
15:50 - 16:10		51	37	301
16:10 - 16:30		125	50	327
16:30 - 16:50	93	133	157	106
16:50 - 17:10	94	227	264	271

5.2 Keynote Speeches

Keynote Speech 1

Probing The Mysteries of The Universe with The square Kilometer Array (SKA)

Prof. Raj Mittra, IEEE Life Fellow
Pennsylvania State University, U.S.A.

Venue: Sicily Hall
Time: Wednesday, 24 Nov. 2010



Abstract

Perhaps there is no other antenna project in the world has elicited more interest on the part of scientists and engineers as has the Square Kilometer Array (SKA). SKA is a radio telescope, which is being developed as a joint project - truly international in nature - with participation from 19 countries, including the UK, Netherlands, South Africa, Canada, the US, Australia, New Zealand, China and India. When fully developed, it will have a total collecting area of approximately one square kilometer, will operate over a wide range of frequencies, and its size will make it 50 times more sensitive than any other radio instrument built to-date. Unlike conventional phased arrays, SKA will rely upon digital signal processing for beamforming, and will be able to survey the sky more than ten thousand times faster than has been possible hitherto. As a consequence, it will require extremely high-performance central-computing engines, as well as long-haul optical fiber links, with a capacity that would exceed the existing Internet traffic of Europe! The array of receiving stations, which will comprise the telescope, will extend out to a distance of 3,000 km from a concentrated central core, enabling the system to push - almost to its ultimate limit - the tradition of radio astronomy, namely providing the highest resolution images. The SKA will combine the signals received from thousands of small antennas spread over a distance of more than 3000 kms to simulate a giant radio telescope capable of extremely high sensitivity and angular resolution. The SKA will also have a very large field-of-view (FOV) with a goal at frequencies below 1 GHz of 200 square degrees and of more than 1 square degree (about 5 full Moons) at higher frequencies. One innovative development is the use of phased-array technology to provide multiple FOVs. This will greatly increase the survey speed of the SKA and enable multiple users to observe different pieces of the sky simultaneously. The unique combination of a very large FOV and high sensitivity would enable the SKA to explore far deeper into the Universe than has ever been done before.

Keynote Speech 2**Engineering Education: A Path for Wealth Creation and Its Challenges**

*Prof. Weng Cho Chew, IEEE Fellow, OSA Fellow and IOP Fellow
The University of Hong Kong, Hong Kong SAR, China*

*Prof. Leslie George Tham, FHKIE, MASCE
The University of Hong Kong, Hong Kong SAR, China*



Venue: Sicily Hall

Time: Wednesday, 24 Nov. 2010

Abstract

In a world driven by knowledge economy, education lifts people out of poverty. In a globalized world economy, the manufacturing of technologies is not localized in one part of the world. Hence, when a populace is highly educated, they can benefit by participating in the technology and manufacturing sector of the world. Engineers make products. The more high value-added are the products, the more wealth they can bring to a society. Hence, technology like wireless communication and the internet actually helps the flow of wealth to previously unreachable parts of the world.

Engineering education can enhance the technological sophistication of the populace, and allows them to shift from an agrarian economy to a technology-based economy. This paradigm shift has lifted over 260 million people out of poverty in China, who produces over 700,000 engineers a year. Hence, engineering education can create wealth for a nation that is previously impoverished.

Keynote Speech 3**Small Antennas for Body-Centric Communications**

Prof. Koichi Ito, IEEE Fellow and IEICE Fellow
Chiba University, Japan

Venue: Sicily Hall

Time: Wednesday, 24 Nov. 2010

**Abstract**

In recent years, a study on body-centric communications has become an active and attractive area of research because of their various applications such as e-healthcare, support systems for specialized occupations, monitoring systems for elderly and handicapped people, entertainment, and so on. Whereas UHF bands are subjects of interest especially in Europe and USA, HF bands are of great interest especially in Japan and Korea. Hence, all of the prospective frequencies are in an extremely wide range, and an objective idea on how to select a right frequency band for individual applications is required. As for the antennas, many types of wearable (on-body) and implantable (in-body) antennas have been reported, and they should be as small as possible.

Currently in our laboratory, we have been studying on frequency dependence of basic characteristics of simple wearable antennas as well as body-centric wireless communication channels in the range of HF to UHF (3 MHz – 3 GHz). Also, we have been investigating numerically and experimentally thin implantable antennas in UHF band.

In this presentation, firstly, electric field distributions around the human body wearing a small top-loaded monopole antenna are numerically calculated and compared in a wide range of HF to UHF bands. Then, received open voltages at receiving antennas which are equipped at several different points on the human body are numerically investigated. The received open voltages are also numerically calculated and compared with several different postures of the human body. Finally, some basic performances of miniaturized thin implantable antennas are numerically calculated in UHF band. Experimental validation is also demonstrated.

5.3 Short Courses

Short Course | SCA1

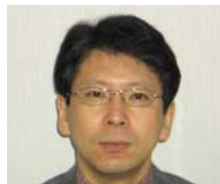
Eigenvalues and Eigenvectors in Array Antennas Optimization of Array Antennas for High Performance

Prof. Nobuyoshi Kikuma

Nagoya Institute of Technology, Japan

Venue: Rm. Capri 1101

Time: Tuesday, 23 Nov. 2010 (10:00 - 12:30)



Short Course | SCB1

Design, Analysis and Practical Applications of RFID Antennas

Prof. Raj Mittra

Pennsylvania State University, U.S.A.

Prof. Andrey S. Andrenko

YRP R&D Center, Fujitsu Laboratories LTD, Japan

Venue: Rm. Capri 1102

Time: Tuesday, 23 Nov. 2010 (10:00 - 12:30)



Short Course | SCC1

The Physics and Mathematics of Multiantenna Systems and How to Improve Their Performances

Prof. Tapan K. Sarkar

Syracuse University; Syracuse, New York, U.S.A.

Prof. Magdalena Salazar-Palma

Universidad Carlos III de Madrid, Spain

Venue: Rm. Capri 1103

Time: Tuesday 23 Nov. 2010 (10:00 - 12:30)



Short Course |SCA2

MIMO and Diversity Antenna Systems for Mobile Terminals and Small Base Stations

Prof. Hiroyuki Arai
Yokohama National University, Japan

Venue: Rm. Capri 1101
Time: Tuesday, 23 Nov. 2010 (14:30 -17:00)



Short Course | SCB2

Historical Perspective of the Method of Moments

Prof. Kenneth K. Mei
City University of Hong Kong, China

Venue: Rm. Capri 1102
Time: Tuesday, 23 Nov. 2010 (14:30 -17:00)



Short Course | SCC2

Antenna Designs for Mobile Communications and Satellite Services

Dr. Hang Wong
City University of Hong Kong, China

Venue: Rm. Capri 1103
Time: Tuesday, 23 Nov. 2010 (14:30 -17:00)



