16TH IEEE INTERNATIONAL CONFERENCE ON MATHEMATICAL METHODS IN ELECTROMAGNETIC THEORY

CONFERENCE PROGRAM

Lviv, Ukraine
July 5-7, 2016

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CHAIRS' WELCOME

Dear colleagues,

On behalf of the Organizing and Program Committees, we welcome participants of MMET*2016 who have come to present their papers and enjoy social events in Lviv on July 5 - 7, 2016.

Two years have passed since our previous traditional biennial conference on computational electromagnetics of microwaves and optical waves. As you can remember, it was held in Dnipropetrovsk in late August 2014, in the extraordinary and in many aspects tragic circumstances of massive invasion of Ukraine's Far East by the Russian Army. It is often said that science is off politics and has no national borders. Still for those Ukrainian participants of MMET*2016 who experienced the violence from "tourists from a neighbor country" in the streets of Kharkiv, Dnipro and Odesa in April 2014 or who have parents living in the annexed Crimea or who, among 1.8 million internal refugees, had to leave their houses in Donetsk and look for job in Kiev and Vinnytsia later the same year, this is not so true any more.

Here, we remind you the words of the Chairs' Welcome of 2014: "We think that for us, as for any human beings, it is important to get together and feel friendship and solidarity when we are in trouble. We would like to suggest all of you to look at MMET*14 as a sort of curious Decameron-style adventure. Similarly to Florence dwellers in 1348, we cannot eliminate the plague of war. However, when getting together, we are able to enjoy natural wonders, good food, and intellectual stories about amazing world of electromagnetic waves and applications. Hopefully, the next MMET conference will gather us again in less difficult circumstances."

Today, we see that Ukrainian scientific life is on moderate revival. Although there is still no full peace and the shooting across the front line still takes lives of Ukrainian soldiers, we can say that the Armed Forces of Ukraine and the National Guard have efficiently isolated the area infested by "the plague of war." The Parliament and the government are painfully trying to introduce long awaited European-style reforms in every area of society. This includes the national networks of research laboratories and the system of allocation of research funds. According to new Law on Science, in 2016 the independent Science Committee must be elected by the research community, to serve as a part of the National Council for Science and Technology and establish both the principles and the efficient operation of the National Science Foundation in 2018.

Putting it simple, this means that, starting from 2018, the competitions for research projects will be hopefully organized by the same principle of excellence as in the global research community. The excellence claim will have to be supported by the evidence of high-quality publications with citations indexed in Scopus and Web of Science. Therefore the MMET conference, as a high-reputed forum where we share our achievements with international colleagues and discuss how to move further along our favorite directions of research, becomes even more important.

Keeping all this in mind and realizing that attracting any significant number of international speakers to the cities of Eastern Ukraine is still difficult, the organizers of MMET had decided to hold a conference in July 2016 in Lviv. This ancient city is located just east from the mighty ridge of Carpathian Mountains in the Far West of Ukraine. It is a large university and industrial center. One can say that it is destined to be Ukrainian gates to Europe; its impact on Ukraine is often compared to the role played by Piedmont in the establishment of Italy.

This year we are glad to see that the number of Ukrainian participants is twice larger than in 2014. Each of them should be credited both for professionalism and for mobility. We are especially happy seeing that one of three participants is an international speaker. We hope that you will enjoy the conference and the city of Lviv and we expect you to come to Ukraine again. Thank you all for coming. Special thanks go to the administration of the I. Franko Lviv National University for letting us work in the halls and auditoriums of its historical building.

Sincerely yours,

Zinoviy T. Nazarchuk Alexander I. Nosich Oksana V. Shramkova

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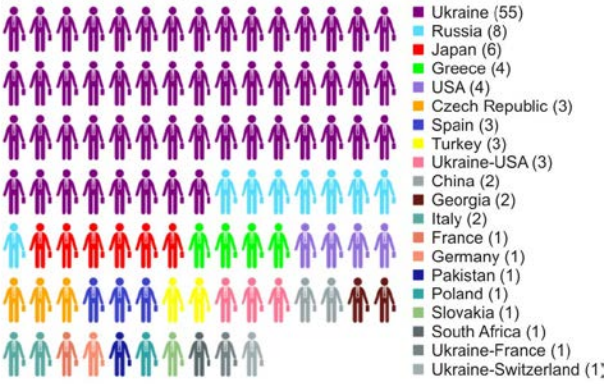
PAPERS GEOGRAPHY



Total number of papers - 103

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CITY OF LVIV

Panoramic view of Leopolis circa 1617 by Abraham Hohenberg

Львовъ, Leopolis, Lemberg, Lwów and Lviv … all the names of the city reflect different periods of Lviv's long and turbulent history. These names are convincing proofs of multicultural and multiethnic influences of the history on the establishing of modern Ukrainian City of Lion.

Although the city was founded in 1256, the nearby area bears many evidences of preceding life starting from Palaeolithic era, through bronze epoch, to roman and byzantine periods.

A resonant moment of Lviv's Ukrainian history is the formation of a powerful political center by Grand Duke (then King) Danylo, who named of the city in the honour of his son, Lev, or Lion.

