

2016 Thailand – Japan Microwave Advance Program



TJMW2016

June 9-11, 2016

King Mongkut's University of Technology North Bangkok,
Bangkok, Thailand



THE INSTITUTE OF ELECTRONICS,
INFORMATION AND COMMUNICATION ENGINEERS

TJMW2016 Sessions and Related Events

Thursday, June 9th, 2016		
Time		Session
8:30	9:10	Registration
9:10	9:40	Opening Ceremony
9:40	10:50	Plenary Session
10:50	11:00	Break
11:00	11:40	TH1: Young Engineers Session I (Short Presentation)
11:40	12:40	Lunch
12:40	13:50	TH2: Advanced Antenna Technologies I
13:50	14:10	Break
14:10	15:40	TH1: Young Engineers Session I (Poster Presentation)
15:40	17:30	TH3: Advanced Measurement Techniques
17:30	20:00	TJMW Reception (8th floor of Multi-Laboratory Building)

Friday, June 10th, 2016		
Time		Session
9:00	10:05	FR1: Advanced Antenna Technologies II
10:05	10:25	Break
10:25	11:05	FR2: Young Engineers Session II (Short Presentation)
11:05	12:40	Lunch
12:40	14:25	FR3: Novel Passive Components and Technologies
14:25	14:45	Break
14:45	16:15	FR2: Young Engineers Session II (Poster Presentation)
16:15	17:25	FR4: Novel Wireless Systems and Technologies
17:30	20:00	TJMW Banquet (8th floor of Multi-Laboratory Building)

Saturday, June 11th, 2016		
Time		Session
9:00	10:20	SA1: Tutorial Session I
10:20	10:40	Break
10:40	12:00	SA2: Student Design Competition
12:00	13:30	Lunch
13:30	15:00	SA2: Student Design Competition
15:00	15:20	Break
15:20	16:40	SA3: Tutorial Session II (IEEE MTT-S DML Session)