5.4 Best Paper Competition

Paper ID: **23**

A 4x4 60 GHz LTCC SIW Cavity Array Antenna

Junfeng Xu¹, Zhining Chen¹, Xianming Qing¹, Wei Hong²

¹Institute for Infocomm Research, ²Southeast University

¹Singapore, ²China

Paper ID: **46**

A Least Bit Error Adaptive Array for Multi-Level Modulations

Satoshi Denno, Daisuke Umehara, Masahiro Morikura

Kyoto University

Japan

Paper ID: **52**

Efficiency Improvement of Wireless Power Transfer Via Magnetic Resonance Using the Third Coil

Noriaki Oodachi¹, Hiroki Kudo¹, Kenichiro Ogawa¹, Hiroki Shoki¹, Shuichi Obayashi¹, Tasuku Morooka²

¹Toshiba Corporation, ²Toshiba Research Consulting Corporation

Japan

Paper ID: **89**

Electromagnetic Scattering by a Two-Dimensional Periodic Array of Small Resonant Apertures

Young-ki Cho¹, Ji-whan Ko², Hyun-sung Hong¹, Jong-hwan Lee¹, S. W. Nam³

¹Kyungpook National University, ²Kumoh National Institute of Technology, ³Seoul National University

Korea

Paper ID: **105**

An E-Band Partially-Corporate Feed Slot Array with Laminated Quasi Double-Layer Waveguide Structure and PMC Terminations

Miao Zhang, Jiro Hirokawa, Makoto Ando

Tokyo Institute of Technology

Japan

Paper ID: **139**

Robustness and Stability of a Massively Parallel Out-of-Core Solver for Solving Pure MoM Problems with Million Level Unknowns

Yu Zhang¹, Xun-Wang Zhao¹, Sio-Weng Ting², Hang Su³

¹Xidian University, ²University of Macau, ³Lanzhou University
China

Paper ID: **161**

M-Shaped Dielectric Phase Shifter for a Base Station Antenna

Kengo Nishimoto¹, Takeshi Oshima¹, Toru Fukasawa¹, Hiroaki Miyashita¹, Yoshihiko Konishi¹, Manabu Kurihara², Yoshiyuki Chatani²

¹Mitsubishi Electric Corporation, ²Ryoden Shonan Electronics Inc.
Japan

Paper ID: **182**

Reconfigurable Beam Steering Using Dipole and Loop Combined Antenna

Sangjun Ha¹, Yongjin Kim², Chang Won Jung¹

¹Seoul National University of Technology, ²Inha Technical College
Korea

Paper ID: **212**

On Chip Transformer Design for CMOS Power Amplifiers

Hyeonseok Hwang, Moonsuk Jung, Byeonghak Jo, Gyuseok Kim, Sugyeong Kim, Hyun Paek, Yoosam Na

Samsung Electro-Mechanics
Korea

Paper ID: **318**

Estimation Method of EUT Reflection Coefficient in TRP Measurement System Using a Spheroidal Coupler

Tasuku Teshirogi, Takashi Kawamura, Aya Yamamoto, Toru Sakuma, Yasuhiko Nago

5.5 *Best Student Paper Competition*

Date: 24 November 2010

Time: 14:30 – 16:30

Venue: Capri 1101 – Capri 1102

Paper ID: **26**

Printed WWAN Coupled-Fed Loop Antenna Closely Integrated with Nearby System Ground Plane for Mobile Phone Application

Ting-Wei Kang, Wei-Yu Chen, Kin-Lu Wong

National Sun Yat-Sen University, Taiwan

Paper ID: **27**

Efficient Modeling of a Small Reverberation Chamber Using FDTD Method

SoonGyu Yi¹, Ki-Bok Kong¹, Jung-Hwan Choi¹, Jung-Ick Moon², Seong-Ook Park¹

¹Korea Advanced Institute of Science and Technology

²Electronics and Telecommunications Research Institute, Korea

Paper ID: **47**

Application of Impedance Extension Method to 2D Large-Scale Periodic Array Antenna with Faulty Elements

Keisuke Konno, Qiang Chen, Kunio Sawaya, Toshihiro Sezai

Tohoku University, Japan Aerospace Exploration Agency, Japan

Paper ID: **54**

Adding Dense Multipath Components to Geometry-Based MIMO Channel Models

Juho Poutanen¹, Fredrik Tufvesson², Katsuyuki Haneda¹, Lingfeng Liu³, Claude Oestges³, Pertti Vainikainen¹

¹Aalto University School of Science and Technology, Finland

²Lund University, Sweden

³Université catholique de Louvain, Belgium

Paper ID: **57**

13.56 MHz-RFID Antenna Fabricated with Metal Layer of Standard CMOS Process for Biosensor Applications

Boram Kim, Shigeyasu Uno, Kazuo Nakazato

Nagoya University, Japan

Paper ID: **66**

Numerical Solution for Transient Scattering by Uniformly Moving Targets

S.Q Jia¹, X.M Jiang¹, M.Y Xia²

¹Peking University, China

²University of Electronic Science and Technology, China

Paper ID: **67**

Design of a MIMO Antenna with an Inductor Loaded Neutralization Line for Wireless Communications

Changho Lee, Juman Kim, Minseok Han, Jaehoon Choi
Hanyang University, Korea

Paper ID: **95**

Low-Profile Leaky-Wave Antenna with Monopolar Radiation Pattern Using Composite Right / Left-Handed Transmission Line

Woo-jin Kim, Naobumi Michishita, Yoshihide Yamada
National Defense Academy, Japan

Paper ID: **132**

Single-Feed Circularly Polarized Microstrip Antenna Loaded with a Periodic Structure Superstrate

Chawalit Rakluea¹, Sarawuth Chaimool¹, Kwok L. Chung², Prayoot Akkaraekthalin¹

¹King Mongku's University of Technology North Bangkok, Thailand

²The Hong Kong Polytechnic University, Hong Kong

Paper ID: **137**

The Radiation Characteristics of a Liner Phased Array Antenna Using Inductor Loaded Patch Antennas

Tae-Young Kim, Gun-Su Kim, Boo-Gyoun Kim
Soongsil University, Korea

Paper ID: **141**

Polarization Switching of Ring Microstrip Antennas Fed by an L-Probe with PIN Diodes

Kenta Yamaura, Yuichi Kimura, Misao Haneishi
Saitama University, Japan

Paper ID: **146**

Analysis of Electrodes for Body-Centric Communications

Nozomi Haga, Kazuyuki Saito, Masaharu Takahashi, Koichi Ito
Chiba University, Japan

Paper ID: **149**

Simple Selection Method by the Second Eigenvalue in Indoor 2x2 MIMO System

Mitsuki Sagara, Daisuke Uchida, Hiroyuki Arai
Yokohama National University, Japan

Paper ID: **152**

A 2.45GHz Band Passive RFID System Using a Single Wire Transmission Line

Toru Suzuki, Shigeki Obote, Kenichi Kagoshima
Ibaraki University, Japan

Paper ID: **171**

Heating Performance of Loop Antenna for Microwave Thermal Therapy by Combination of HIFU Treatment System

Samon Ishikawa, Kazuyuki Saito, Masaharu Takahashi, Koichi Ito
Chiba University, Japan