The times of Lviv's blossoming belong to periods of the Kingdom of Poland and the Polish-Lithuanian Commonwealth, where Lviv played role of a notable merchant centre and a crossroad of many trade routes. Around that time a symbol of Lviv, the lion, appeared on coins minted here.

The later period under the Austro-Hungarian Empire brought remarkable cultural, political and industrial revolution, many evidences of which can be still observed now, from stylish architecture and network of railroads to peculiarities of modern local Ukrainian language.

The time between two World Wars in the 20th century was marked with intensive development of European scientific ideas in Lviv and growth of local scientific schools. To mention just one of them, the heritage of Stefan Banach, the founder of modern functional analysis, is difficult to overestimate.

The disputable Soviet era was sometimes tragic for Lviv but reopened the city potential as an industrial city in addition to being a touristic, cultural and educational center. Freedom-seeking and distinctly pro-European political soul of Lviv was frequently a source of dramatic shifts in the modern political landscape of Ukraine as a whole.

The digital era of the 21st century has changed Lviv's life once again, leading to its turning into a major IT-industry center in Ukraine and creating fruitful atmosphere for emergence of new ideas and intellectual diamonds.

To make the long story short,

- If you are eager to see perfectly preserved late medieval architecture, then Lviv is a good destination in Europe to visit and explore.
- Are you ready to try becoming a historian? Then Lviv invites you to establish personally the historical truth from a bunch of mystical stories and legends.
- If you like to taste a coffee prepared according to old recipes of Austro-Hungarian Empire and get drowned in unique city ambiance, then Lviv is the right place to come.
- Would you like to learn colourful West Ukrainian ethnical peculiarities combined in one place? Then Lviv's streets and museums offer them to you.
- If you look for a good conference on applied mathematics and electromagnetic theory to share your fascinating results and crazy ideas and meet friends, then go the Lviv University and join MMET*2016.

SOCIAL EVENTS

Welcome Party at Lviv House of Scientists

Tuesday, July 5

Lviv House of Scientists used to be an aristocratic casino (in the 1920s-1930s) and a club of horse-breeding industrialists (before 1918). The House is an architectural monument located in the city center. The authors of the project were well-reputed Viennese architects H. Helmer and F. Felner (they were also the authors of the Odessa Opera House). The architects were inspired by spirit and traditions of the palace architecture of the Central European Baroque style. Imposing decoration of facades of the building is combined with exquisite elegance in construction of the stairway gallery in the house lobby.

Lviv Sightseeing Tour

Wednesday, July 6

Lviv, translated as "The City of Lion," is a city-museum, full of historical sites to see and to enjoy. It remains one of the most charming and mysterious beauties of today's Eastern Europe. Since the late 20th century, it plays important and remarkable role of the center of "Ukrainian Piedmonte". "Ensemble of the Historic Centre" of Lviv is the only one collection of buildings in Ukraine included in the UNESCO World Heritage List. During the tours by Wonder train and Wonder bus you will see the main landmarks of Lviv and get to know its fascinating history.

Farewell Dinner at "Harmata" Restaurant at the Citadel Inn

Thursday, July 7

The restaurant is considered one of the best in Lviv. It is known for its hospitality, impeccable service and, of course, delicious European and Ukrainian cuisine. It takes the highest floor of the Citadel Inn, the first 5-star hotel in Lviv, which is located on a hill-top in the park area in the very heart of the cultural and historical part of the city. The hotel is actually a circular tower of medieval fortress, rebuilt by the Euro-2012 football championship. You will also definitely enjoy the outstanding mid-summer view on the city from the circular open-air gallery around the restaurant.

SOCIAL EVENTS

Post-conference Castle Tour "Golden Horseshoe"

The duration of tour is approximately 11 hours and it will include a lunch.

Svirzh. One of the most beautiful and most romantic castles in Ukraine built in the Renaissance style over a picturesque pond in 1484. The castle was and is a subject to numerous filming, the most famous of which is the soviet screen version of the novel "The Three Musketeers" by Alexandre Dumas. Fortress is also close to the Assumption Church (1546) and the ruins of the defense tower (1484).

Zolochiv. Extremely rich in sights place of Western Ukraine. Zolochiv castle, residence of the Sobieski noble family, was built in 1634 and is worthily considered its ornament. Mysterious Templar stones with two wreaths, which carry most cherished dreams, have always been of great interest to tourists.

Pidhirtsi. Koniecpolski Pidhirtsi Castle with park, 1635, was once considered one of the most beautiful castles in Europe and is one of the best samples of Renaissance palace and bastion fortifications combination. Well decorated St. Joseph Church (1763), tavern and brewery built in XVIII century are close to the castle.

Olesko. The fortress on the hill is one of the oldest in the Ukrainian lands (1390). Its exhibition recreates the atmosphere of cultural and artistic life of the past centuries; the castle boasts one of Europe's largest collections of wooden sculptures, including John George Pinsel's ones. Capuchin monastery, St. Anthony church (1739) and the gothic church of the Holy Trinity (1545) are also the highlights of Olesko.

