

International Conference on Microwave and THz Technologies, Photonics and Wireless Communications

IRPhE' 2016

PROGRAM

May 4-6, 2016-Yerevan, Armenia



Organized by: Institute of Radiophysics and Electronics, National Academy of Sciences



Partners:



State Committee of
Science of Armenia

IRPhE' 2016 Main Topics:

- **Microwave devices, antennas, propagations and remote sensing**
- **THz technique, spectroscopy and applications**
- **Photonics**
- **Wireless communications and related information technologies**
- **Alternative semiconductor and dielectric materials, electronic devices**

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04 May, Wednesday

09-10	Registration	
10-12:30	The jubilee ceremony devoted to academician Radik Martirosyan (President of National Academy of Sciences)	
12:30-14:00	Welcome Reception	
14:00-14:30	Opening of IRPhE’2016	
Keynote speech:	Radik M. Martirosyan National Academy of Sciences, Armenia	Historical overview of Radiophysics (Microwave engineering) development in Armenia
Photonics (Ph) Chairman: Prof. Shunri Oda		
14.30 -15:00 Plenary speech	Andrea Melloni <i>Politecnico di Milano, Italy</i>	Ph-1: Control and calibration of photonics integrated circuits
15:00 -15:15	<u>Aram Papoyan</u> , S. Shmavonyan, A. Khanbekyan, M. Movsisyan, H. Azizbekyan <i>Institute for Physical Research</i>	Ph-2: Three-axis optical Hanle vector magnetometer
15:15 - 15:30	<u>Hovik Baghdasaryan</u> , M. Knyazyan, T.T. Hovhannisyan, M. Marciniak <i>National Polytechnic University of Armenia</i>	Ph-3: Conditions of single-frequency radiation from fiber laser with FBG mirrors: numerical analysis by the method of single expression
15:30 -16:00 Invited	<u>Kiejn Lee</u> , Shant Arakelyan, Hanju Lee, Sunghoon Jeon , Do-Suck Han, G. Berthiau, Arsen Babajanyan <i>Sogang University, Korea</i>	Ph-4: Microwave and Joule heating visualization by thermo-elastic sensor for carbon fibers composite material
16:00 - 16:15	Hovhannes Haroyan <i>Yerevan State University, Armenia</i>	Ph-5: Slot Nano-Antenna Integrated with Plasmonic Waveguide
16:15 -16:45	Vitaly Morarenko <i>Keysight Technologies, Russia</i>	Ph-6: Detecting of complex modulated optical signals and optical modulation analysis for gigabit and terabit transmission lines
16:45 -17:00	<u>Tabassom Sedighi</u> ,P. D. Foote <i>Cranfield University,UK</i>	Ph-7: Bayesian network-based intermittent fault detection in photonic systems

05 May, Thursday

Wireless communications and related information technologies, (WL) Chairman: Prof. Garik Markarian		
09:30-10:00 Plenary speech	<u>Garik Markarian</u> , Stuart Grant, Denis Kolev <i>Lancaster University, UK</i>	WL-1: From quality of service to quality of life: How advances in wireless technologies found their way in modern healthcare
10:00-10:30 Invited	Maksim Sokovishin <i>Keysight Technologies, Russia</i>	WL-2: Defining a channel sounding measurement system for characterization of 5G air interfaces <hr/> WL-3: WLAN at 60 GHz. signal creation and demodulation.
10:30-10:45	<u>Hayk Manukyan</u> , P. Sahu, D. Sehrawat, R. Ganeshe <i>Cobham Wireless, UK</i>	WL-4: Mobile wireless communications test and measurement technologies development toward 5G
10:45-11:00	Suren Eyrarnjyan <i>National Instruments, Armenia</i>	WL-5: National Instruments technologies in 5G research and prototyping
11:00-11:15	<u>Gurgen Khachatrian</u> <i>American University of Armenia</i>	WL-6: Security challenges of cloud computation
11:15-11:30	H.Haroyan, G.Harutyunyan, T. Harutyunyan, <u>Sargis Sargsyan</u> <i>YSU, “Antel Design” Armenia</i>	WL-7: Spectral efficiency improvement in nonlinear wireless systems
11:30-11:50	<u>Karen Nikoghosyan</u> , <u>George Yeghoyan</u> <i>Redinet CJSC, Armenia</i>	WL-8: Green communication for GSM Network <hr/> WL-9: Renewable Hybrid Off-Grid Power Solution for GSM Network
11:50-13:00	Coffee break Poster Session & Exhibition: Keysight Technologies & National Instruments	
13:00-14:00	LUNCH	