Paper ID: **210**

Design of a Linearly-Polarized Radial Line Slot

Ken Saeki, Hideki Ueda, Jiro Hirokawa, Makoto Ando
Tokyo Institute of Technology, Japan

Paper ID: **297**

An Adaptive Evaluation Method of Material with Complex Permittivity in a Cylindrical Cavity

Nobuyuki Nakao, Yosuke Morishita, Kikuo Wakino, Toshihide Kitazawa
Ritsumeikan University, Japan

Paper ID: **317**

A Three-Port Integrated Dual Band Filter-Antenna Module

Li Yang, Pedro Cheong, Wai Wa Choi, Kam Weng Tam
University of Macau, Macao

Paper ID: **320**

An Integrated Open-Loop Resonator Bandpass Filter-Slot Antenna with Stopband Improvement

Wen-Yao Zhuang, Pedro Cheong, Wai-Wa Choi, Kam-Weng Tam
University of Macau, Macao

Paper ID: **331**

Interpolating Multilevel Green's Function with Radial Basis Function and Phase Compensation

Peng Zhao, Chi Hou Chan,
City University of Hong Kong, Hong Kong



5.6 Technical Sessions

Technical session details are available in following pages.

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1430 – 1450		155 Broadband Quadrifilar Helical Antennas David C. Ni ¹ , Peter Chung ² , Ray Chen ³ , Ching-Wen Hsu ³ ¹ Direxion Technology ² King Communication Materials ³ National Taiwan University of Science and Technology, Taiwan	140 Scattering Analysis of a Formation of Ships Using Parallel Higher Order Method of Moments Xun-Wang Zhao ¹ , Yu Zhang ¹ , Hong-Wei Zhang ¹ , Siu-Weng Ting ² , Hang Su ³ , Chang-Hong Liang ¹ ¹ Xidian University, China ² University of Macau, China ³ Lanzhou University, China
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WA2**Antennas with Metmaterials 1****WB2****Computational Electromagnetics 1****WD2****Mobile and Indoor Propagations 1**

Rm. Capri 1001 - 1002

Rm. Capri 1003

Rm. Capri 1103

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109**Dual Frequency Band Operations of Composite Right/Left Handed Transmission Line and Inverted-F Antenna**

Hirohisa Kitahara, Naobumi Michishita, Yoshihide Yamada

National Defense Academy, Japan

92**The Multi-Scale Method Combined to the GEC Modeling for the Study of Pre-Fractal Structures with Incorporated PIN Diodes**

Sonia Mili, Chiraz Larbi Aguilil, Taoufik Aguilil

National Engineering School of Tunis, Tunisia

24**Pulse Shaping for Impulse Radio UWB**

Robert Urban, Pavel Pechac

Czech Technical University in Prague, Czech Republic

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134**Circularly Polarized Microstrip Leaky Wave Antenna Using Composite Right/Left-Handed Transmission Line**

Yoshiki Mitsuhata, Ryo Osagawa, Kazuhiro Kitatani, Yasuyuki Okamura

Osaka University, Japan

139**Robustness and Stability of a Massively Parallel Out-of-Core Solver for Solving Pure MoM Problems with Million Level Unknowns**Yu Zhang¹, Xun-Wang Zhao¹, Sio-Weng Ting², Hang Su³¹ Xidian University, China² University of Macau, China³ Lanzhou University, China**35****Vegetation Attenuation by a Single Tree for High Elevation Angles at 2.0 and 6.5 GHz**

Petr Horak, Pavel Pechac

Czech Technical University in Prague, Czech Republic

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173**Dual Layer Minkowski Radiating Shape for Reflectarray Antenna Design**

Amiruddeen Wahid, Mohamad Kamal Abdul Rahim, Farid Zubir, Sharifah Hafizah Syed Ariffin, Sharifah Kamilah Syed Yusof

Universiti Teknologi Malaysia, Malaysia

188**Numerical Analysis of Electromagnetic Bandgap Structures of Arbitrary Shapes**

Maurice Seay, Mitsuhiro Yokota

University of Miyazaki, Japan

64**On Distance Characteristics Parameters Evaluated by a Two-Ray Ground Reflection Model**

Taro Tamaki, Kazunori Uchida, Junichi Honda

Fukuoka Institute of Technology, Japan

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198**Mutual Coupling Reduction in Patch Antenna Arrays Using Corrugated Structure**

Cheng Huang, Zeyu Zhao, Qin Feng, Xiangang Luo

Chinese Academy of Sciences, China

241**Marching-on-in-Time Method with Equivalent Dipole Moment Method for Time Domain Electric Field Integral Equation**

Jaroslav Lacik

Brno University of Technology, Czech Republic

71**Outdoor/Indoor Propagation Experiment for Estimation of Interference Level Caused by Terrestrial Mobile Terminal in Satellite/Terrestrial Integrated Mobile Communication System**A. Miura, H. Watanabe, H. Tsuji, N. Hamamoto, Y. Fujino, R. Suzuki
NICT, Japan

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201**FD/DFD and FDTD Analysis of Photonic Crystals and Loss Effect on Propagation Modes**

Amin Gul Hanif, Takuji Arima, Toru Uno

Tokyo University of Agriculture and Technology, Japan

269**Investigations on Thermal Distribution and Average Power Handling Capability of Substrate-Integrated Waveguide (SIW)**

Yumei Chang, Wenquan Che, Liming Gu, Li Li

Nanjing University of Science & Technology, China

222**Coverage Prediction for ATSC interference form ISDB-T System**

Sung Woong Choi, Heon Jin Hong

Electronics and Telecommunications Research Institute, KOREA,

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213**Effect of Substrate Thickness on the Radiation Characteristics of Inductor-loaded Patch Antenna**

Hyun-Woo Cho, Tae-Young Kim, Boo-Gyoun Kim

Soongsil University, Korea

251**Evaluation of Free Space Link Budget in UWB Impulse Radio**

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Promwong, Thawatchai

Sereewattanapong, Suvepol Sittichivapak

King Mongkut's Institute of Technology Ladkrabang, Thailand.