TECHNICAL PROGRAM

TUESDAY	July 5, 2016

08:30 – 10:00 *Registration*

09:00 – 09:15 *Opening Ceremony*

09:15 – 11:15 **Invited Talks – 1** (*University Hall*)
Chair: Felix Yanovsky

1. LATEST ADVANCES IN COMPUTATIONAL ELECTROMAGNETIC SOLVERS FOR HIGHLY INHOMOGENEOUS ANISOTROPIC OBJECTS
G. Zouros, *Greece* **09:15 – 09:45**

2. EXAMPLES OF ANALYTICALLY REGULARIZED SCATTERING PROBLEMS VIA HELMHOLTZ DECOMPOSITION AND GALERKIN METHOD
M. Lucido, *Italy* **09:45 – 10:15**

3. BEAM-PROPAGATING METHOD AND PHYSICS BEHIND IT - REVISITED
M. Marciniak, *Poland* **10:15 – 10:45**

4. RIGOROUS RCS ANALYSIS OF A FINITE PARALLEL-PLATE WAVEGUIDE WITH MATERIAL LOADING
K. Kobayashi, *Japan* **10:45 – 11:15**

11:15 – 11:45 *Coffee Break*

11:45 – 13:45 **Invited Talks – 2** (*University Hall*)
Chair: Dozyslav Kuryliak

1. METHODS OF SINGULAR INTEGRAL AND FUNCTIONAL EQUATIONS IN DYNAMIC PROBLEMS OF MATHEMATICAL PHYSICS
Z. Nazarchuk, *Ukraine* **11:45 – 12:15**

2. ACCURATE CIRCUIT MODELS FOR THE ANALYSIS OF STACKED METAL GRATINGS
F. Medina, C. Molero, R.Rodriguez-Berral, F. Mesa, *Spain* **12:15 – 12:45**

3. RAY-MODE CONVERSION TECHNIQUE APPLIED TO THICK SLIT DIFFRACTION
H. Shirai, M. Shimizu, R. Sato, *Japan* **12:45 – 13:15**

4. CIRCULAR WAVEGUIDE WITH ANISOTROPIC IMPEDANCE SURFACE AS AN EQUIVALENT MODEL FOR DIELECTRIC WAVEGUIDES USED IN GYRO-DEVICES
V. Shcherbinin, *Ukraine* **13:15 – 13:45**

13:45 – 14:45 *Lunch*

Parallel Sessions

14:45 – 16:45 **Session EVP – Eigenvalue Problems** (*Red Room*)
Chairs: Mario Lucido & Oleg Drobakhin

1. NONRECIPROCAL COMBINATORIAL FREQUENCY GENERATION INDUCED BY NON-HERMITIAN HYPERBOLIC SYSTEMS (Invited Paper)
O. Shramkova, *Greece* **14:45 – 15:15**

2. ON SINGLE-MODE ANALYSIS OF DIELECTRIC-LOADED GYROTRON CAVITY
V. Shcherbinin, *Ukraine* **15:15 – 15:30**

3. ASYMPTOTIC SOLUTIONS OF THE SECOND ORDER FOR LE WAVES IN CORRUGATED RECTANGULAR WAVEGUIDES
V. Borulko, *Ukraine* **15:30 – 15:45**

4. EFFECTIVE SIMULATION OF A MICROWAVE SPHERICAL 3-D CAVITY DIELECTRIC RESONATOR USING FDTD TECHNIQUE
A. Boguslavska, Z. Eremenko, *Ukraine* **15:45 – 16:00**

5. ANOMALOUS DISPERSION OF POLARITONS IN A MAGNETIC-SEMICONDUCTOR SUPERLATTICE
I. Fedorin, V. Fesenko, V. Tuz, *Ukraine* **16:00 – 16:15**

6. CALCULATION OF BICONICAL CAVITY EIGENFREQUENCIES BY THE OVERLAPPING DOMAIN DECOMPOSITON METHOD IN COMBINATION WITH THE COLLOCATION METHOD
M. Andreev, **O. Drobakhin**, D. Saltykov, N. Gorev, I. Kodzhespirova, *Ukraine* **16:15 – 16:30**

7. APPLICATION OF THE OPTICAL THEOREM TO THE ANALYSIS OF LASING THRESHOLDS IN MICROLASERS WITH RING-LIKE ACTIVE REGIONS
A. Zolotukhina, A. Spiridonov, E. Karchevskii, *Russia* **16:30 – 16:45**

16:45 – 17:15 *Coffee Break*

17:15 – 19:15 **Session RSP – Remote Sensing and Propagation** (*Red Room*)
Chairs: Vladimir Scheibal & Yuliya Averyanova

1. BACKSCATTERING OF ELECTROMAGNETIC WAVES BY SNOW PARTICLES
G. Veselovska, G. Khlopov, *Ukraine* **17:15 – 17:30**

2. COMPARISON OF SINGLE STATION METHODS FOR ANALYSIS OF TWEEK ATMOSPHERICS
A. Krivonos, V. Plakhtii, *Ukraine* **17:30 – 17:45**

3. DIRECT METHODS OF POWER SPECTRA ESTIMATIONS FOR RADAR REFLECTIONS FROM RAINS NEAR GROUND SURFACE
G. Koshovy, V. Sugak, *Ukraine* **17:45 – 18:00**

