

VIII INTERNATIONAL CONFERENCE
ON ANTENNA THEORY
AND TECHNIQUES

*To the memory
of antenna science Atlantes
Pistol Kors A.A., Zelkin Y.G.,
Bakhrakh L.D.*



PROGRAM

Kyiv, Ukraine
September 20-23, 2011

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WELCOME TO ICATT'11

Dear colleagues,

We are happy to welcome the participants of the VIII International Conference on Antenna Theory and Techniques (ICATT'11), being held at the National Technical University of Ukraine "Kyiv Polytechnic Institute". This Conference is dedicated to the fond memory of three outstanding scientists in the antenna field whose jubilee dates fall on 2011, namely: Corresponding Member of the Academy of Sciences of the USSR Aleksander A. Piskorski; Professor Yefim G. Zelkin; Corresponding Member of the Academy of Sciences of the USSR Lev D. Bakhrakh. They contributed fundamentally to the antenna theory and engineering, to the development of many unique antennas, to wonderful textbooks and monographs. Especially noteworthy are their efforts to establish a friendly antenna community in the USSR and to organizing the annually held "Piskorski" antenna conferences. ICATTs have become their successors and gather antenna specialists from the former Soviet Republics, as well as prominent scientists from many countries all over the world.

Totally, the ICATT'11 Technical Program Committee has accepted over 100 papers for presentation at 4 plenary and 10 section sessions. As always, the Conference organizers paid special attention to invited papers presented by highly skilled scientists in different fields of the state-of-the-art antenna theory and techniques. No doubts this will raise the scientific level and significance of the Conference and will be greatly useful for young scientists.

It is already the third ICATT being held in the capital of Ukraine—the beautiful city of Kyiv whose glory is in its rich history and in a lot of wonderful parks, places and memorials. On the one hand, this is tribute to and recognition of the high level of Kyiv antenna science and engineering. On the other hand, this is due to the warm hospitality and excellent work conditions, which are provided by the staff of NTUU "KPI". We would like to thank very much the Chairman of the ICATT'11 Organizing Committee Rector of the NTUU "KPI" Academician Mykhaylo Z. Zgurovsky as well as everybody of the Organizing Committee and Antenna Group of the Department of Theoretical Foundations of Radio Engineering, who made all their best this Conference to be successful.

We would like also to thank all the participants who contributed to the success of ICATT'11 and made the Conference a reality.

We also wish to express our gratitude to ICATT'11 sponsors for their financial and technical support.

We wish all the ICATT'11 participants a fruitful work and pleasant stay in Kyiv during these charming September days.

*Honorary Chairman Yakov S. Shifrin
Chairman Fedor F. Dubrovka*

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- Ukrainian National Association "Antennas"
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- IEEE Ukraine Section
- National Technical University of Ukraine" Kyiv Polytechnic Institute" (Kyiv, Ukraine)
- "Radioelectronics and Communications Systems" International Journal (Kyiv, Ukraine)
- State Scientific Research Institute "Kvant Radar Systems" (Kyiv, Ukraine)
- UKRANTECH LLC Company (Kyiv, Ukraine)

TUESDAY, SEPTEMBER 20

10:00–10:30	OPENING CEREMONY	Academic Council Hall (A)
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10:30–13:00	PLENARY SESSION PL-1 Invited Papers	Academic Council Hall (A)
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Chairs: *Shifrin Ya. S. (Kharkiv, Ukraine) and Dubrovka F. F. (Kyiv, Ukraine)*

10:30–11:10	Antenna Science Atlantes <i>Shifrin Ya. S. and Kravchenko V. F.</i>
11:10–11:40	Coffee break
11:40–12:20	Recent Advances in Antenna Research, Developments and Engineering at NTUU "KPI" <i>Dubrovka F. F. et al.</i>
12:20–13:00	Biochemical Observational Science at THz Energies <i>Donnan R., Dubrovka R.</i>
13:00–14:30	Lunch

14:30–18:00	Session WUMA WIDEBAND, ULTRAWIDEBAND AND MULTIFREQUENCY ANTENNAS	Room 163-1 (A)
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Chairs: *Gorobets N. N. (Kharkiv, Ukraine)*