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0930 – 0950	75 Electrically Small Antenna for a Handy Terminal Tan Watanabe ¹ , Marie Tsurunaga ² , Yasushi Hamada ² , Takahiro Inada ² , Naobumi Michishita ¹ , Yoshihide Yamada ¹ ¹ National Defense Academy, Japan ² Mazda Co., Ltd, Japan	122 Optimization of Microstrip-to-Slot Transition for Ultra-Wideband Bulk LTSA Damri Radenamad, Akira Hirose The University of Tokyo, Japan	318 Estimation Method of EUT Reflection Coefficient in TRP Measurement System Using a Spheroidal Coupler Tasuku Teshirogi, Takashi Kawamura, Aya Yamamoto, Toru Sakuma, Yasuhiko Nago Anritsu Corporation, Japan
0950 – 1010	80 A Compact Antenna in Notebook PCs for Digital Terrestrial Television Reception Ning Guan, Hiroiku Tayama, Ryouhei Hosono, Hiroataka Furuya Fujikura Ltd., Japan	124 Bandwidth of Multi-Port Microstrip-to-Waveguide Transitions in Millimeter-Wave Band Kunio Sakakibara ¹ , Daisuke Takagi ¹ , Kazuyuki Seo ² , Nobuyoshi Kikuma ¹ , Hiroshi Hirayama ¹ ¹ Nagoya Institute of Technology, Japan ² Nippon Pillar Packing Co., Ltd., Japan	332 Electromagnetic Measurement Activities at CRC of OIT Dau-Chyrr Chang Oriental Institute of Technology, Taiwan

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0910 – 0930	113 Extraction of Underwater Laver Cultivation Area by SAR Polarimetric Entropy Eun Sung Won, Kazuo Ouchi National Defense Academy, Japan	177 Analysis of Electromagnetic Backscattering by Rotating Flat Blades Ik-Hwan Choi, Ho Lim, Dong-Wook Seo, Ky-Ung Bae, Noh-Hoon Myung Korea Advanced Institute of Science and Technology, Korea	162 A Consideration of Channel Capacity of Near-Field MIMO Using Parasitic Elements Gen Matsui, Hiroshi Hirayama, Nobuyoshi Kikuma, Kunio Sakakibara Nagoya Institute of Technology, Japan
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	TA3 Small Antennas 2	TB3 Multi-Band Antennas	TC3 Millimeter Wave and Sub-Millimeter Wave Antennas 2
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1350 – 1410	103 A Card-Type RFID Antenna with a T-Type Matching Circuit for Bandwidth Enhancement Keisuke Noguchi ¹ , Tetsuo Moroya ² , Motoo Mizusawa ¹ , Shin-ichi Betsudan ¹ , Shigeru Makino ¹ , Takuro Sasaki ³ ¹ Kanazawa Institute of Technology, Japan ² Kanazawa Technical College, Japan ³ Mitsubishi Electric Corporation, Japan	159 Design and Simulation of a Slotted Diamond-Shaped Patch Antenna with Modified Ground Plane Ismahayati Adam ¹ , Ping Jack Soh ² , Nur Baya Mohd Hashim ¹ , Mohd Fareq Abdul Malek ¹ , Guy A. E. Vandenbosch ² ¹ Universiti Malaysia Perlis, Malaysia ² Universiteit Leuven, Belgium	135 Design of a 45-Degree Linearly-polarized Hollow-Waveguide Slot Two-dimensional Array Antenna with a Full-Corporate-Feed Circuit in the Lower Layer Takashi Tomura, Yohei Miura, Miao Zhang, Jiro Hirokawa, Makoto Ando Tokyo Institute of Technology, Japan
1410 – 1430	121 Design Equation for Self Resonant Structures of Very Small Normal - Mode Helical Antennas Quoc Dinh Nguyen ¹ , Naobumi Michishita ¹ , Yoshihide Yamada ¹ , Koji Nakatani ² ¹ National Defense Academy, Japan ² The Yokohama Rubber Co. Ltd, Japan	180 A Multiband Monopole Antenna with Modified Fractal Loop Parasitic Chatree Mahatthanajatuphat, Norakamon Wongsin, Prayoot Akkaraekthalin King Mongkut's University of Technology North Bangkok, Thailand	138 Bandwidth Enhancement of Microstrip Comb-Line Antenna Fed from Both Ends Atsushi Kunita ¹ , Kunio Sakakibara ¹ , Kazuyuki Seo ² , Nobuyoshi Kikuma ¹ , Hiroshi Hirayama ¹ ¹ Nagoya Institute of Technology, Japan ² Nippon Pillar Packing Co., Ltd., Japan
1430 – 1450	130 Significance of Ground Plane Size and Height in Small PIFA Hattan F. AbuTarboush ¹ , Rajagopal Nilavalan ¹ , Thomas Peter ¹ , S. W. Cheung ² ¹ Brunel University, United Kingdom ² The Hong Kong University, Hong Kong	246 A Novel Antenna Design for WLAN/WIMAX Dual-Mode Notebook Tseng Eway ¹ , Lin Albert ² , Chiou Kelvin ² , Hsiao Allen ² ¹ National Cheng Kung University, Taiwan ² Advanced-connectek Inc, Taiwan	167 Measured Performance of Microstrip-Line-Fed Broadband Waveguide Aperture Antenna Shintaro Yano, Kunio Sakakibara, Nobuyoshi Kikuma, Hiroshi Hirayama Nagoya Institute of Technology, Japan
1450 – 1510	11 Integrated Dual-Dipole Antenna for WiMax Operation in the Laptop Shun-Yun Lin ¹ , Yuan-Chih Lin ² , Jian-Rong Wu ¹ , Wen Shiang Chen ¹ ¹ Cheng Shiu University, Taiwan ² National Taipei University, Taiwan	23 A 4x4 60 GHz LTCC SIW Cavity Array Antenna Junfeng Xu ¹ , Zhining Chen ¹ , Xianming Qing ¹ , Wei Hong ² ¹ Institute for Infocomm Research, Singapore ² Southeast University, China	324 DOA Estimation Using Subarray Dividing and Interpolated ESPRIT Algorithm for Multi-Circle Conical Conformal Array Tengda Liu ¹ , Feng Yang ¹ , Peng Yang ¹ , Jun Ouyang ¹ , Haijing Zhou ² ¹ University of Electronic Science and Technology of China, China ² Institute of Applied Physics and Computational Mathematics, China