4. COPULA SIMULATION OF WEATHER RADAR INPUTS
A. Rudiakova, R. Sinitsyn, F. Yanovsky, *Ukraine* **18:00 – 18:15**

5. POLARIMETRIC METHOD TO DISCRIMINATE THE DROPS ON SIZES WITHIN THE RESOLUTION VOLUME
Yu. Averyanova, F. Yanovsky, *Ukraine* **18:15 – 18:30**

6. DETERMINATION OF HYDROMETEOR PARAMETERS USING GEOSTATIONARY SATELLITE RADIO SIGNALS
D. Khalameyda, I. Mytsenko, *Ukraine* **18:30 – 18:45**

7. USING GNSS SIGNALS FOR MEASURING THE MIDLATITUDE ATMOSPHERE PARAMETERS
S. Shchekin, F. Kivva, V. Gorobets, A. Kovorotniy, O. Kovalenko, *Ukraine* **18:45 – 19:00**

8. A NOVEL ALGORITHM FOR ESTIMATION OF MOVING TARGET PARAMETERS WITH SINGLE-ANTENNA SAR
Ie. Gorovyi, D. Sharapov, *Ukraine* **19:00 – 19:15**

14:45 – 16:45 **Session MNO – Micro and Nano Optics and Plasmonics** (*Blue Room*)
Chairs: Peter Markos & Vyacheslav Kochelap

1. ACCURATE INVESTIGATION OF COUPLED PLASMONIC RESONANCES IN A CHAIN OF SILVER NANOWIRES
N. Stognii, N. Sakhnenko, *Ukraine* **14:45 – 15:00**

2. INTERACTION OF THZ RADIATION WITH PLASMONIC GRATING STRUCTURES BASED ON GRAPHENE
S. Kukhtaruk, V. Koroteyev, V. Kochelap, L. Varani, *Ukraine-France* **15:00 – 15:15**

3. MBPE FOR SPEEDING UP THE COMPUTATION OF PLASMONIC STRUCTURES
N. Tkeshelashvili, G. Kajaia, K. Tavzarashvili, *Georgia* **15:15 – 15:30**

4. MATHEMATICAL MODEL OF VOLUME OPTICAL INTERCONNECTION IN $LiNBO_3$ CRYSTAL
V. Tkachenko, A. Lipinskii, *Ukraine* **15:30 – 15:45**

5. MAS SIMULATION OF PLASMONIC SCATTERERS
G. Kajaia, N. Tkeshelashvili, K. Tavzarashvili, G. Ghvedashvili, *Georgia* **15:45 – 16:00**

6. STUDY OF SURFACE PLASMON POLARITONS IN HEAVILY-DOPED GaN STRUCTURE WITH SURFACE-RELIEF GRATING IN TERAHERZ FREQUENCY RANGE
V. Korotyeyev, Yu. Lyaschuk, V. Kochelap, *Ukraine* **16:00 – 16:15**

7. SCATTERING OF ELECTROMAGNETIC WAVES BY A PEC BAR GRATING WITH A NONLINEAR DIELECTRIC FILLING OF ITS SLITS
L. Kochetova, *Ukraine* **16:15 – 16:30**

8. CONFIGURATIONAL RESONANCES IN NANOCOMPOSITE THIN FILMS ELECTRODYNAMICS
V. Lozovski, M. Razumova, **T. Vasiliev**, *Ukraine* **16:30 – 16:45**

16:45 – 17:15 *Coffee Break*

17:15 – 19:15 **Session AR – Analytical Regularization** (*Blue Room*)
Chairs: Stephen Shipman & Dozyslav Kuryliak

1. SUB-THz ALL-DIELECTRIC METASURFACE WITH A SINGLE BAR PER THE CELL
S. Mizrakhy, P. Nesterov, V. Bezborodov, V. Khardikov, S. Prosvirnin, *Ukraine* **17:15 – 17:30**

2. AXIALLY SYMMETRIC TM-WAVE ILLUMINATION OF THE SPHERE-CONICAL RESONATOR
O. Trishchuk, D. Kuryliak, *Ukraine* **17:30 – 17:45**

3. ANALYSIS AND IMPROVEMENT OF CONVERGENSE OF TRANSVERSE EXPANSIONS IN EXCITATION PROBLEMS OF IRREGULAR IMPEDANCE WAVEGUIDES
G. Zaginaylov, V. Shcherbinin, *Ukraine* **17:45 – 18:00**

4. FOCUSING ABILITY OF A MICROSIZE GRAPHENE-BASED CYLINDRICAL REFLECTOR IN THE THZ RANGE ILLUMINATED BY ELECTROMAGNETIC PLANE WAVE
T. Oguzer, A. Altintas, *Turkey* **18:00 – 18:15**

5. GRATING RESONANCES IN THE SCATTERING OF LIGHT BY PERIODICALLY STRUCTURED DIELECTRIC NANOWIRES
D. Natarov, *Ukraine* **18:15 – 18:30**

6. METHODS OF DECREASING THE LASING THRESHOLDS OF OPTICAL RESONATORS WITH PERIODICALLY STRUCTURED ACTIVE NANO WIRES
V. Byelobrov, *Ukraine* **18:30 – 18:45**