<p style="text-align: center;">Opening Ceremony</p> <p style="text-align: center;">Thrusday, June 9th, 2016, 9:10-9:40</p> <p style="text-align: center;">Benjarat room, KMUTNB, Bangkok, Thailand</p> <p>Chair: Kenjiro Nishikawa, Kagoshima Univ., Japan Titipong Lertwiriayaprapa, KMUTNB, Thailand</p>	<p style="text-align: center;">TH2: Advanced Antenna Technologies I</p> <p style="text-align: center;">Thrusday, June 9th, 2016, 12:40-13:50</p> <p style="text-align: center;">Benjarat room, KMUTNB, Bangkok, Thailand</p> <p>Chair: Danai Torrungrueng, Asian U., Thailand Takuichi Hirano, Tokyo Tech., Japan</p>	<p style="text-align: center;">TH3: Advanced Measurement Techniques</p> <p style="text-align: center;">Thrusday, June 9th, 2016, 15:40-17:30</p> <p style="text-align: center;">Benjarat room, KMUTNB, Bangkok, Thailand</p> <p style="text-align: center;">Chair: Akkarat Boonpoonga, KMUTNB, Thailand Masahiro Horibe, AIST, Japan</p>	
<p>Opening Remarks Message from Prof. Panarit Sethakul, Dean of Faculty of Technical Education</p> <p>9:10</p> <p>9:20</p>	<p>TH2-01 [Invited] Gain Enhancement of 140 GHz CMOS On-chip Antenna with Optimal Ion-Irradiated-Silicon</p> <p>12:40 Junji Sato, Tomohiro Murata</p> <p>13:00 Panasonic, Japan</p>	<p>TH3-01 [Invited] Palmyra Palm Juice Dielectric Properties Over 1 to 4 GHz</p> <p>15:40 Rachen Kanahna*, Panisa Keowsawat#, Sathaporn Promwong*, Chuwong Phongcharoenpanich*</p> <p>16:00 *KMITL, Thailand,# PBRU, Thailand</p>	<p>TH3-05 The Use of Natural Resonant Frequencies for the Quality Control of Agricultural Products</p> <p>16:45 Tanawut Tantisoparak</p> <p>17:00 PBRU, Thailand</p>
<p>Opening Remarks Message from Ekachai Phakdurong, Senior Vice President - Corporate Affairs of Thaicom Public Company Limited</p> <p>9:20</p> <p>9:40</p>	<p>TH2-02 X-band H-Plane Sectoral Horn Antenna Designed with Two Balanced Screws for Tunable Bandwidth</p> <p>13:00 Ekasit Nugoolcharoenalap, Janenarong Kwunchui, Terasak Parnthepin</p> <p>13:15 RMUTR, Thailand</p>	<p>TH3-02 Frequency Optimization for Dynamic Measurements of Wide-range Moisture Content using Microwave</p> <p>16:00 Seitaro Kon, Masahiro Horibe, Yuto Kato</p> <p>16:15 AIST, Japan</p>	<p>TH3-06 Electromagnetic shielding measurements of CVD Graphene by using KEC and ASTM methods</p> <p>17:00 Yuto Kato, Masahiro Horibe, Masatou Ishihara, Masataka Hasegawa</p> <p>17:15 AIST, Japan</p>
<p style="text-align: center;">Plenary Session</p> <p style="text-align: center;">Thrusday, June 9th, 2016, 9:40-10:50</p> <p style="text-align: center;">Benjarat room, KMUTNB, Bangkok, Thailand</p> <p>Chair: Kenjiro Nishikawa, Kagoshima Univ., Japan Denchai Worasawate, Kasetsart Univ., Thailand</p>	<p>TH2-03 Basic Study on Varactor Loaded Tunable Circularly Polarized Microstrip Antenna</p> <p>13:15 Eisuke Nishiyama, Toshihiro Yamada, Ichihiko Toyoda</p> <p>13:30 Saga Univ., Japan</p> <p>TH2-04 [Invited] Effect of Mobile Phone Cylindrical Tower on the Antenna Radiation Pattern</p> <p>13:30 Kittisak Phaebua, Titipong Lertwiriayaprapa</p> <p>13:50 KMUTNB, Thailand</p>	<p>TH3-03 Watermelon Quality Classification with Reflection Coefficient</p> <p>16:15 Thanyapong Seehaumpai, Ruechukorn Pongput, Paiboon Yoiyod</p> <p>16:30 RSU, Thailand</p> <p>TH3-04 A Study on Measurement of Dielectric Property in Certain Liquid Types using an Open-ended Cut-off Waveguide with Large Bore Connector</p> <p>16:30 Kouji Shibata</p> <p>16:45 Hachinohe Inst. of Tech., Japan</p>	<p>TH3-07 GaN Diode Measurement for Rectifier Design at 5.8 GHz</p> <p>17:15 Ryoko Kishikawa*, Masahiro Horibe*, Shigeo Kawasaki#</p> <p>17:30 *AIST, Japan, #JAXA, Japan</p>
<p>Plenary Evolution of Mobile Wireless Systems and Technological Trends Towards the Next Generation 5G System Dr. Narumi Umeda</p> <p>9:40</p> <p>10:15 NTT DOCOMO, Japan</p>			
<p>Plenary Development of a Switched Beam Antenna for Wireless Communications and Agricultural Applications</p> <p>10:15 Prof. Monai Krairksh</p> <p>10:50 KMITL, Thailand</p>			

TH1: Young Engineers Session I

Thursday, June 9th, 2016, 11:00-11:40 Oral, 14:10-15:40 Poster

Chairs: Tuptim Angkaew Chulalongkorn Univ., Thailand
Shoichi Narahashi, NTT DOCOMO, Japan / Kenji Itoh, KIT, Japan