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1330 – 1350	72 Optimal Location and Number of Access Points based on Ray-Tracing and Particle Swarm Optimization Seok-Youl Yang, Dong-Wook Seo, Noh-Hoon Myung Korea Advanced Institute of Science and Technology, Korea	59 The Design of Miniature Electromagnetic Band Gap (EBG) Ground Plane Wen-Shan Chen, Bau-Yi Lee Southern Taiwan University, Taiwan	272 MIMO Sensor ~ Experimental Channel Characterization in Indoor Environment Naoki Honma ¹ , Takashi Sugiura ¹ , Kentaro Nishimori ² , Hiroaki Sato ¹ , Yoshitaka Tsunekawa ¹ ¹ Iwate University, Japan ² Niigata University, Japan
1350 – 1410	87 Hearing Aid Compatibility Improvement for Mobile Phones. Sangha Lee ¹ , Minsu Kim ¹ , Hyungchul Kim ¹ , Austin Kim ² , Jhon Lee ² , Douglas Kim ² , JungHo Park ² , Youngoo Yang ¹ ¹ Sungkyunkwan University, Korea ² Samsung Electronics, Korea	88 Transmission Area through the Small Aperture Backed by Lossy Cavity Jong-hwan Lee ¹ , Hyuk-woo Son ¹ , Ji-whan Ko ² , Young-ki Cho ¹ ¹ Kyungpook National University, Korea ² Kumoh National Institute of Technology	277 MIMO Sensor - Effectiveness of Distributed MIMO Antenna Configuration Kentaro Nishimori ¹ , Yuta Koide ¹ , Naoki Honma ² , Daiki Kuwahara ¹ , Hiroyoshi Yamada ¹ , Hideo Makino ¹ ¹ Niigata University, Japan ² Iwate University, Japan
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1430 – 1450	183 New Prediction Method Using Visibility Factor for Path Loss between Mobile Terminals in Residential Area at Micro-wave Band Wataru Yamada, Motoharu Sasaki, Naoki Kita, Takatoshi Sugiyama NTT Corporation, Japan	189 Eigenmode Analysis of Propagation Constant for a Transmission Line with Dummy Metals on a Si CMOS Substrate Yuya Ono, Takuichi Hirano, Kenichi Okada, Jiro Hirokawa, Makoto Ando Tokyo Institute of Technology, Japan	309 PAPR Reduction Method Based on Significant-Bit Scrambling for MIMO Vector-Coding Systems Yasuto Ando, Osamu Muta, Hiroshi Furukawa Kyushu University, Japan
1450 – 1510	242 Delay Profile Model in 700MHz Band for Road to Vehicle and Vehicle to Vehicle Communications Hisato Iwai, Ipppei Sugae Doshisha University, Japan	196 Metamaterials Cavity Resonator with Simultaneously Shorten Length and Width Fan-Yi Meng ^{1,2} , Fang Zhang ¹ , Qun Wu ² , Jong-Chul Lee ¹ ¹ Kwangwoon University, Korea ² Harbin Institute of Technology, China	216 Study on DOA/DOD Estimation Using a Quasi MIMO System Kazuhiro Kaneko, Takahiro Aoyagi, Hiroyoshi Yamada, Yoshio Yamaguchi Niigata University, Japan

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1530 – 1550 187 Dual Circularly Polarized Concentric Array Radial Line Slot Antenna Fed by Rotating Modes from Front and Back Sides for Satellite Application Hideki Ueda ¹ , Jiro Hirokawa ¹ , Makoto Ando ¹ , Shuichi Koreeda ² , Osamu Amano ² ¹ Tokyo Institute of Technology, Japan ² NEC/Toshiba Space Systems, Ltd., Japan	58 Estimating Antenna Bandwidth Using the Bandwidth Potential and Q Value Techniques Jussi Rahola Optenni Ltd., Finland	238 Pattern Synthesis of a Waveguide Slot Array Antenna for a Fixed Wireless Access System Teppe Tanabe, Miao Zhang, Jiro Hirokawa, Makoto Ando Tokyo Institute of Technology, Japan
1550 – 1610 195 Analysis of a Large Scale Low-Profile Narrow-Wall Slotted Waveguide Array by Parallel MoM Using Higher Order Basis Functions under MPI Circumstance Hong-Wei Zhang ¹ , Xun-Wang Zhao ¹ , Yu Zhang ¹ , Chang-Hong Liang ¹ , Hang Su ² ¹ Xidian University, China ² Lanzhou University, China	136 Bandwidth Enhancement of Two-element Diversity Antenna with Hybrid Coupler Masato Komatsu, Hiroyuki Arai Yokohama National University, Japan	258 Design of a Broadband and High Gain Antenna with an Inhomogeneous and Uni-Period Structure for Ku-band Applications Jui-Hung Chen, Chun-Yih Wu, Ta-Chun Pu, Hung-Hsuan Lin Industrial Technology Research Institute, Taiwan
1610 – 1630 260 Optimization of Radiation Pattern for Narrow-wall Slotted Waveguide Arrays Using HOBBIES Weixin Zhao ¹ , Daniel García-Doñoro ² , Yu Zhang ³ , Xunwang Zhao ³ , Tapan Sarkar ¹ ¹ Syracuse University, USA ² University Carlos III of Madrid, 2Spain ³ Xidian University, China	153 Frequency Characteristic Analysis of the Efficiency of a MIMO Array Antenna with a Matching Circuit Atsuhiko Kagaya, Kenichi Kagoshima, Shigeki Obote Ibaraki University, Japan	261 Multi-band Dipole Antenna Incorporated with Single-Band Square-Patch AMC M. Abu, M.K.A. Rahim, F. Ismail, S.H. S. Ariffin, S.K.S. Yusof and M. R. Kamarudin University Teknologi Malaysia, Malaysia
1630 – 1650 231 A Cross Polarization Suppressed Sequential Array for a Primary Radiator of a Parabolic Antenna Kazuki Ikeda ¹ , Keigo Sato ¹ , Ken-ichi Kagoshima ¹ , Shigeki Obote ¹ , Atsushi Tomiki ² , Tomoaki Yoda ² ¹ Ibaraki University, Japan ² Institute of Space and Astronautical Science, Japan	200 Impedance Characteristics of an Antenna Apertured in Metal Housing Wall of Electronic Equipment Fukuro Koshiji, Kohji Koshiji Tokyo University of Science, Japan	283 Comparative Study of Different Shape of Periodic Patch Electromagnetic Band Gap Structure for Planar Antenna Application O. Ayop, M.K.A Rahim, M.R Kamarudin, S.H.S Ariffin, S.K.S Yusof Universiti Teknologi Malaysia, Malaysia
1650 – 1710 229 Proposal and Preliminary Study of a Partially Driven Array Antenna Using Transmission Line Coupling Hiroyuki Hosono, Kenji Saegusa, Tadashi Takano Nihon University, Japan	321 Design of E-Patch Conformal Antenna on Conical Surface through Space Mapping Optimization Xuan Luo ¹ , Feng Yang ¹ , Jun Ouyang ¹ , Haijing Zhou ² ¹ University of Electronic Science and Technology of China, China ² Institute of Applied Physics and Computational Mathematics, China	333 A Leaky-Wave Antenna Using a Composite Right/Left Handed Transmission Line Tommy Wong, Chi Hou Chan, Quan Xue City University of Hong Kong, China
1710 – 1730 322 A Hybrid Method of PEC-TDS and CBF for Electromagnetic Radiation from Array Jie Yang ¹ , Feng Yang ¹ , Jun Ouyang ¹ , Biao Li ² , Xianfa Tang ² ¹ University of Electronic Science and Technology of China, China ² Academy of Engineering and Physics, China	244 Experimental Confocal Imaging for Breast Cancer Detection Using Bow-Tie Antenna Array Shinichi Kubota ¹ , Xia Xiao ² , Nobuo Sasaki ¹ , Akihiro Toya ¹ , Takahiro Kouzaki ¹ , Maiko Hanada ¹ , Takamaro Kikkawa ¹ ¹ Hiroshima University, Japan ² Tianjin University, China	335 SAR Reduction on a Portable Device Using an Intelligent Metamaterial Hsin-Lung Su ¹ , Yi-Jen Wang ² , Ken-Huang Lin ² , Chin-Yih Wu ³ , Hung-Hsuan Lin ³ ¹ National Pingtung Institute of Commerce, Taiwan ² National Sun Yat-San University, Taiwan ³ Industrial Technology Research Institute, Taiwan