7. SYMMETRY ACCOUNTING HELPS SOLVE THE LASING EIGENVALUE PROBLEMS FOR OPTICAL MICROCAVITIES
A. Spiridonov, E. Karchevskii, *Russia* **18:45 – 19:00**

8. ABOUT ONE CLASS OF TWO-DIMENSIONAL INTEGRAL HAMMERSTEIN TYPE EQUATIONS WITH BRANCHED SOLUTIONS
P. Savenko, M. Tkach, *Ukraine* **19:00 – 19:15**

19:30 – 22:00 *Welcome Party*

WEDNESDAY	July 6, 2016

09:00 – 11:00 — **Invited Talks – 3 (*University Hall*)**
Chair: Andrey Andrenko

1. ULTRATHIN NONLINEAR METASURFACES
M. Tymchenko, N. Nookala, J. Sebastian,M. Belkin, A. Alu, J. Lee**,** *USA* **09:00 – 9:30**

2. INTEGRAL EQUATION METHOD OF THE EXPANSION TYPE APPLIED TO LIGHT SCATTERING FROM NANO METAL STRIPS
A. Matsushima, *Japan* **09:30 – 10:00**

3. LOW-FREQUENCY STABLE MODEL-ORDER REDUCTION OF FINITE-ELEMENT MODELS FEATURING LUMPED PORTS
M. Jochum, A. Sommer, R. Baltes, **R. Dyczij-Edlinger**, *Germany* **10:00 – 10:30**

4. ADVANCED MODAL ANALYSIS OF CROSSED GRATINGS. APPLICATION TO BI-PERIODIC COMPOSITE MATERIALS MADE OF STACKS OF ONE DIMENSIONAL ARRAYS OF RODS
G. Granet, *France* **10:30 – 11:00**

11:00 – 11:30 — *Coffee Break*

11:30 – 13:30 — **Invited Talks – 4** (*University Hall*)
Chair: Mykhaylo Andriychuk

1. INTEGRAL EQUATION ANALYSIS OF CAPACITIVE WAVEGUIDE CIRCUITS
F. Quesada, A. Romera, P. Vera, **A. Alvarez**, *Spain* **11:30 – 12:00**

2. ACCURATE ANALYSIS OF ELECTROMAGNETIC SCATTERING FROM CYLINDRICAL OBJECTS LOCATED NEAR PERIODICALLY CORRUGATED SURFACE
K. Watanabe, *Japan* **12:00 – 12:30**

3. REFRACTION EFFECTS FOR PROPAGATION OVER TERRAIN
V. Schejbal, *Czech Republic* **12:30 – 13:00**

4. INVERSE SCATTERING WITH NON-OVER-DETERMINED DATA
A. Ramm, *USA* **13:00 – 13:30**

13:30 – 14:30 — *Lunch*

Parallel Sessions

14:30 – 17:00 — **Session IEM – Integral Equation Methods** (*Red Room*)
Chairs: Francisco Medina & Tatiana Zinenko

1. ANALYSIS OF THE E-POLARIZED ELECTROMAGNETIC WAVE DIFFRACTION BY AN INFINITE PERIODICAL STRIP GRATING WITHOUT ONE STRIP
M. Kaliberda, S. Pogarsky, L. Lytvynenko, *Ukraine* **14:30 – 14:45**

2. ANALYSIS OF THE H-POLARIZED ELECTROMAGNETIC WAVE DIFFRACTION BY A SEMI-INFINITE PERIODICAL STRIP GRATING
A. Koval'ova, M. Kaliberda, S. Pogarsky, *Ukraine* **14:45 – 15:00**

3. SCATTERING BY AN INHOMOGENEOUS GYROELECTRIC SHELL COATING A PEC SPHERICAL CORE
G. Kolezas, **G. Zouros**, G. Kokkorakis, *Greece* **15:00 – 15:15**

4. PLANE WAVE SCATTERING BY A DOUBLE-PERIODIC GYROMAGNETIC LAYER ANALYZED BY THE INTEGRAL FUNCTIONAL METHOD: FULL-WAVE SOLUTION
V. Yachin, T. Zinenko, *Ukraine* **15:15 – 15:30**

5. RESONANT SCATTERING OF THE SH-WAVE BY THE INTERFACE IMPEDANCE DEFECT IN AN ELASTIC LAYER
M. Voytko, Ya. Kulynych, D. Kuryliak, *Ukraine* **15:30 – 15:45**

6. WIENER-HOPF ANALYSIS OF THE RADAR CROSS SECTION OF A THIN MATERIAL STRIP
T. Nagasaka, K. Kobayashi, *Japan* **15:45 – 16:00**

7. AXIALLY-SYMMETRIC EXCITATION OF THE DISC-CONE BY THE RING MAGNETIC SOURCE
O. Sharabura, D. Kuryliak, *Ukraine* **16:00 – 16:15**

8. MULTIBAND PATCH ANTENNA USING STACK CONFIGURATION FOR WIRELESS COMMUNICATION
M. Munir, S. Shafique, S. Kiani, U. Farooq, *Pakistan* **16:15 – 16:30**

