

Curriculum Vitae

Personal information

Name: Alexey (Oleksii) Vertiy (Vertii)
Date of birth: 11 Oct. 1947
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1. EDUCATION

Higher education: Kharkiv State University of Radio Electronics,
Radiophysical department (1965 - 1970), Kharkov, Ukraine

Postgraduate education: B .Verkin Institute for Low Temperature Physics and
Engineering of the National Academy of Sciences of Ukraine,
Kharkov, Ukraine
PhD, (candidate for phys. and-math. sciences) (1970 - 1974)

V.N. Karazin Kharkiv National University, Radiophysical
department, Kharkov, Ukraine
Doctor of Sciences (1974 - 1987).

2. WORKING EXPERIENCE

Institution: L.N. Gumilyov Euroasian National University	2013- today
City, Country: Astana, Kazakhstan Position: Professor, Department of radio techniques, electronics and telecommunications	

Institution: TUBİTAK-Marmara Research Center,	1997-2012
City, Country: Kocaeli, Turkiye. Positon: Director of International Laboratory for High Technologies. Managed the team of researchers and engineers (18 persons), supervising the development of creating innovative radio-physical complexes, its testing and improvement	

Institution: State scientific and research center “Phonon”	1997-1999
City, Country: Kiev, Ukraine Position: Deputi-Director on Scientific Work Managed the researchers and engineers (85 persons), supervising the development of creating innovative radio-physical technologies	
Institution: Scientific and industrial concern “Nauka”	1997-1999
City, Country: Kiev, Ukraine Position: Deputi-General Director on Scientific Work Managed researchers and engineers (400 persons), supervising the scientific and industrial projects	
Institution: O.Ya.Usikov Institute for Radio Physics and Electronics, National Academy of Sciences of Ukraine	1980-1999
City, Country: Kharkov, Ukraine Position: Leading researcher, Head of department of quasi-optical spectroscopy Managed the team of researchers (35 persons), supervising investigations in the field of millimeter and sub-millimeter wavelengths	
Institution: TÜBİTAK-Marmara Research Center, Space Science Laboratory	1993-1997
City, Country: Kocaeli, Turkiye Position: Senior research scientist Managing the team of researchers and engineers (18 persons), supervising the development of creating innovative radio-physical complexes, its testing and improvement	
Institution: : O.Ya.Usikov Institute for Radio Physics and Electronics, National Academy of Sciences of Ukraine	1976-1980
City, Country: Kharkov, Ukraine Position: Senior research scientist	
Institution: : O.Ya.Usikov Institute for Radio Physics and Electronics, National Academy of Sciences of Ukraine	1974-1976
City, Country: Kharkov, Ukraine Position: Research scientist	
Institution: : O.Ya.Usikov Institute for Radio Physics and Electronics, National Academy of Sciences of Ukraine	1970-1974

City, Country: Kharkov, Ukraine

Position: Junior research scientist

3. AREAS of SCIENTIFIC INTEREST

- Quasi-optical visualization
- Generation of sub-terahertz Smith-Purcell radiation
- Super low temperature spectroscopy in millimeter wave band, dynamic nuclear polarization problem
- Sub-surface microwave tomography
- Sub terahertz and terahertz tomography
- Passive and active remote sensing in millimeter wavelength band
- SAR and ISAR technologies in millimeter wave band
- Near field microscopy
- Non-destructive testing including eddy-current tomography
- Medical applications of subsurface microwave tomography

4. PUBLICATIONS

Books in Russian:

1. **А.А. Вертгий**, И.М. Карнаухов, В.П. Шестопалов. “Поляризация атомных ядер миллиметровыми волнами”, “Наукова Думка”, Киев.1990.-232 стр, для научных сотрудников.
2. **А.А.Вертгий**, В.П.Шестопалов, Г.П.Ермак и др. “Генераторы дифракционного излучения”, “Наукова Думка”, Киев. 1991.-317 стр, для научных сотрудников.

Books in English:

Subsurface Sensing, First Edition. Edited by Ahmet S. Turk, A. Koksal Hocaoglu, and Alexey A. Vertiy.2011-960 pages. © 2011 John Wiley & Sons, Inc. Published 2011 by John Wiley & Sons, Inc.

Journal Articles:

1. **Vertiy A.A.**, Shestopalov V.P. “Visualization of Amplitude-Phase Structure of Fields in Millimeter and Sub-millimeter Waves”, Pribory i Tehnika Eksperimenta, 1973, N 2, p.p.145-147.
2. **Vertiy A.A.**, Petrushin A.A., Shestopalov V.P. “New Experimental Methods for Investigation of Millimeter and Sub-millimeter Waves”, Vestnik Akademii Nauk Ukrainskoy SSR, 1974, N 9, p.p.13-20.
3. **Vertiy A.A.**, Shestopalov V.P. “Obtaining of image of amplitude and phase distribution of electromagnetic waves in millimeter range”, Mezhevuzovskiy collection of scientific proceedings. MIREA Publishing House, 1974, vol.4.
4. **Vertiy A.A.**, Popenko N.A., Skrynnik B.K., Shestopalov V.P. “Investigation of Influence of Phase Inhomogeneity in the Form of Reflecting Diffraction Grating on Characteristics of Diffraction Radiating Generator”, Izvestiya VUZ, Radiofizika, 1975, V.18, N 12, p.p. 1865-1869 (English Transl. Radiophysics and Quantum Electronics).