25 Nov. 2010 (Thursday)		15:30 – 17:30	
	TD4	TE4	TF4
	Other Propagations	Mobile and Indoor Propagations and Millimeter and Optical Wave Propagations	EMC/EMI Simulations & Measurements and MIMO Radio Channels & Mobile Radio Communication Systems
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1550 – 1610	158 Ground-to-Air Propagation in a Dense Jungle Mauro Assis Fluminense Federal University, Brazil	284 Considerations on Indoor Propagation Concerning to Wideband Wireless LAN System Yuto Nakatsu, Hirokazu Takeno, Tomotsugu Hasegawa, Manabu Omiya Hokkaido University, Japan	74 Channel Selective RF Receiver with Spectrum Sensing System Kyoung-Joo Lee ¹ , Hee-Jong Lee ² , Jun Lee ² , Jongsik Lim ² , Young-Sik Kim ¹ , Sang-Min Han ² ¹ Korea University, Korea ² Soonchunhyang University, Korea
1610 – 1630	197 Design and Development of Fork Waveguide Output Multiplexers Ayesha Kosar Khan, Rabia Nazir, Noor M. Sheikh University of Engineering and Technology Lahore, Pakistan	286 Radio Wave Propagations through Floors in the Adjacent of a High-Speed Indoor Wireless Local Area Network Office Environment Hirokazu Takeno, Yuto Nakatsu, Tomotsugu Hasegawa, Manabu Omiya Hokkaido University, Japan	77 Performance Evaluation of Primary-Secondary Transmission in Actual Indoor Environments Tomoki Murakami, Riichi Kudo, Takeo Ichikawa, Masato Mizoguchi NTT Corporation, Japan
1630 – 1650	236 Characteristic Evaluation of Dual Polarized 4x4 MIMO through Propagation Measurement Yuki Hirota, Shinobu Nanba, Yoji Kishi KDDI R&D Laboratories Inc., Japan	311 Estimation of the Electromagnetic Fields Distribution due to Mobile Radio in a Typical Aircraft Cabin Using Large Scale FDTD Analysis S. Hiraiwa ¹ , T. Hikage ¹ , T. Nojima ¹ , S. Futatsumori ² , A. Kohmura ² , N. Yonemoto ² ¹ Hokkaido University, Japan ² Electronic Navigation Research Institute, Japan	85 BER Performance of Nonregenerative MIMO Relaying System with Phase Control Atsuki Mizuno, Daisuke Uchida, Hiroyuki Arai Yokohama National University, Japan
1650 – 1710	243 Rain Attenuation Statistics and Yearly Variability of Ka and Ku Band Satellite Signals Obtained for Twenty Years in Japan Yasuyuki Maekawa Osaka Electro-Communication University, Japan	263 Monte Carlo Modelling of Optical Radiation Propagation in Stochastic Scattering Media Boris Kargin Novosibirsk state university, Russian Federation	123 Proposal of De-Noise and Forward Relay Transmission Scheme under Interference Condition Kosuke Kinami ¹ , Naoki Honma ¹ , Kentaro Nishimori ² ¹ Iwate University ² Niigata University, Japan
1710 – 1730	274 Phase Distortion Due to the Antennas in UWB-IR Pongsan Klaiudom, Thawatchai Sereewattanapong, Mochai Chamchoy, Sathaporn Promwong King Mongkut's Institute of Technology Ladkrabang, Thailand	185 Numerical Examination of EM Wave Shadowing by Human Bodies Between Transmitter and Receiver Mitsuhiro Yokota ¹ , Tatsuya Ikegami ¹ , Yoshichika Ohta ² , Teruya Fujii ² ¹ University of Miyazaki, Japan ² Softbank Mobile Corp., Japan	84 Circular Polarized Antenna with Controlled Current Distribution by Defected Ground Structures Seok-Jae Lee ¹ , Won-Sang Yoon ² , Sun-Ju Park ¹ , Dal Ahn ¹ , Sang-Min Han ¹ ¹ Soonchunhyang University, Korea ² Samsung Tales Ltd., Korea

FA1**Small Antennas 3**

Rm. Capri 1001

276**WiMAX/MIMO Antenna Using L-Shaped Folded Monopole Antennas**Sohei Watanabe¹, Yasuo Iwamoto², Hiroshi Fujikawa², Hisashi Morishita¹¹ National Defense Academy, Japan² SMK Corporation, Japan

0830 - 0850

FB1**Adaptive and Smart Antennas and Other Antennas**

Rm. Capri 1002

208**Reconfigurable Beam Steering 3D Antenna for Intelligent Antenna System**Sang jun Ha¹, Chang won Jung¹, Yongjin Kim²¹ Seoul National University of Technology, Korea² Inha Technical College, Korea**217****A Miniatured UHF RFID Tag Antenna with Double Loop Structure**Kittima Lertsakwimarn¹, Chuwong Phongcharoenpanich¹, Kraison Aunchaleevarapan²¹ King Mongkut's Institute of Technology Ladkrabang, Thailand² Electrical and Electronic Products Testing Center, Thailand

0850 - 0910

211**Simulation of Reconfigurable Log-Periodic Microstrip Antenna**

Muhammad Faizal Ismail, Mohamad Kamal A. Rahim, Syarifah Hafizah Syed Ariffin, Syarifah Kamilah Syed Yusuf, M. Ramlee Kamarudin

Universiti Teknologi Malaysia, Malaysia

220**Investigations of Miniaturized Meander Line Tag Antenna for UHF RFID System**

Tajchai Pumpoung, Chuwong Phongcharoenpanich, Sompol Kosulvit

King Mongkut's Institute of Technology Ladkrabang, Thailand

0910 - 0930

240**Relationship between SLL and Steerable Angle of PSO-Derived Circular Antenna Array**

Nik Noordini Nik Abd Malik, Mazlina Esa, Syarifah Kamilah Syed Yusof, Shipun Anuar Hamzah

Universiti Teknologi Malaysia, Malaysia

249**Embedded Slot Antenna with V-Slot DGS**

M. Esa, M. S. Awang, N. N. N. A. Malik, N. M. A. Latiff, R. Arsat, and N. A. Samsuri

Universiti Teknologi Malaysia, Malaysia

0930 - 0950

282**Initial Weights for Improving Convergence Characteristics in Mobile Reception of the MMSE Adaptive Array for OFDM Transmission**

Hitoshi Kojima, Nobuyoshi Kikuma, Hiroshi Hirayama, Kunio Sakakibara

Nagoya Institute of Technology, Japan

259**Effect of Side Mirror as Reflector for Vehicle RFID Tag Antenna**

Dae-hwan Park, Kyeong-sik Min

Korea Maritime University, Korea

0950 - 1010

42**Fabrication and Measurement of T-DMB/GPS Mobil Antenna for Vehicular Application**Joong Han Yoon¹, Jin Woo Lee², Ji Young Park², Seung Jae Lee²¹ Silla University, Korea² HCT Co. Ltd, Korea