9. BOUNDARY INTEGRAL REPRESENTATION FOR BELTRAMI VECTOR FIELDS
M. Yasko, *Ukraine* **16:30 – 16:45**

10. DIFRACTION OF ELECTROMAGNETIC WAVES BY NON-UNIFROM METAL-DIELECTRIC SPHERE IN OPTICAL AND MICROWAVE BANDS
A. Akopov, P. Afanasiev, A. Lerer, M. Manuilov, *Russia* **16:45 – 17:00**

14:30 – 17:15 **Session EMA – Electromagnetic Modeling Applications**
(*Blue Room*)
Chairs: Alejandro Alvarez & Kateryna Arkhypova

1. CALIBRATION OF MICROWAVE WAVEGUIDE SENSOR FOR BIOMEDICAL APPLICATIONS
P. Krasov, K. Arkhypova, *Ukraine* **14:30 – 14:45**

2. MICROWAVE CIRCULAR WAVEGUIDE WITH COAXIAL LAYER OF HIGH LOSSYY LIQUID
Z. Eremenko, E. Kuznetsova, *Ukraine* **14:45 – 15:00**

3. NUMERICAL MODELING THE RESONANCE X-BAND STRUCTURES WITH LOCAL INHOMOGENETIES INSIDE
B. Bekirov, I. Ivanchenko, M. Khruslov, N. Popenko, *Ukraine* **15:00 – 15:15**

4. WIDELY LINEAR QUATERNION ADAPTIVE FILTERING IN THE FREQUENCY DOMAIN
F. Ortolani, A. Uncini, *Italy* **15:15 – 15:30**

5. INFLUENCE OF ANISOTROPY ON EDDY CURRENT CONDUCTIVITY MEASUREMENT
V. Rybachuk, Ya. Kulynych, *Ukraine* **15:30 – 15:45**

6. BSP STEP FOR ON-GROUND TARGETS RCS MEASURING OR CALCULATION
M. Legenkiy, **A. Maslovskiy**, M. Antyufeyeva, *Ukraine* **15:45 – 16:00**

7. 16-BIT DATA PROCESSING SYSTEM FOR FRONT-SIDE LOOKING SAR
K. Semenova, *Ukraine* **16:00 – 16:15**

8. ENERGY TRANSFORMATION OF TRANSIENT FIELD OF HERZIAN DIPOLE
V. Plakhtii, O. Dumin, V. Katrich, O. Dumina, I. Volvach, *Ukraine-USA* **16:15 – 16:30**

9. INFLUENCE OF THE DIELECTRIC LOSS IN A DIELECTRIC FILLED ROTATING SPHERICAL RESONATOR ON THE PRECISION OF THE ROTATION RATE MEASUREMENT
B. Petrov, **D. Titova**, *Russia* **16:30 – 16:45**

10. SURFACE ELECTROMAGNETIC WAVE IN THE RANGE OF 100-5000 KHZ OVER SEA COVERED BY ICE (NUMERICAL RESULTS)
Yu. Bashkuev, **M. Dembelov**, *Russia* **16:45 – 17:00**

11. PREDICTIVE MAP OF GEOELECTRIC SECTIONS OF NORTH EURASIA AND ITS APPLICATION FOR THE RADIOWAVES PROPAGATION CALCULATIONS
Yu. Bashkuev, L. Angarkhaeva, D. Buyanova, **M. Dembelov**, *Russia* **17:00 – 17:15**

18:00 –20:30 *Lviv Sightseeing Tour*

THURSDAY	July 7, 2016

09:00 – 11:00 — **Invited Talks – 5** (*University Hall*)
Chair: Oksana Shramkova

1. PRE-FRACTAL OF PEC STRIPS
G. Koshovy, *Ukraine* **09:00 – 9:30**

2. FANO RESONANCES IN DIELECTRIC, METALLIC AND METAMATERIAL PHOTONIC STRUCTURES
P. Markos, *Slovakia* **09:30 – 10:00**

3. DYNAMIC RESONANCE IN THE HIGH-Q AND NEAR-MONOCHROMATIC REGIME
G. Abeynanda, **S. Shipman**, *USA* **10:00 – 10:30**

4. SCATTERING OF ELECTROMAGNETIC WAVES BY INHOMOGENEOUS DIELECTRIC GRATINGS LOADED WITH CONDUCTING STRIPS – MATRIX FORMULATION OF POINT MATCHING METHOD -
T. Yamasaki, *Japan* **10:30 – 11:00**

11:00 – 11:30 — *Coffee Break*

11:30 – 13:30 — **Invited Talks – 6** (*University Hall*)
Chair: Konstantin Ilyenko

1. NONLOCAL ELECTRODYNAMICS OF HELICAL METALS
D. Pesin, *USA* **11:30 – 12:00**

2. GREEN'S FUNCTIONS FOR 2D PERIODIC STRUCTURES AND APPLICATIONS TO THE ANALYSIS OF WAVEGUIDE COMPONENTS
C. Gomez, **F. Quesada**, A. Alvarez, *Spain* **12:00 – 12:30**