<p>TH1-01 Tag Antenna for Wireless Power Transfer in High Frequency Radio Frequency Identification Systems 13.56 MHz Patcharathorn Poonkate, Kamonchanok Janthongsri, Supakit Kawdungta RMUTL, Thailand</p>	<p>TH1-07 Experimental study on a resonance characteristics of a stacked dielectric resonator for the two dielectric resonator method Yusaku Hirano, Takashi Shimizu, Yoshinori Kogami Utsunomiya Univ., Japan</p>	<p>TH1-13 Millimetre-Wave Characteristics of Coplanar Waveguide on GaAs Substrate Atsushi Takeshige, Kosuke Katayama, Kyoya Takano, Takeshi Yoshida, Minoru Fujishima, Shuhei Amakawa Hiroshima Univ., Japan</p>	<p>TH1-19 Design of Dual-Band Rectifier Using Microstrip Spurline Notch Filter Koshi Hamano*, Ryuya Tanaka*, Satoshi Yoshida*, Akihira Miyachi#, Kenjiro Nishikawa*, Shigeo Kawasaki# *Kagoshima Univ., Japan, #JAXA, Japan</p>
<p>TH1-02 Radio Wave Propagation Loss Model in forest for Low Energy WSN Tatsuki Tokunou, Ryohei Yamane, Toshihiko Hamasaki HIT, Japan</p>	<p>TH1-08 Pyramidal Electromagnetic Absorber Made by Latex Kiadtisak Salalong, Titipong Lertwiriayaprapa KMUTNB, Thailand</p>	<p>TH1-14 A DUAL BAND MINKOWSKI FSS FOR LTE AND RF ALTIMETER SYSTEM. Teerapat Wannasirimongkol*, Apirada Namsang*, Pongsathorn Chomtong# *CATC, Thailand, #KMUTNB, Thailand</p>	<p>TH1-20 Sensing Hardpan Characteristic using STMPM Nattawat Chantasen*, Akkarat Boonpoonga*, Kamol Kaemarungsi#, Krit Athikulwongse# *KMUTNB, Thailand, #NTSDA, Thailand</p>
<p>TH1-03 A Dipole Antenna using Sierpinski Carpet Fractal Technique for RF Altimeter System. Jirada Thongbai*, Apirada Namsang*, Pongsathorn Chomtong# *CATC, Thailand, #KMUTNB, Thailand</p>	<p>TH1-09 Heuristic UTD Corner Diffraction for Antenna Problem Awika Pimpatang, Titipong Lertwiriayaprapa KMUTNB, Thailand</p>	<p>TH1-15 Design of Waveguide BandPass Filter using Cascaded Irises Nattapong Intarawiset, Somsak Akatimagool KMUTNB, Thailand</p>	<p>TH1-21 5.8 GHz Rectifier Circuit for Electromagnetic Energy Harvesting System Mr.Warayut Samakkhee KMUTNB, Thailand</p>
<p>TH1-04 Design of Multistage Microstrip Filtering Antenna by Using Parameter Extraction Method Kazuhiro Sato, Masataka Ohira, Zhewang Ma Saitama Univ., Japan</p>	<p>TH1-10 Study on Characteristics of a Single-Mode Resonator for Microwave Heating Daichi Nishio, Naoki Shinohara, Tomohiko Mitani Kyoto Univ., Japan</p>	<p>TH1-16 Lumped-Element Reversed-Phase Power Divider Using LC-Ladder Circuits at UHF Band Takuya Matsuda, Tadashi Kawai, Akira Enokihara Univ. of Hyogo, Japan</p>	<p>TH1-22 Design of CMOS Vector Sum Phase Shifter Shungo Ishii, Takana Kaho, Ramesh Pokharel Kyushu Univ., Japan</p>
<p>TH1-05 A Dual-Band Star Chain Fractal CPW Antenna for LTE and RF Altimeter Systems Raviroj Somvadee*, Apirada Namsang*, Pongsathorn Chomthong# *CATC, Thailand, #KMUTNB, Thailand</p>	<p>TH1-11 Microstrip Patch Antenna using Metasurface for Universal UHF RFID Reader Pawares Vijitsulakkana, Wanwisa Thaiwirot, Prayoot Akkarackthalin KMUTNB, Thailand</p>	<p>TH1-17 Design of Quarter-Wave-Like Transformers QWLTs Implemented Using Conjugately Characteristic-Impedance Transmission Lines CCITLs Itthinat Jongsuebchoke, Danai Torrungrueng Asian U., Thailand</p>	
<p>TH1-06 Power Repeater Antenna for High Frequency HF RFID Reader Pinitnai Sittithai, Titipong Lertwiriayaprapa, Kittisak Phaebua KMUTNB, Thailand</p>	<p>TH1-12 Moisture content sensor detecting difference of mutual coupling magnitude between parallel and perpendicular dipole antennas. Chattapon Rienthong, Chainarong Kittiyapunya, Monai Krairiksh KMITL, Thailand</p>	<p>TH1-18 High-resolution Radar Identification using Deconvolution Technique Lakkhana Bannawat, Akkarat Boonpoonga KMUTNB, Thailand</p>	