FC1**Antennas Measurements 3**

Rm. Capri 1003

300**Elliptical Disk Monopole Antenna with Built-in Diode for PIM-Measurement Facility Assessment**Kenji Irie¹, Nobuhiro Kuga¹, Keizo Cho²¹ Yokohama National University, Japan² NTT Docomo, Inc., Japan

0830 - 0850

FD1**Other Systems 1**

Rm. Capri 1101

56**Throughput Effects of the LTE DL due to LTE UE**

HoKyung Son

Electronics and Telecommunications Research Institute, Korea

302**Evaluation of the Performance of a Multi-Band Antenna for On-Board Applications**

Vijayashree T. Bhat, Vedaprabhu B, K. J. Vinoy

Indian Institute of Science, India

0850 - 0910

118**Improvement of DOA Estimation Accuracy of UWB Signal by Using Sub-Band Processing**

Shohei Ohaka, Mitoshi Fujimoto, Toshikazu Hori

University of Fukui, Japan

17**Design of a 2.3 GHz Band Mobile-WiMAX MIMO Antenna Using Split Ring Resonator**

Uisheon Kim, Youngki Lee, Soonyong Lee, Jaehoon Choi

Hanyang University, Korea

0910 - 0930

212**On Chip Transformer Design for CMOS Power Amplifiers**

Hyeonseok Hwang, Moonsuk Jung, Byeonghak Jo, Gyuseok Kim, Sugyeong Kim, Hyun Paek, Yoosam Na

Samsung Electro-Mechanics, Korea

150**Barium Strontium Titanate (BST) Array Antenna Covered with Hexagonal Split Ring Resonator (HSRR) Superstrate for High Gain and High Directive Antenna**

Fwen Hoon Wee, Mohd Fareq Abd Malek

Universiti Malaysia Perlis, Malaysia

0930 - 0950

328**Doherty Power Amplifier Integrating a Novel Adaptive Biasing Network**

Shichang Chen, Quan Xue

City University of Hong Kong, China

43**Experimental Study of Partially Driven Array Antennas with a Reflector**Tadashi Takano¹, Takehiro Imura², Midori Okumura³¹ Nihon University, Japan² University of Tokyo, Japan³ Tokai University, Japan

0950 - 1010

329**Adaptive Closed-Loop Phase Source**

Chengcheng Tang, Quan Xue

City University of Hong Kong, Hong Kong

FA2**Small Antennas 4**

Rm. Capri 1003

182**Reconfigurable Beam Steering Using Dipole and Loop Combined Antenna**Sangjun Ha¹, Yongjin Kim², Chang Won Jung¹¹ Seoul National University of Technology, Korea² Inha Technical College, Korea

1030 - 1050

FB2**Antenna Array 2**

Rm. Capri 1101

160**Study of Rectangular Waveguide Broad-Wall Compound Slot Equivalent Circuit Model**Ignacio Montesinos-Ortego^{1,2}, Miao Zhang², Manuel Sierra-Pérez¹, Jiro Hirokawa², Makoto Ando²¹ Universidad Politécnica de Madrid, Spain² Tokyo Institute of Technology, Japan**280****Small Circularly Polarized E-Shaped Virtually Shorted Patch Antenna**

Kwok Kan So, Kung Bo Ng, Hang Wong, Kwai Man Luk, Chi Hou Chan, Quan Xue

City University of Hong Kong, China

1050 - 1110

156**Radiation Characteristics of a Spiral GAA and a Loop GAA**

Yasushi Iitsuka, Junji Yamauchi, Hisamatsu Nakano

Hosei University, Japan

305**Ultra Low Profile Inverted L Antenna for 2.45 GHz RFID Reader**

Mitsuo Taguchi, Tetsuya Yamashita

Nagasaki University, Japan

1110 - 1130

184**An Experimental Study on an Accurate UWB Radar Imaging Method for a Target with Unknown Motion Using a Small Number of Antennas**

Yuji Matsuki, Takuya Sakamoto, Toru Sato

Kyoto University, Japan

55**Reducing the SAR Values of Mobile Terminal Antennas**

Juho Poutanen, Pertti Vainikainen

Aalto University School of Science and Technology, Finland

1130 - 1150

294**Feasibility of Dual-Polarization Operation in a Slot Array by Multi-Layer Full-Corporate Waveguide Feeds**

Miao Zhang, Jiro Hirokawa, Makoto Ando

Tokyo Institute of Technology, Japan

316**Aperture-Coupled Differentially-Fed Dielectric Resonator Antenna**Cheng-Xiang Hao¹, Bin Li¹, Kwok Wa Leung², Xin-Qing Sheng¹¹ Beijing Institute of Technology, China² City University of Hong Kong, Hong Kong

1150 - 1210

308**Analysis Design of Broad-Beam MSA Array Using Cavity BackSlot-Coupling**

Thana Puklibmoung, Piyaporn Krachodnok, Rangsan Wongsan

Suranaree University of Technology, Thailand

FC2**Planar Antennas**

Rm. Capri 1003

163**Wearable Textile Antenna: The Investigations of Flannel Fabric Layers**

Mai A. R. Osman, M. Kamal A. Rahim

University Technology Malaysia, Malaysia

FD2**RF/Microwave Filters**

Rm. Capri 1101

214**Characteristics of Dual-Band Microstrip Filter with Modified E-Shape Resonator**

Nattaset Mhudtongon, Kittisak Phaebuga, Chuwong Phongcharoenpanich

King Mongkut's Institute of Technology Ladkrabang, Thailand

1030 - 1050

175**Circularly Polarized Square Microstrip Antenna Fed by Proximity Coupling**Junho Choi¹, Sang-Min Han², Seongmin Pyo¹, Young-Sik Kim¹¹ Korea University, Korea² Soonchunhyang University, Korea

1050 - 1110

267**Novel Tri-Band Microstrip Bandpass Filter Using Crossed Open Stubs with Different Lengths**Wenjie Feng^{1,2}, Wenquan Che¹, Quan Xue²¹ Nanjing University of Science and Technology, China² City University of Hong Kong, China**194****Dual-Band Bench Feed Textile Antenna**Nurul Husna Mohd Rais¹, Mohd Fareq Abdul Malek¹, Ping Jack Soh^{1,2}, Guy A. E .Vandenbosch²¹ Universiti Malaysia Perlis, ² Katholieke Universiteit Leuven, ¹ Malaysia, ² Belgium

1110 - 1130

325**Design of Dual-Band Bandpass Filter with Controllable Bandwidths**Xiu Yin Zhang¹, Yuan Chun Li², Quan Xue², Chi Hou Chan²¹ South China University of Technology, China² City University of Hong Kong, Hong Kong**219****A Broadband Flat Antenna on Corrugated Structure**

Sittichai Dentri, Chuwong Phongcharoenpanich

King Mongkut's Institute of Technology Ladkrabang, Thailand

1130 - 1150

218**A Wideband BPF Using SIR With Wide Spurious Suppression**

Wichai Krongkitsiri, Chatree Mahatthanajatuphat, Prayoot Akkaraekthalin

King Mongkut's University of Technology North Bangkok, Thailand

228**Polarization Reconfigurable Active Antenna**

Prמוד Kumar, Mahesh P. Abegaonkar, Shibani K. Koul, Ananjan Basu,

Indian Institute of Technology Delhi, India

1150 - 1210

232**A Parallel-Coupled Microstrip Bandpass Filter with Hook Feed-Line for Wide Harmonics Rejection**