3. SIMULTANEOUS QUASI-RHCP AND LHCP RADIATION IN THE NEAR FIELD OF PLANAR RFID ANTENNAS
A. Andrenko, *China* **12:30 – 13:00**

4. BODY AREA NETWORKS: NUMERICAL, EXPERIMENTAL AND APPROXIMATE CHARACTERIZATION
Z. Raida, *Czech Republic* **13:00 – 13:30**

13:30 – 14:30 — *Lunch*

Parallel Sessions

14:30 – 16:30 — **Session EMT – Electromagnetic Theory** (*Red Room*)
Chairs: Romanus Dyczij-Edlinger & George Koshovy

1. GYROTROPIC-NIHILITY STATE IN MAGNETIC SUPERLATTICES (Invited Paper)
V. Fesenko, V. Tuz, *Ukraine* **14:30 – 15:00**

2. ON THE THEORY OF TRANSITION RADIATION OF A CHARGED PARTICLE IN A WAVEGUIDE WITH A MODULATED ANISOTROPIC MAGNETODIELECTRIC FILLING
E. Gevorkyan, *Russia* **15:00 – 15:15**

3. ANALYTIC SOLUTIONS AND NUMERICAL IMPLEMENTATION OF THE SPECIFIC ELECTROMAGNETIC WAVE PROPAGATION
P. Vorobiyenko, **I. Dmitrieva**, A. Solomko, *Ukraine* **15:15 – 15:30**

4. 3D SYSTEM OF RANDOMLY DETUNED RING RESONATORS
J. Machac, *Czech Republic* **15:30 – 15:45**

5. COMPLEX SOURCE POINT BEAM EXCITATION OF A LOSSLESS DIELECTRIC SLAB
N. Tsitsas, *Greece* **15:45 – 16:00**

6. MODIFIED THEORY OF PHYSICAL OPTICS AND SOLUTION FOR SCATTERING FIELDS FROM A PERFECTLY CONDUCTING PARABOLIC REFLECTOR
M. Sarnik, U. Yalcin, *Turkey* **16:00 – 16:15**

7. REAL VALUED TM FIELDS IN ARBITRARY CROSS SECTION WAVEGUIDE
O. Aktas, B. Yuksek, *Turkey* **16:15 – 16:30**

16:30 – 17:00 *Coffee Break*

17:00 – 18:30 **Session NEM – Non-Classical Electromagnetic Theory** (*Red Room*)
Chairs: Dmytro Pesin & Petro Savenko

1. DENSITY OPERATORS AND NON-HERMITIAN HAMILTONIANS IN THEORY OF ELECTROMAGNETIC WAVE PROPAGATION AND DISSIPATION IN DIELECTRIC MEDIA
K. Zloshchastiev, *South Africa* **17:00 – 17:15**

2. ON THE GRAD METHOD IN PLASMA PHYSICS
V. Gorev, **A. Sokolovsky**, *Ukraine* **17:15 – 17:30**

3. EFFECTS OF PREWARE ZONE AND ELECTRON 'HALF-BARENESS' IN MILLIMETER WAVELENGTH TRANSITION RADIATION
S. Trofymenko, N. Shulga, *Ukraine* **17:30 – 17:45**

4. SUPERRADIANCE IN DICKE SYSTEMS: A PICTURE WITH FIELD CORRELATION FUNCTIONS
S. Lyagushyn, A. Sokolovsky, *Ukraine* **17:45 – 18:00**

5. ELECTRON WAVE PACKET EVOLUTION UNDER THE INFLUENCE OF RANDOM ELECTRIC FIELD
D. Kulik, S. Pavlik, Yu. Oseledchik, *Ukraine* **18:00 – 18:15**

6. MODIFICATION OF THE METHOD OF AVERAGED CHARACTERISTICS FOR MULTIHARMONIC PROBLEMS IN HIGH-CURRENT ELECTRONICS DEVICES
V. Kulish, A. Lysenko, G. Oleksiienko, **Iu. Volk**, *Ukraine* **18:15 – 18:30**

14:30 – 16:30 **Session AM – Antenna Modeling** (*Blue Room*)
Chairs: Andrey Andrenko & Zbynek Raida

1. ORIGINAL Ka-BAND FRACTIONAL SPIRAL ANTENNAS
M. Khruslov, I. Ivanchenko, N. Popenko, *Ukraine* **14:30 – 14:45**

2. DESIGN OF FRACTAL LOOP ANTENNA WITH INTEGRATED GROUND PLANE FOR RF ENERGY HARVESTING
M. Zeng, **A. Andrenko**, X. Liu, H.-Z. Tan, B. Zhu, *China* **14:45 – 15:00**

3. DIRECTIONAL CHARACTERISTICS OF AN ANTENNA ARRAY OF MONOPOLES ON A PERFECTLY CONDUCTING SPHERE
M. Nesterenko, V. Katrich, L. Yatsuk, N. Blinova, Yu. Penkin, **V. Dakhov**, *Ukraine* **15:00 – 15:15**

