



**XXIVth International Seminar/Workshop on
DIRECT AND INVERSE PROBLEMS OF ELECTROMAGNETIC AND ACOUSTIC WAVE
THEORY**

September 12-14, 2019

DIPED-2019

Lviv, Ukraine

XXIVth DIPED

**Conference
Report**

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The XXIVth International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory (DIPED-2019) was organized by the IEEE Ukraine Section (West) MTT/ED/AP/EP/SSC Societies Joint Chapter and MTT/ED/AP Georgia Chapter. This year, DIPED was held at the Pidstryhach Institute for Applied Problems of Mechanics and Mathematics (IAPMM), NASU, Lviv, Ukraine, on September 12-14, and it was dedicated to 100th anniversary of Prof. Boris Z. Katsenelenbaum, mastermind, organizer, and contributor to the DIPED Seminar/Workshop. The IEEE Ukraine Section, IAPMM, and Tbilisi State University were the co-organizers of DIPED-2018. The IEEE Electron Devices, Microwave Theory & Techniques, and Antennas & Propagation Societies provided the Technical Co-Sponsorship for the event.

The DIPED-2019 technical program consisted of 39 papers. Scientists from Georgia, Germany, Israel, Turkey, USA, and Ukraine submitted their papers. The papers were arranged at the following sections:

- Diffraction and Scattering,
- Propagation in Complex Media,
- EM Modeling and Measurement,
- Antenna Design,
- Inhomogeneous Structures,
- Analytical and Numerical Techniques,
- Electromagnetic and Acoustic Applications.

The Plenary Session was started with the talk of Prof. Nikolai Voitovich, DIPED-2019 Program Committee Co-chairman, who presented the memorial to the outstanding FSU and world-wide scientist in the electromagnetic wave theory, Prof. Boris Katsenelenbaum, who passed away more than four years ago on the 96th year of his life. It was mentioned that the role of Prof. Katsenelenbaum in the establishment of the DIPED Seminar/Workshop was crucial. His enthusiasms and continuous preparing the scientific paper for the event to much extend determined the scientific direction of the DIPED.

Prof. Katsenelenbaum published 12 monographs and about 120 papers on the theory of electromagnetic field. The last published papers and reports at the International conferences (Canada, Georgia, Russia, Spain, and Ukraine) are concerned with the problems of the scatterer shape reconstruction and the power transmission by a wave beams. Prof. Katsenelenbaum obtained the State Prize of Ukraine in area Science and Technology in 1989. He was a member of the IEEE and the Popov Society. Since November 1998 he has been living in Nahariya, Israel.

Traditionally, the DIPED Program Committee recognizes the best papers of young speakers. The following participants were granted by the DIPED-2019 Best Young Speaker Award:

- Mr. Olexiy Breslavets for "Frequency Spectrum and Electromagnetic fields distribution in Cavity Microwave Resonator with Metal Pins Inside";
- Mr. Ilya Persanov for "Subsurface Object Recognition in a Soil Using UWB Irradiation by Butterfly Antenna";
- Mr. Vadym Plakhtii for "Impulse Electromagnetic Wave Propagation in Kerr Medium";
- Mr. Olexandr Prishchenko for "Influence of Noise Reduction on Object Location Classification by Artificial Neural Networks for UWB Subsurface Radiolocation";
- Mr. Illia Vodorez for "Control System Automation of the Sputtering Device WUP-5M for the Study of Wave Propagation in Complex Media".

The recipients of Award were recognized by the certificate from the Program Committee and financial grant from the Organizing Committee.

Following to the DIPED tradition, the conference participants spent lot of time in free lobby discussions. After the Seminar/Workshop technical program was completed, a traditional dinner was held. The Best Young Scientist Awards were presented there. The future improvement of the Seminar/Workshop format was discussed and participant suggestions were taken into consideration. It was announced that the next XXVth DIPED-2020 Seminar/Workshop will be held at the Tbilisi State University, Tbilisi, Georgia, in the middle of September, 2020. The previous attendees and new participants are cordially invited.



Figure 1. Prof. Boris Z. Katsenelenbaum at work, Nahariya, Israel, 2009.



Figure 2. The recipients of the DIPED-2019 Young Speaker Award