<p align="center">FR1: Advanced Antenna Technologies II Friday, June 10th, 2016, 9:00-10:05 Benjarat room, KMUTNB, Bangkok, Thailand</p> <p>Chair: Kittisak Phaebua, KMUTNB, Thailand Eisuke Nishiyama, Saga Univ., Japan</p>	<p align="center">FR3: Novel Passive Components and Technologies Friday, June 10th, 2016, 12:40-14:25 Benjarat room, KMUTNB, Bangkok, Thailand</p> <p>Chair: Pongsathorn Chomtung, KMUTNB, Thailand Tadashi Kawai, Univ. of Hyougo., Japan</p>	<p align="center">FR4: Novel Wireless Systems and Technologies Friday, June 10th, 2016, 16:15-17:25 Benjarat room, KMUTNB, Bangkok, Thailand</p> <p>Chair: Ekkasit Nugoolcharoenalap, RMUTR, Thailand Toshihiko Hamasaki, HIT, Japan</p>	
<p>FR1-01 [Invited] A Multi-Band Circularly Polarized Spiral Antenna</p> <p>9:00 Mayumi Matsunaga</p> <p>9:20 Ehime Univ., Japan</p>	<p>FR3-01 [Invited] Experimental Study on Linvill's Negative Impedance Converters for Generation of Pure Non-Foster Reactance</p> <p>12:40 Yasushi Horii</p> <p>13:00 Kansai Univ., Japan</p>	<p>FR4-01 [Invited] KNACKSAT-CubeSat Project and the Initiation of Thai Aerospace Industry</p> <p>16:15 Phongsatorn Saisutjarit, Suramate Chalermwisutkul, Sawangtit Srikitisuvan, Dheeraporn Saenthawee, Prayoot Akkaraekthalin, Suwat Suwat Kuntananreedda KMUTNB, Thailand</p> <p>16:35</p>	
<p>FR1-02 A Flower-Like Shaped Monopole Antenna for UWB Applications</p> <p>9:20 Patarawan Chumsayan, Khumpi Rungklin, Anuwat Santaweek, Pakornkiat Sawetmethikul RMUTT, Thailand</p> <p>9:35</p>	<p>FR3-02 [Invited] UWB Bandpass Filter With Notched Band and Sharp Rejection Using Folded Defected Ground Structure</p> <p>13:00 Mongkol Meeloon*, Prayoot Akkaraekthalin#</p> <p>13:20 *DSI, Thailand, #KMUNB, Thailand</p>	<p>FR4-02 Beam Control Scheme and Its RF Block Configuration for a Phased Array Antenna System Employing Phase-Controlled Local Signals</p> <p>16:35 Hiroshi Okazaki, Atsushi Fukuda, Shoichi Narahashi</p> <p>16:50 NTT DOCOMO, Japan</p>	
<p>FR1-03 A 4 x 4 Pentagonal Patch Array Antenna for Breast Cancer Detection</p> <p>9:35 Takuichi Hirano*, Takamaro Kikkawa#</p> <p>9:50 *Tokyo Tech., Japan, #Hiroshima Univ., Japan</p>	<p>FR3-03 Physical Realization and Systematic Design of Microwave Bandpass Filters with Generalized Chebyshev Function Resonance</p> <p>13:20 Masataka Ohira, Zhewang Ma</p> <p>13:35 Saitama Univ., Japan</p>	<p>FR4-03 Novel Synthesizing Technique for Interference Rejection in Future Integrated Base Station</p> <p>16:50 Jessada Konpang, Muhammad Sandhu, Nutapong Somjit, Ian Hunter</p> <p>17:05 Univ. of Leeds, United Kingdom</p>	
<p>FR1-04 A Low-profile Antenna with Bi-directional Beam Pattern Using Microstrip Element</p> <p>9:50 Takeshi Fukusako, Yuki Ogata</p> <p>10:05 Kumamoto Univ., Japan</p>	<p>FR3-04 An Experimental Study on Half-Mode Type LH Ferrite Waveguide</p> <p>13:35 Sho Yasugi, Kensuke Okubo, Mitsuyoshi Kishihara, Hironori Takimoto</p> <p>13:50 Okayama Pref. Univ., Japan</p>	<p>FR4-04 [Invited] Direct RF Undersampling Receiver for High-SHF Applications</p> <p>17:05 Noriharu Suematsu, Keita Norishima, Tomokazu Koizumi, Takeo Owada, Mizuki Motoyoshi, and Suguru Kameda</p> <p>17:25 Tohoku Univ., Japan</p>	
	<p>FR3-05 Dielectric Waveguides for Millimeter and Terahertz Frequency Applications</p> <p>13:50 Masahiro Horibe*, Yuto Kato, Sietaro Kon*, Dai Fukami#, Hiroyuki Yoshimoto#</p> <p>14:05 *AIST, Japan, # Daikin Industries, Inc..</p>		
	<p>FR3-06 [Invited] Transmission Characteristics of Dielectric-tube-supported Metal Rod Transmission Line as a Flexible Transmission Medium in Frequency ranges from DC to</p> <p>14:05 Futoshi Kuroki, Satoshi Kitabayashi</p> <p>14:25 NIT, Kure, Japan</p>		