THz technique, spectroscopy and applications (I-session), (TH)		
Chairman: Prof. Sergey Vainshtein		
14:00-14:40 Plenary speech	Sergey Vainshtein <i>University of Oulu, Finland</i>	TH-1: From miniature, low-power-consumption sub-THz emitter based on collapsing domain phenomenon to mm-wave pulsed radars and transmission/reflection imagers with sub-ps time-of-flight precision.
14:40-14:55	Martin Ayvazyan <i>National Polytechnic University of Armenia</i>	TH-2: Waveguide junctions with various cross sections for the Terahertz range
14:55-15:10	M. Klos, R. Bartholdt, J. Klier, J.-F. Lampin, <u>Garik Torosyan</u> , R. Beigang <i>Institute for Physical Measurement Techniques, Germany</i>	TH-3: Photoconductive antennas based on low temperature grown GaAs on silicon substrates for broadband Terahertz generation and detection
15:10-15:40 Invited	Alexei O. Orlov, Gergo P. Szakmany, Gary H. Bernstein, and Wolfgang Porod <i>University of Notre Dame, USA</i>	TH-4: Integrated nanoscale thermoelectric converters of Infrared and Terahertz irradiation
15:40-15:55	Coffee Break	
THz technique, spectroscopy and applications (II-session)		
Chairman: Prof. Seizi Nishizawa		
15:55-16:25 Invited	Seizi Nishizawa, Eugene H. Morita, Takeshi Nagashima, Katsuko S. Furukawa, and Takashi Ushida <i>University of Fukui, Japan</i>	TH-5: Progressive THz spectrometric technologies applied for non-invasive evaluation of bio-medical tissues
16:25-16:40	<u>Viataly Kalantaryan</u> , R. Martirosyan, Yu. Babayan, H. Badalyan, S.Yayloyan <i>Yerevan State University, Armenia</i>	TH-6: What is the primary target of the action millimeter waves on biological objects?
16:40-16:55	<u>Anahit Nikoghosyan</u> , T. He, J.Shen, R.M. Martirosyan <i>Yerevan State University, Armenia</i>	TH-7: Dielectric anizotropy of human bone in spectral range 0.2 to 2.5 THz
16:55-17:10	<u>Gevorg Abgaryan</u> , Yu. H. Avetisyan, A. H. Makaryan, V. R. Tadevosyan <i>Yerevan State University, Armenia</i>	TH-8: Terahertz pulses generation via optical rectification in LiNbO3 crystal by step-wise phase mask

17:20-19:00

Sightseeing Tour

06 May, Friday

Alternative semiconductor materials, electronic devices, (EL) Chairman: Prof. Alexei Orlov		
09:30-10:00 Plenary speech	Shunri Oda <i>Tokyo Institute of Technology, Japan</i>	EL-1: Silicon quantum dots for future electronics and photonics
10:00-10:30 Invited	Gyorgy Csaba, Gary Bernstein, Sharon Hu, Michael Niemier, Alexei Orlov, <u>Wolfgang Porod</u> <i>University of Notre Dame, USA</i>	EL-2: Nanomagnet Logic
10:30-10:45	Arsen Hakhoumian, Karapet Avjian, Lenrik Matevosian, Nubar Poghosian and <u>Zhyrair Gevorkian</u> <i>IRPhE, Armenia</i>	EL-3: Dielectric properties of $CH_3NH_3Pb_{3-x}Cl_x$ perovskites from polymer dielectric interface
10:45-11:00	Levon Hovakimian <i>IRPhE, Armenia</i>	EL-4: On electron holographic phase imaging of threading dislocations
11:00-11:15	<u>Arsen Babajanyan</u> , Sul A Choi, Kyungchul Kim, Hanju Lee, Barry Friedman, Kiejn Lee <i>Yerevan State University, Armenia</i>	EL-5: Pre-annealing effects on a pentacene organic thin film transistor with a polymer dielectric interface
11:15-11:30	<u>Ashkhen Yesayan</u> , Stepan Petrosyan, Farzan Jazaeri, Jean-Michel Sallese <i>IRPhE, Armenia</i>	EL-6: The effect of interface traps on electrical characteristics of nanowires and nanowire junctionless FETs
11:30-11:45	<u>Arcruni Margaryan</u> , Stepan Petrosyan, Lenrik Matevosyan, Karapet Avjyan <i>IRPhE, Armenia</i>	EL-7: Two dimensional coordinate-sensitive photodetectors based on (p)InSb - (n)CdTe heterojunction
11:45-12:00	Stepan Petrosyan, <u>Varsenik Khachatryan</u> , A. Yesayan, Suren Nersesyan <i>Russian-Armenian University, Armenia</i>	EL-8: Influence of surface recombination on the open circuit voltage of the nanowire solar cells with radial p-n junction
12:00-13:00	LUNCH	
Microwave devices, antennas, propagations and remote sensing, (MT) Chairman: Prof. Kiejn Lee		
13:00-13:30 Plenary speech	Boris Kutuza <i>Institute of Radio Engineering & Electronics. Moscow, Russia.</i>	MT-1: Principles of Earth Microwave radiometry from space
13:30-13:45	<u>Artashes Arakelyan</u> , A. Hambaryan, A.A.Arakelyan <i>ECOSERV Remote Observation Centre Co. Ltd., Armenia</i>	MT-2: A new approach in local and global anti-hail protection technique