14:30–14:50	Full Band UWB Front-End Solution Incorporating Two Antennas <i>Kravchenko R., Rak F. and Stadler M.</i>
14:50–15:10	Research of Klopfenstein Taper UWB Monopole Antenna <i>Wang Nan-nan, QIU Jing-hui, Zhang Zhi-Feng, Zong Hua, Zhong Ling-Ling, Deng Wei-Bo</i>
15:10–15:30	Simulation of Planar Spiral Antennas Made of a Conductor with Magnetodielectric Coating <i>Demidchik V.I., Kornev R.V., Kuharchik P.D.</i>
15:30–15:50	A High Performance Ultrawideband Orthomode Transducer and a Dual-polarized Quad-ridged Horn Antenna Based on It <i>Dubrovka F. F. and Piltyay S. I.</i>
15:50–16:10	Small Fractal Structured Log-Periodical Alpha-Pole Antennas <i>Onufriyenko V.M.</i>
16:10–16:40	Coffee break
16:40–17:00	The Multiband Antenna <i>Savochkin A. A. and Nudga A. A.</i>

17:00–17:20	UWB Antenna Design Concept for Near Field Applications <i>Maksimovitch Ye.S., Mikhnev V.A. and Vainikainen P.</i>
17:20–17:40	Study on a Novel Wideband Omni-Antenna <i>Lijia Chen, Tenigeer and Jinghui Qiu</i>
17:40–18:00	Analysis of a Wideband Plasma Monopole Antenna Design <i>Li Wei, Qiu Jinghui, Suo Ying, Chen Lijia</i>

14:30–18:00	Session AA-1 ANTENNA ARRAYS	Admin. Hall (B)
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Chairs: *Yurtsev O. (Minsk, Belarus), Kasyanov A. O. (Taganrog, Russia)*

14:30–14:50	Detection of Solid Earth Excitations by Laser Seismo-Acoustic Antenna Array <i>Kravtsov V. V., Dubrov M. N., and Remontov M. S.</i>
14:50–15:10	Noise-Protected Antenna for a Pulse Acoustic Atmospheric Sounder <i>Shifrin Ya. S., Ulianov Y. N., Vetrov V. I., Misailov V.L.</i>
15:10–15:30	Spatial Polarizing Filters, Transformers of a Field Polarization and Polarizing Manipulators Based on Printed Reflectarrays <i>Kasyanov A.O.</i>
15:30–15:50	The Effect of Defective Radiators and Modules on Characteristics of Array Antenna with Complex Aperture and Multi-Faceted Array Antenna <i>Kizimenko V., Moskaliyov D., Naumovich N., Yubko A., Yurtsev O.</i>
15:50–16:10	The Influence of Interchannel and Intrachannel Nonidentities on Antenna Array Characteristics <i>Kizimenko V., Moskaliyov D., Naumovich N., Yurtsev O.</i>
16:10–16:40	Coffee break
16:40–17:00	Characteristics of Linear Slotted Waveguide Arrays on the Rectangular Waveguide with Two-Layer Dielectric Filling Excited by the Slowed Down Dominant Mode <i>Lyakhovskiy A.A., Lyakhovskiy A.F., Blinova N.K., Yatsuk L.P.</i>
17:00–17:20	3D Scanning by Multilayered Circular TSA Array with Pulse Excitation <i>Kolchigin N.N., Kazansky O.V., Ivanchenko D.D., Liang jing feng, He shi, Zheng yu</i>

17:20–17:40	The Direction Finding Accuracy of The Rectangular Digital Antenna Array In a Case of ADC Jitter <i>Bondarenko M. V.</i>
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14:30–18:00	Session ANM ANALYTICAL AND NUMERICAL METHODS	Great Physical Auditorium (A)
Chairs:	<i>Naidenko V. I. (Kyiv, Ukraine), Savenko P. O. (Lviv, Ukraine)</i>	
14:30–14:50	Algorithms Synthesis and Potentiality Analysis of Optimum Ultrawideband Signal Processing in the Radiometric System with Modulation <i>Volosyuk V.K., Pavlikov V.V., Zhyla S.S.</i>	
14:50–15:10	Overview and Comparative Analysis of Toeplitz Covariance Matrix Estimation Methods for Space-Time Signal Processing <i>Semeniaka A. V. and Rachkov D. S.</i>	
15:10–15:30	An Approach of Finding the Branching Curves of Nonlinear Integral Operator Arising in the Theory of Antennas Synthesis <i>Podlevskiy B.M.</i>	
15:30–15:50	Synthesis of Amplitude Radiation Pattern for Plane Waveguide Array Using the Variational Approach and Method of Aperture Orthogonal Polynomials <i>Andriychuk M. I. and Tkachuk V. P.</i>	
15:50–16:10	The Mathematical Features of the Synthesis of Antennas with a Flat Aperture According to the Prescribed Amplitude Directivity Pattern <i>Savenko P. O., Tkach M. D.</i>	
16:10–16:40	Coffee break	
16:40–17:00	Modeling of Nonlinear Effects in HTS Resonator <i>Luchaninov A. I., Krykun E.V., Gavva D.S.</i>	
17:00–17:20	Singular Integral Equations Method in Mathematical Modeling of Specific Open Conical Structure Excitation <i>Doroshenko V. A., Blishun A.P., Shimuk Y.D., Zuev N. G.</i>	