FR2: Young Engineers Session II

Friday, June 10th, 2016, 10:25-11:05 Oral, 14:45-16:15 Poster

Chairs: Tuptim Angkaew Chulalongkorn Univ., Thailand
Shoichi Narahashi, NTT DOCOMO, Japan / Kenji Itoh, KIT, Japan

<p>FR2-01 Bent Loop Antenna for NFC Reader in the Centrifuge Machine</p> <p>Kamonchanok Janthongsri, Patcharathorn Poonkate, Archareeyaporn Jantharacha, Supakit Kawdungta RMUTL, Thailand</p>	<p>FR2-07 Design of Multiband CPW-fed Monopole Antenna using Slot Line Resonant Filter for WLAN/WiMAX Applications</p> <p>Nipont Tangthong, Somsak Akatimagool KMUTNB, Thailand</p>	<p>FR2-13 Planar Near-field to Far-field System for a Small Scattering Object Measurement</p> <p>Sangwon Kittiwittayapong, Kittisak Phaebuga, Pinitnai Sittithai, Titipong Lertwiriyaprapa KMUTNB, Thailand</p>	<p>FR2-19 Impedance Matching Improvement UHF RFID for Single Layer Dual Mode Antenna</p> <p>Fareeda Hookhiao, Dr.Denchai Worasawate KU, Thailand</p>
<p>FR2-02 Study on Re-radiation Characteristics of Rectenna Harmonics for a Harmonic-Based Retrodirective System</p> <p>Shogo Kawashima, Naoki Shinohara, Tomohiko Mitani Kyoto Univ., Japan</p>	<p>FR2-08 Experimental study on the appropriate load force on the dielectric plate in a circular cavity resonator for the complex permittivity measurement</p> <p>Yu Mogami, Naoki Yamada, Takashi Shimizu, Yoshinori Kogami Utsunomiya Univ., Japan</p>	<p>FR2-14 Broadband, Flat-gain, and High Linearity GaN HEMT LNA for Mobile Base Station</p> <p>Masanobu Tsujii*, Koshi Hamano*, Kenjiro Nishikawa*, Kunihiro Kawai#, Hiroshi Okazaki#, Shoichi Narahashi# *Kagoshima Univ., Japan, #NTT DOCOMO, Japan</p>	<p>FR2-20 Nonreciprocal microwave transmission of a magneto chiral metamolecule</p> <p>Toshiyuki Kodama*, Satoshi Okamoto#, Nobuaki Kikuchi#, Osamu Kitakami#, Satoshi Tomita*, Nobuyoshi Hosoi*, Hisao Yanagi* *NAIST, Japan, # IMRAM, Japan</p>
<p>FR2-03 A Dipole Antenna Using Minkowski Fractal Technique For RF Altimeter System</p> <p>Supichaya Sittitamarat*, Apirada Namsang*, Pongsathorn Chomtong# *CATC, Thailand, #KMUTNB, Thailand</p>	<p>FR2-09 Element Spacing Optimization for 2 by 2 Arrays</p> <p>Kirote Arpanutud*, Denchai Worasawate*, La-or Kovavisaruch#, Kazuhiko Fukawa** *KU, Thailand, #NECTC, Thailand, **Tokyo Tech., Japan</p>	<p>FR2-15 Multistep Hook Bandpass Filter</p> <p>Ramon Siangcharee, Reungyot Lerdwanittip, Apirada Namsang CATC, Thailand</p>	<p>FR2-21 High Resolution Short-range Radar with Near-field Calibration Technique</p> <p>Feaveya Kheawprae, Akkarat Boonpoonga KMUTNB, Thailand</p>
<p>FR2-04 Radiation Characteristics of Microstrip Line Array Antenna in 60GHz Bands</p> <p>Kaiji Nakahara, Kuroki Futoshi NIT, Kure, Japan</p>	<p>FR2-10 A Simple and Fast Tuning Technique for Direct-coupled Resonator Filter Design</p> <p>Ryo Tomita, Masakata Ohira, Zhewang Ma Saitama Univ., Japan</p>	<p>FR2-16 Design of 500-900MHz Band Tunable CMOS Power Amplifier</p> <p>Taiga Akiyama, Ramesh Pokharel Kyushu Univ., Japan</p>	<p>FR2-22 Double step impedance dumbbells dual-band bandpass filter</p> <p>Pongakorn Amornpiyaong*, Apirada Namseng#, Reungyot Lerdwanittip# *CATC, Thailand, #KMUTNB, Thailand</p>
<p>FR2-05 Slot Antenna using Capacitive CPW and Meander Line Stub</p> <p>P. Chomtong, S. Meesomklin, P. Akkarakthalin KMUTNB, Thailand</p>	<p>FR2-11 A Printed Ultra-Wideband Antenna with Dual-Band Notch Function</p> <p>Nonchanutt Chudpooti*, Pichet Moeikham#, Prayoot Akkarakthalin* *KMUTNB, Thailand, #RMUTL, Thailand</p>	<p>FR2-17 Design of Inter-Digital Hairpin Bandpass Filter with Narrow Band Rejection</p> <p>Kanyawit Klinbumrung*, Rattapang Jeenawong#, Somsak Akatimagool* *KMUTNB, Thailand, #RMUTT, Thailand</p>	
<p>FR2-06 Microstrip Line Type Spiral Antenna for M2M Applications in UHF Frequency Bands</p> <p>Keishi Okamura, Futoshi Kuroki NIT Kure, Japan</p>	<p>FR2-12 An ultra-low-power RF-impulse transmitter for sensor networks employing energy harvesting</p> <p>Takayoshi Obara, Yosuke Ishikawa, Sho Ikeda, Hiroyuki Ito, Noboru Ishihara, Shiro Doshio, Kazuya Masu Tokyo Tech., Japan</p>	<p>FR2-18 A 50 GHz-Band Varactor-Tuned Injection Locked Dynamic Frequency Divider in 65 nm CMOS</p> <p>Masafumi Kazuno, Mizuki Motoyoshi, Suguru Kameda, Noriharu Suematsu Tohoku Univ., Japan</p>	