13:45-14:00	<u>Norayr Khachatryan</u> , R. Ter-Antonyan <i>National Institute of Metrology, Armenia</i>	MT-3: The new dual-reflector axisymmetric antenna with circular generatrix the main reflector
14:00-14:15	Apet Barsegyan <i>Integra Technologies Inc., USA</i>	MT-4: 1.6-Kilowatt GaN-based L-band pallet Amplifier
14:15-14:30	<u>M. Ivanyan</u> , N. Khachatryan, E. Tagvoryan <i>National Institute of Metrology, Armenia</i>	MT-5: Features of radar cross-section determination using near-field measurements
14:30-14:45	A. Hakhoumian, N.G. Poghosyan, <u>Tigran Zakaryan</u> <i>IRPhE, Armenia</i>	MT-6: Estimation of Phase Noise Impact on MTI Performance in FM-CW Radars
14:45-15:00	A.Hakhoumian, T. Zakaryan, <u>Eduard Sivolenko</u> <i>IRPhE, Armenia</i>	MT-7: Pedestrian caused Doppler signal detection by bispectrum processing in Ku-Band coherent CW Radar
15:00-15:15	<u>Edvard Rostomyan</u> <i>IRPhE, Armenia</i>	MT-8: Dynamics of Buneman instability in plasma-filled devices for microwave generations
15:15-15:30	A. Margaryan, R. Ajvazyan, J. Annand, H. Elbakyan, L. Gevorgian, S. Zhamkochyan <i>Alikhanyan National Science Laboratory,</i>	MT-9: A radio frequency spiral scanning deflector for keV electrons
15:30-16:00	Discussion, Closing IRPhE' 2016	
19:00	Gala Dinner	

12:00-13:00, 05 May, Thursday

Poster Session	
<u>A.S. Nikoghosyan</u> , T. He, J. Shen, R.M. Martirosyan, M.Yu. Tunyan, A.V. Papikyan, A.A. Papikyan <i>YSU, Armenia</i>	TH-9: Optical properties of human bone and CERABONE® in the Terahertz range
<u>A.S. Nikoghosyan</u> , Sh. Arakelyan <i>YSU, Armenia</i>	TH-10: THz waves propagation in a LiNbO ₃ wedge antenna
D. Bagdasaryan, A. Hakhoumian, R. Martirosian, A. Makaryan, V. Tadevosyan, F. Nazari, <u>A. Julfayan</u> <i>IRPhE, Armenia</i>	TH-11: Ferromagnetic detector of infrared radiation

<u>T. Abrahamyan</u> , St. Sargsyan, A. Babajanyan, Kh.Nerkararyan <i>YSU, Armenia</i>	PH-8: Detection of resonant oscillations of the liquid surface by using a tapered fiber opto-mechanical sensor
<u>S. Nerkararyan</u> , A. Babajanyan, Kh. Nerkararyan, <i>YSU, Armenia</i>	PH-9: The resonant coupling of the quantum dots in the environment of metal nanoparticle at optical frequencies
R. V. Ter-Antonyan <i>National Institute of Metrology, Armenia</i> R. V. Ter-Antonyan <i>National Institute of Metrology, Armenia</i>	MT-10: On radio physical design of the Dual-Reflector Radio Telescope with a fixed main spherical reflector and a movable subreflector type Gregory MT-11: Practically Interesting Subreflector for the spherical reflector located under Caustic
G.Avetisyan <i>IRPhE, Armenia</i>	MT-12: Change of flux density characteristic of the radio source Cassiopeia A for the period 2008-2015 years
<u>O. Mahmoodian</u> , A. Hakhoumian, N. Pogosyan and V. Mckhitarian <i>IRPhE, Armenia</i>	MT-13: Conical Bessel beam radial line slot antenna
S. Petrosyan, A. Yesayan, <u>S.Nersesyan</u> and V.A. Khachatryan <i>IRPhE, Armenia</i>	EL-9: Capacitance of MOS structures based on inhomogeneously doped semiconductor nanowires and nanospheres
S. Petrosyan, S. Nersesyan, A.Yesayan and <u>V.A. Khachatryan</u> <i>IRPhE, Armenia</i>	EL-10: Critical radius of full depletion in semiconductor nanowires
<u>L. Matevosyan</u> , A. Kechiantz, K. Avjyan, E. Zaretskaya <i>IRPhE, Armenia</i>	EL-11: Preparation technology and optical properties of $\text{CH}_3\text{NH}_3\text{PbI}_{3-x}\text{Cl}_x$ perovskite thin films