14:30–18:00	Session MC MICROWAVE COMPONENTS	Room 155-1 (A)
Chairs:	<i>Kirilenko A.A., Rud' L.A. (Kharkiv, Ukraine)</i>	
14:30–14:50	Total Transmission Through an Iris with Wall-to-Wall Stepped Slot Placed in a Rectangular Waveguide <i>Prikolotin S.A., Kirilenko A.A.</i>	
14:50–15:10	Polarizers on Sections of Square Waveguides with Inner Corner Ridges <i>Rud L. A., Shpachenko K. S.</i>	
15:10–15:30	Solving Diffraction Problems in a Step Waveguide Transition <i>Morozov V.M., Magro V.I and Lyasota D.V.</i>	
15:30–15:50	Fast Parameters Measurements for Antenna-Feeder Devices <i>Borulko V. F. and Karlov V. A.</i>	
15:50–16:10	Analysis of Natural Frequency and Q-Factor Estimation for Open Dielectric Resonators with Variation of Coupling by Means of Fractional-Rational <i>Andreev M. V., Drobakhin O. O. and Saltykov D. Yu.</i>	
16:10–16:40	Coffee break	
16:40–17:00	Analysis of H-Shaped Slot Resonators in Microstrip Line Ground Plane for Stopband Filter Design <i>Rassokhina Yu. V. and Krizhanovski V. G.</i>	
17:00–17:20	Determination of Eigenfrequencies of a Radome with a Shaped Form <i>Malashenkov S.P., Anikiev I.I., Mikhailova M.I., Suschenko E.A.</i>	

WEDNESDAY, SEPTEMBER 21

PLENARY SESSION PL-2		Admin. Hall (B)
Invited Papers		
Chairs: <i>Kirilenko A.A. (Kharkiv, Ukraine)</i>		
9:30–10:10	Studies on Radar Medical Sensors <i>Boryszenko A. and Boryszenko E.</i>	
10:10–10:40	Coffee break	
10:40–11:20	Large-Aperture Slotted-Waveguide Antenna Arrays: Development and Fabrication Advances <i>Sekretarov S. S., Somov A. V. and Vavriv D. M.</i>	
11:20–12:00	Near-field Manipulation by Means of Wire Media <i>Dubrovka R., Belov P.</i>	
12:00–14:00	Lunch	

Session MTA		Room 163–1 (A)
MICROWAVE TECHNOLOGIES APPLICATION		
Chairs: <i>Drobakhin O.O. (Dnipropetrovsk, Ukraine), Morozov G.A. (Kazan, Russia), Rudakov V.I. (Kyiv, Ukraine)</i>		
14:00–14:20	Possibilities and Challenges of Material Parameter Extraction by THz Time Domain Spectroscopy <i>Sushko O. Y., Donnan R. S., Dubrovka R. F., Yang Bin and Shala K.</i>	
14:20–14:40	Frequency and Angular Dependences of the Reflection of Radioabsorbing Quasi-Chaotic Dipole Material of the "Ternovnik" Type <i>Bibikov S.B., Kulikovskij Ed.I., Semenenko V.N. and Chistyayev V.A.</i>	
14:40–15:00	Optoelectronic Tools of the Laboratory Microwave Evaluator of a Composition of Crude Oil <i>Morozov O. G. and R. R. Samigullin</i>	
15:00–15:20	Complex Permittivity Measurements in Adaptive Microwave Complex <i>Morozov G. Pyarnoya A. and Shakirov A.</i>	
15:20–15:40	Microwave Multifrequency Images of Electrodynamics Objects Hidden Behind Wall <i>Alekseev V., Drobakhin O., Drobakhina M., Sherstyuk G., and Zvegintsev A.</i>	
15:40–16:10	Coffee break	
16:10–16:30	Electromagnetic Structures of Beam Forming of Microwave Monitoring System <i>Prudyus I.N., Zubkov A.N., Lazko L.V., Mymrikov D.A.</i>	