SA1: Tutorial Session I Thursday, June 11th, 2016, 9:00-10:20 52-216 room, KMUTNB, Bangkok, Thailand		SA2: Student Design Competition Thursday, June 11th, 2016, 10:40-15:00 52-216 room, KMUTNB, Bangkok, Thailand		SA3: Tutorial Session II IEEE MTT-S DML Session Thursday, June 11th, 2016, 15:20-16:40 52-216 room, KMUTNB, Bangkok, Thailand		Closing Session Thursday, June 11th, 2016, 16:40-16:50 52-216 room, KMUTNB, Bangkok, Thailand	
Chair:	Titipong Lertwiriaprapa, KMUTNB, Thailand	Chair:	Tuptim Angkaew, Chulalongkorn Univ., Thailand Junji Sato, Panasonic, Japan	Chair:	Chair: Kittisak Phaebua, KMUTNB, Thailand	Chair:	Titipong Lertwiriaprapa, KMUTNB
SA1-01	Microwave Planar Bandpass Filter Design for Student Design Competition	SA2		SA3-01	Wireless Power Transfer via Radiowaves (Wave Series)	Closing Remarks	
9:00	Prof. Masataka Ohira	10:40	Student Design Competition	15:20	Prof. Naoki Shinohara	16:40	Kenjiro Nishikawa
10:20	Saitama Univ., Japan	15:00		16:40	Kyoto Univ., Japan	16:50	Kagoshima Univ.

Date of issue: May 19, 2016, Revision 6