4. OUT-OF-BAND GAIN CHARACTERISTICS OF LINEAR ANTENNA ARRAY
S. Siden, *Ukraine* **15:15 – 15:30**

5. FORMATION OF CIRCULARLY POLARIZED WAVE BY IMPEDANCE WIRE DIPOLE LOCATED OVER SQUARE SCREEN
N. Yeliseyeva, S. Berdnik, V. Katrich, M. Nesterenko, *Ukraine* **15:30 – 15:45**

6. BENEFITS OF NEAR-FIELD TECHNOLOGY IN THE SMALL-SIZE ANTENNA DESIGNING
N. Popenko, I. Ivanchenko, M. Khruslov, *Ukraine* **15:45 – 16:00**

7. YAGI-UDA ANTENNAS WITH IMPEDANCE WIRES
S. Berdnik, V. Katrich, M. Nesterenko, Yu. Penkin, S. Pshenichnaya, *Ukraine* **16:00 – 16:15**

8. FRACTAL LOG-PERIODACAL WIDEBAND ANTENNA: ON DEOMETRICAL DESIGN AND WAVE PHASE CONJUGATION
V. Onufrienko, L. Onufriyenko, *Ukraine* **16:15 – 16:30**

16:30 – 17:00 *Coffee Break*

17:00 – 18:45 **Session IP – Inverse Problems** (*Blue Room*)
Chairs: Gerard Granet & Roman Chapko

1. EM WAVE SCATTERING ON A SET OF SMALL PARTICLES AND CREATION OF MATERIALS WITH DESIRED REFRACTION COEFFICIENT AND MAGNETIC PERMEABILITY (Invited Paper)
A. Ramm, **M. Andriychuk**, *Ukraine-USA* **17:00 – 17:30**

2. ON THE GREEN'S FUNCTIONS TECHNIQUE FOR THE NUMERICAL SOLUTION OF INVERSE BOUNDARY PROBLEMS
R. Chapko, *Ukraine* **17:30 – 17:45**

3. INFLUENCE OF MOVING THE PRIMARY SOURCE FIELD TO DETERMINE THE LOCATION OF AN ELONGATED DEFECT
I. Tryhub, Ya. Kulynych, *Ukraine* **17:45 – 18:00**

4. IMPROVED METHOD OF OPTICAL COHERENCE TOMOGRAPHY IMAGING
P. Hunziker, O. Morozov, O. Volosyuk, V. Volosyuk, **S. Zhyla**, *Ukraine-Switzerland* **18:00 – 18:15**

5. GENERALIZED APPROACH TO SOLVING THE INVERSE SCATTERING PROBLEMS ON THE BASIS OF SAMPLING STRATEGY
A. Synyavskyy, R. Hryniv, M. Shanin, Z. Nazarchuk, *Ukraine-USA* **18:15 – 18:30**

6. RADIOIMPEDANCE SOUNDING OF GRADIENT SEMICONDUCTING MEDIUM
L. Angarkhaeva, V. Balkhanov, Yu. Bashkuev, *Russia* **18:30 – 18:45**

19:00 – 19:30	*Closing Ceremony & Farewell Dinner*
19:30 – 23:00	*(at "Harmata" Restaurant of the Citadel Inn)*

FRIDAY	**July 8, 2016**

08:00 – 19:30	*Post-conference Castle Tour "Golden Horseshoe"*

AUTHOR INDEX

MMET*2016 TIME-TABLE

Legend

University Hall	Red Room	Blue Room	House of Scientist	"Harmata" Restaurant

Tuesday, July 5

08:00-17:15	*Registration*	
09:00-11:15	Opening Ceremony. Invited Talks – 1 G.P. Zouros, M. Lucido, M. Marciniak, K. Kobayashi	
11:15-11:45	*Coffee break*	
11:45-13:45	Invited Talks – 2 Z.T. Nazarchuk, F. Medina, H. Shirai, V.I. Shcherbinin	
13:45-14:45	*Lunch*	
14:45-16:45	Eigenvalue Problems	Micro and Nano Optics and Plasmonics
16:45-17:15	*Coffee break*	
17:15-19:15	Remote Sensing and Propagation	Analytical Regularization
19:30-22:00	*Welcome Party*	

Wednesday, July 6

09:00-11:00	Invited Talks – 3 M. Tymchenko, A. Matsushima, R. Dyczij-Edlinger, G. Granet	
11:00-11:30	*Coffee break*	
11:30-13:30	Invited Talks – 4 A. Alvarez, A. Ramm, K. Watanabe, V. Schejbal	
13:30-14:30	*Lunch*	
14:30-17:15	Integral Equation Methods	Electromagnetic Modeling Applications
18:00-20:30	*Lviv Sightseeing Tour*	

Thursday, July 7

09:00-11:00	Invited Talks – 5 G. Koshovy, P. Markos, S. Shipman, T. Yamasaki	
11:00-11:30	*Coffee break*	
11:30-13:30	Invited Talks – 6 D. Pesin, F. Quesada-Pereira, A. Andrenko, Z. Raida	
13:30-14:30	*Lunch*	
14:30-16:30	Electromagnetic Theory	Antenna Modeling
16:30-17:00	*Coffee break*	
17:00-18:45	Non-Classical Electromagnetic Theory	Inverse Problems
19:00-23:00	*Closing Ceremony. Farewell Dinner*	