16:30–16:50	Acoustic Aerial for the Experimental Research Sodar <i>Panchenko A.Yu., Alferov N.E., and Maryuh V.A.</i>	
16:50–17:10	Simulation of Microwave Exposure of Human Cells by Electromagnetic Field of EMF Band <i>Dumin O. M., Dumina O. O., Kolchigin N.N., Ivanchenko D.D., Shckorbatov Y.G., Pasiuga V.N.</i>	
17:10–17:30	Antenna-Rectifier Power Supply Subsystem Low-Small Spacecraft <i>Gretskih D.V., Gomozov A.V., Shokalo V.M., Al-Sammarraie Sh.F.A.</i>	
17:30–17:50	Adaptive Antenna with Signal Control at the Troposphere Communication Station <i>Rudakov V.I., Gupalo A.Y., Kravchenko A.A.</i>	
17:50–18:10	Application of Microwave Technologies for Increase of Efficiency of Polymer Materials Recycling <i>Morozov G.A., Morozov O.G., Samigullin R.R. Nasibullin A.R.</i>	
18:10–18:30	Object Detection by Precision Radiowave Defectoscope Based on a Slot Radiator with a Use of Artificial Neural Network <i>Melnychuk A.O., Yakymiv R.M., Liske O.M.</i>	
18:30–18:50	Perspective Microwave Methods of Oil Spill Response <i>Ahtyamov R.A., Gallyamov N.H., Morozov G.A., Morozov O.G. and Shakirov A.S.</i>	
19:00	Banquet	Staff Canteen (C)

Session AA-2		Room 155–1 (A)
ANTENNA ARRAYS–2		
Chairs: <i>Slyusar V. I. (Kyiv, Ukraine)</i>		
14:00–14:20	Pyramidal Design of Nanoantenna Arrays <i>Slyusar V. I., Slyusar D.V.</i>	
14:20–14:40	Antennas Based on Dielectric Resonators and Microstrip Lines in Case of Their Orthogonal Mutual Orientation <i>Trubarov I. V.</i>	
14:40–15:00	Short-Wave Band Linear Antenna Array Consisting of "Butterfly" Radiators <i>Kudzin V.P., Lozovsky V.N., Shlyk N.I.</i>	
15:00–15:20	An Estimation of Directivity Characteristics of	

	Antenna Elements in Antenna Array with Counting of Signal Conjugate Components <i>Kopiievskaya V.S., Slyusar V. I.</i>
15:20–15:40	Directivity of Antenna Arrays with Truncated Binomial Amplitude Distribution <i>Gorobets N.N., Bulgakova A.A.</i>
15:40–16:10	Coffee break
16:10–16:30	New Broadband Microstrip Antenna Design <i>Kizimenko V.</i>
16:30–16:50	Receiving Linear Antenna Arrays Integrated with CdHgTe Hot-Electron Bolometer for THz Imaging Systems <i>Dubrovka F.F., Krasilnikov D.S. and Petriakov V.A.</i>

14:00–18:00	Session ANT ANALYTICAL AND NUMERICAL TECHNIQUES	Great Physical Auditorium (A)
Chairs:	<i>Rud' L. A. (Kharkiv, Ukraine)</i>	
14:00–14:20	Visually Lossless Compression of Synthetic Aperture Radar Images <i>Ponomarenko N.N., Lukin V.V., Egiazarian K.O.</i>	
14:20–14:40	Generation of Decelerating Airy Pulses <i>Nerukh A. G., Zolotariov D. A., Nerukh D. A.</i>	
14:40–15:00	Heuristic Approaches Application Limits for Calculation of Electromagnetic Diffraction by Polyhedrons and other Scatterers <i>Vesnik M. V.</i>	
15:00–15:20	Application of Local Plane Wave Decomposition for Determination of Radiation Field of Secondary Aperture <i>Andreev M. V., Borulko V. F.</i>	
15:20–15:40	Application of Penetrating Area Method to Calculate Waveguide Phased Antennas Array with Magnetic-Dielectrical Materials <i>Marchenko S. V. and Morozov V.M.</i>	
15:40–16:10	Coffee break	
16:10–16:30	Calculation of the Field of Periodically Nonuniform Dielectric Plate by the Method of A. F. Chaplin <i>Hoblyk V. V., Pavlysh V. A., Nychai I. V.</i>	
16:30–16:50	Analysis of Radiation Patterns of Collimator Based on Modulated Metal-Dielectric Spiral Structure <i>Hoblyk V.V., Subota I. B., Liske O.M.</i>	
16:50–17:10	The Mathematical Modeling of Radiation Patterns of Receiving Antennas on Tropospheric Paths <i>Pavlova O. L. and Petrov V. A.</i>	