Apirada Namsang, Reungyot Lerdwanittip, Prayoot Akkaraekthalin

King Mongkut's University of Technology North Bangkok, Thailand

FA3**UWB Antennas**

Rm. Capri 1001

101**Small Planar UWB Antenna with a Trapezoid Shape Ground**

Yangjun Zhang, Yoshinori Sakurai, Toyokatsu Miyashita

Ryukoku University, Japan

FB3**Antenna Array 3**

Rm. Capri 1002

31**MIMO Antenna with Dual Polarized Slotted Strip for Next Generation Mobile Handsets**

Minseok Han, Jaehoon Choi

Hanyang University, Korea

1330 - 1350

114**A Study of a Leaf-Shaped Bowtie Antenna Backed by an Electromagnetic Band Gap Structure**

Tomoyuki Koyanagi, Manabu Yamamoto, Toshio Nojima

Hokkaido University, Japan

1350 - 1410

108**Mutual Coupling Suppression Property by Three Dimensionally Arranged EBG Structures**Yuki Kawakami¹, Toshikazu Hori¹, Mitoshi Fujimoto¹, Ryo Yamaguchi², Keizo Cho²¹ University of Fukui, Japan² NTT Docomo, Inc., Japan**172****Miniaturized UWB Antenna Using Half Printed Monopole with Ground Side Coupled Patch**

Chul-Woo Park, Seongmin Pyo, Junho Choi, Young-Sik Kim

Korea University, Korea

1410 - 1430

165**Synthesis of Shaped-Beam Reflectarray for Indoor WLAN Access Point**

Areeya Bumrungrasuk, Piyaporn Krachodnok, Rangsan Wongsan

Suranaree University of Technology, Thailand

1430 - 1450

234**Design and Analysis of Concentric Reflectarray Element**Siti Hafizah Yusop¹, Norbahiah Misran¹, Mohammad Tariqul Islam¹, Muhammad Yusof Ismail²¹ Universiti Kebangsaan Malaysia, Malaysia² Universiti Tun Hussein Onn Malaysia, Malaysia**313****Investigative Study on the Development of a Green UWB Antenna**Thomas Peter¹, Rajagopal Nilavalan¹, Hattan F. Abu Tarboush¹, S. W. Cheung², Y. F. Weng²¹ Brunel University, United Kingdom² University of Hong Kong, Hong Kong

1450 - 1510

288**FSS Sandwiched Reflectarray for Dual-Frequency Application**Jianfeng Li¹, Qiang Chen¹, Qiaowei Yuan², Kunio Sawaya¹¹ Tohoku University, Japan² Sendai National College of Technology, Japan

FC3**Millimeter Wave and Sub-Millimeter Wave Antennas and Other Antennas**

Rm. Capri 1003

279**Printed Wideband Antenna for Millimeter Wave Applications**

Kung Bo Ng, Kwok Kan So, Hang Wong, Chi Hou Chan, Kwai Man Luk, Quan Xue

City University of Hong Kong, China

1330 – 1350

FD3**Biological Effects and Medical Applications and Other Systems**

Rm. Capri 1101

147**Mutual Coupling Compensation for Microwave Image Reconstruction**

Fan Yang, Ananda Sanagavarapu Mohan

University of Technology, Australia

100**Study on Mutual Coupling of Slot Antennas on a Stratified Medium**

Paiboon Yoiyod, Monai Krairiksh

King Mongkut's Institute of Technology Ladkrabang, Thailand

1350 – 1410

287**Open-Loop Stub-Loaded Dual-Band Resonator for Solution Sensing**

Bin-Kai Ou, Daniel Piscarreta, Pedro Cheong, Wai-Wa Choi, Kam-Weng Tam

University of Macau, China

143**Harmonics Suppression for Circular Microstrip Antenna with Slits and Open Stubs**

Takeshi Kobori, Hiroyuki Arai

Yokohama National University, Japan

1410 – 1430

12**Detection of Multiple Target Distance**

Jung-Hwan Choi, Jee-Hoon Lee, Seong-Ook Park

Korea Advanced Institute of Science and Technology, Korea

148**Electrical Design of a Multi-beam Large Antenna for Satellite Payload**

So-hyeun Yun, Man-suk Uhm, In-bok Yom

Electronics and Telecommunications Research Institute, Korea

1430 – 1450

330**Microstrip Balanced Filter with Common-Mode Transmission Zero**

Jin Shi, Quan Xue

City University of Hong Kong, China

40**A Low Profile Double Finger Ring Antenna for BAN and PAN**

Hiroki Goto, Hisao Iwasaki

Shibaura Institute of Tecnology, Japan

1450 – 1510

FA4**Small Antennas and Other Antennas**

Rm. Capri 1001

326**A Wide Beamwidth Small-Size Circularly-Polarized Antenna**

Kwai-Man Luk, Biquan Wu

City University of Hong Kong, China

FB4**Reconfigurable and Multiband Antennas**

Rm. Capri 1002

29**Reconfigurable BeFoL Antenna**

Hisamatsu Nakano, Yoshiki Ogino, Junji Yamauchi

Hosei University, Japan

1530 – 1550

1550 – 1610

51**Multifunction Automobile Antennas — Conformal, Thin, with Diversity, and Smart**

Johnson J. H. Wang, David J. Triplett

Wang Electro-Opto Corporation, United States

1610 – 1630

125**The Effect of Mutual Coupling on a Small Reconfigurable Patch Antenna**

Hattan F. AbuTarboush, Rajagopal Nilavalan, Thomas Peter

Brunel University, United Kingdom

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93**A Quadratic Backscatter Antenna with Ring Focus Feed**Wanwisa Thaiwirot¹, Rangsan Wongsan¹, Monai Krairiksh²¹ Suranaree University of Technology, Thailand² King Mongkut's Institute of Technology Ladkrabang, Thailand**133****Design of Frequency-Agile Microstrip Antennas with Conical-Beam Radiation**

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94**Performance Improvement of a Gaussian Backscatter Antenna with Ring Focus Feed**Rangsan Wongsan¹, Wanwisa Thaiwirot¹, Monai Krairiksh²¹ Suranaree University of Technology, Thailand² King Mongkut's Institute of Technology Ladkrabang, Thailand**227****Experimental Investigation of Reconfigurable Harmonic Suppressed Fractal Dipole Antenna**

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Universiti Teknologi Malaysia, Malaysia

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271**Wideband Dual Mode Bandpass Filter with Wide Spurious Response Suppression**Surin Ahonnom¹, Somsin Wangkhuntod¹, Prayoot Akkaraekthalin²¹ Rajamangala University of Technology Isan, Thailand² King Mongkut's University of Technology North Bangkok, Thailand