14:00–18:00	Session LGA LOW GAIN ANTENNAS	Room 249-1 (A)
Chairs	<i>Ovsyannikov V.V. (Dnipropetrovsk, Ukraine), Katrich V.O. (Kharkiv, Ukraine)</i>	
14:00–14:20	Radiation Polarization Control of the Turnstile Antenna with Impedance Vibrators <i>Dakhov V.M., Katrich V.A., Nesterenko M.V., Berdnik S.L.</i>	
14:20–14:40	Characterization of the Ear-to-Ear Propagation Channel Using Microstrip Dipole Antennas <i>Vasylchenko A., Hennemann C. and Dubrovka R.</i>	
14:40–15:00	Optimized Vibrator Radiator with Flat Finite Size Screen <i>Gorobets N.N. and Yeliseyeva N P.</i>	
15:00–15:20	Electrically Small Wire Antennas for Rocket and Space Radio Communications Systems <i>Ovsyanikov V.V., Makarov O.L., Ol'shevs'kiy O.L., Petrenko G.V., Popel' V.M., Romanenko Y.D.</i>	
15:20–15:40	Radiation of UWB Electromagnetic Pulses <i>Pochanin G.P. and Pochanina I.Ye.</i>	
15:40–16:10	Coffee break	
16:10–16:30	Double-Polarization Antenna for Mimo System of Wireless Communication <i>Nesteruk S.V. and Travkin P.I.</i>	
16:30–16:50	Several Novel Wire Antenna Designs with Quasi-Isotropic Radiation Pattern in Horizontal Plane <i>Yurtsev O., Bobkov Y., Baty S.</i>	
16:50–17:10	Modes Investigation Research of Omnidirectional Field Radiation with Circular Polarization of Broadband Multifilar Helix Spiral Antennas <i>Golovin V.V., Tyschuk U.N.</i>	
17:10–17:30	A Pure Circular polarization Antenna with Quasi-hemispherical Radiation Pattern <i>Dubrovka F.F., Tolkachov O.V.</i>	
17:30–17:50	Control of Dipole Radiation Pattern Using Cylindrical Metamaterials Structures <i>Labun'ko O.S.</i>	

14:00–18:00	Session GAT GENERAL ANTENNA THEORY	Admin. Hall (B)
Chairs:	<i>Yukhanov Y. V. (Taganrog, Russia)</i>	
14:00–14:20	To History of Radio Engineering's Term "Antenna" <i>Slyusar V. I.</i>	
14:20–14:40	The Energy of the Field Radiated by Hertz Dipole <i>Volvach I.S., Dumin O.M. and Dumina O.O.</i>	
14:40–15:00	Shape Transformation of Wave Beams Falling on Quasiperiodic Layered Structures <i>Andreev M., Borulko V., Drobakhin O., and Sidorov D.</i>	
15:00–15:20	Orientation and Dispersion Diagrams of Spatially- Polarizing Selective Structures in the Form of the Cylinder with the Star Contour <i>Bezuglov E.D., Bezuglov Y.D. and Gabriel'yan D.D.</i>	
15:20–15:40	Mathematical Modeling of a Wideband Conical Antenna with Open Semitransparent Surface Excitation <i>Doroshenko V.A., Shimuk Y.D., Artjukh A.V., Sova A.V.</i>	
15:40–16:10	Coffee break	
16:10–16:30	Spectrum Extrapolation for Complex Sources Via Two-Channel Version of a Principle of Minimal Spatial Extension of Solution <i>Borulko V.F. and Vovk S.M.</i>	
16:30–16:50	Optimization Of Bistatic Gpr System Position In A Problem Of Small-Sized Subsurface Objects Detection <i>Varyanitzha-Roshchupkina L. A.</i>	
16:50–17:10	Coupled Plasma Cylindrical Columns As Sub- Wavelength Antenna <i>Stogniy N.P., Sakhnenko N.K.</i>	
17:10–17:30	Spatial Fields Coherence In The Focal Plane of Reflector Antennas <i>Lobkova L. M., Golovin V. V., Tyschuk U. N.</i>	
17:30–17:50	Influence of Mutual Coupling Between Two Vibrators on Value of Their Resonant Length <i>Yeliseyeva N.P.</i>	

THURSDAY, SEPTEMBER 22

9:30–12:00	PLENARY SESSION PL-3 Invited Papers	Admin. Hall (B)
Chairs:	<i>Shishlov A.V. (Moscow, Russia), Yukhanov Y.V. (Taganrog, Russia)</i>	
9:30–10:10	Vehicular Antennas for Satellite Communications <i>Shishlov A.V.</i>	
10:10–10:40	Coffee break	
10:40–11:20	Synthesis of Arbitrarily Shaped Impedance Reflectors <i>Yukhanov Y.V., Yukhanov A.Y., Privalova T.Y.</i>	
11:20–12:00	Wavefield Control in Multimode Channels by the Use of Source Arrays with Application to Shallow- Water Sound <i>Luchinin A.G., Malekhanov A.I., and Khil'ko A.I.</i>	
12:00–14:00	Lunch	
14:00–20:00	SOCIAL EVENTS	

FRIDAY, SEPTEMBER 23

9:30–12:30	PLENARY SESSION PL-4 Invited Papers	Admin. Hall (B)
Chairs: 9:30–10:10	<i>Shifrin Ya. S. (Kharkiv, Ukraine), Dubrovka F. F. (Kyiv, Ukraine)</i> Thirty Years Experience in Development Theory, Techniques and Testing of Adaptive Lattice Filters in Kharkiv <i>Lekhovytskiy D. I.</i>	
10:10–10:40	Coffee break	
10:40–11:20	Research of the Properties of Curvilinear Thin- Wire Radiators (Helical Antennae) <i>Protsenko M.B.</i> Evolution of Electromagnetic Waves Radiated by a Hertzian Dipole	
11:20–12:00	<i>Naidenko V. I.</i>	
12:00–12:30	CLOSING CEREMONY	Admin. Hall (B)

ICATT'11 SCHEDULE

Date	Time	Academic Council Hall (A)	Admin. Hall (B)	Great Physical Auditorium (A)	Room 163-1 (A)	Room 155-1 (A)	Room 249-1 (A)
Tuesday, September 20	8:00–17:00	Registration (A)					
	10:00–10:20	Opening Ceremony					
	10:30–11:10	PL-1					
	11:10–11:40	Coffee Break					
	11:40–13:00	PL-1					
	13:00–14:30	Lunch					
	14:30–16:10		AA-1	ANM	WUMA	MC	
	16:10–16:40	Coffee Break					
Wednesday, September 21	16:40–18:00		AA-1	ANM	WUMA	MC	
	9:30–10:10		PL-2				
	10:10–10:40	Coffee Break					
	10:40–12:00		PL-2				
	12:00–14:00	Lunch					
	14:00–15:40		GAT	ANT	MTA	AA-2	LGA
	15:40–16:10	Coffee Break					
	16:10–18:50		GAT	ANT	MTA	AA-2	LGA
Thursday, September 22	19:00	Banquet (Staff Canteen (C))					
	9:30–10:10		PL-3				
	10:10–10:40	Coffee Break					
	10:40–11:20		PL-3				
	12:00–14:00	Lunch					
Friday, September 23	14:00	Social Events					
	9:30–10:10		PL-4				
	10:10–10:40	Coffee Break					
	10:40–12:00		PL-4				
	12:00–12:30		Closing Ceremony				

PL — **Plenary Session**

AA — **Antenna Arrays Session**

WUMA — **Wideband, Ultrawideband and Multifrequency Antennas Session**

ANM — **Analytical and Numerical Methods Session**

MC — **Microwave Components Session**

MTA — **Microwave Technologies Application Session**

ANT — **Analytical and Numerical Techniques Session**

LGA — **Low Gain Antennas Session**

GAT — **General Antenna Theory Session**