5. **Vertiy A.A.**, Derkach V.N., Popenko N.A., Shestopalov V.P. "Diffraction Radiating Generator with Diffraction Energy Output", Doklady Akademii Nauk Ukrainskoy SSR- serie A, 1976, N 4, p.p.356-358.
6. **Vertiy A.A.**, Leonov Yu.I. "Investigation of Influence of Probe Dimensions on Character of Measuring Fields Distributions in Open Resonant Systems", Izvestiya VUZ, Radioelektronika, 1976, V. 19, N 2, p.p.105-107 (English Transl. Radioelectronics and Communication Systems).
7. **Vertiy A.A.**, Ivanchenko I.V., Shestopalov V.P. "Measuring Method for Phase Structure of Field in Quasi-Optical Open Resonators", Doklady Akademii Nauk Ukrainskoy SSR-serie A, 1977, N10, p.p.922-925.
8. **Vertiy A.A.**, Derkach V.N., Shestopalov V.P. "A Method for Obtaining the Spatial Spectra of Electromagnetic Fields Structure in the Millimeter and Sub-Millimeter Wave Ranges", Doklady Akademii Nauk Ukrainskoy SSR-serie A, 1978, N 3, p.p.247-250.
9. **Vertiy A.A.**, Derkach V.N., Popenko N.A. et al. "New Method for Investigation of Phase Structure of Field in Open Resonators", Vestnik of the Kharkov State University, 1978, issue 7, N 163.
10. **Vertiy A.A.**, Popenko N.A., Derkach V.N., Shestopalov V.P. "Experimental Investigations of Characteristics of Open Resonators in Cylindrical Envelopes", Ukrainsky Fizicheskiy Zhurnal, 1978, V. 23, N 10, p.p. 1666-1672 (English Transl. Ukrainian Phys. Journ.).
11. **Vertiy A.A.**, "Holography method of measurement of phase structure of electromagnetic fields in open resonant systems", Collection "Holography methods of information processing, serie "Holography Problems", 1978, N 11. Moscow, MIREA Publishing House, 1978.
12. **Vertiy A.A.**, Ivanchenko I.V., Popkov Yu.P., Shestopalov V.P. Polarimetry of Resonant Quasi-Optical Beams. - Kharkov, 1979.- 39 p.- (Preprint/Academy of Sciences of Ukraine. Institute of Radiophysics and Electronics; N134).
13. **Vertiy A.A.**, Popenko N.A., Mokriy V.M., Moroz E.E. et al. "Influence of Double Diffraction Grating as a Phase Inhomogeneity on Properties of Open Resonator", Radiotekhnika i Elektronika, 1979, V. 24, N 3 (English Transl. Radio Eng. Electron. Phys.).
14. **Vertiy A.A.**, Popenko N.A., Shestopalov V.P. "Properties of Screened Open Resonator with Inhomogeneity in the Form of Local Diffraction Grating", Radiotekhnika i Elektronika, 1980, V. 25, N2, p.p.412-425 (English Transl. Radio Eng. Electron. Phys.).
15. **Vertiy A.A.**, Ivanchenko I.V., Shestopalov V.P. "Experimental Investigation of Quasioptical Open Resonator with Anisotropic Filling", Radiotekhnika i Elektronika, 1981, V. 26, N 2, p.p.294-298 (English Transl. Radio Eng. Electron. Phys.).
16. **Vertiy A.A.**, Derkach V.N., Krasnyuk V.B., Shestopalov V.P. "Investigation of Generated Oscillations in Quasioptical Open Resonator with Rectangular Mirrors of Large Aperture",

- Izvestiya VUZ, Radiofizika, 1981, V.24, N1, p.p. 76-83 (English Transl. Radiophysics and Quantum Electronics).
17. **Vertiy A.A.**, Popenko N.A., Shestopalov V.P. "Open Resonator with Strip Element", Doklady Akademii Nauk Ukrainskoy SSR,-serie A, 1981, N 4.
 18. **Vertiy A.A.**, Ivanchenko I.V., Shestopalov V.P. "Quasioptical Resonant Scanning Polarimeter", Pribory i Tehnika Experimenta", 1981, N 1, p.p. 155-157.
 19. **Vertiy A.A.** "Measurement of Cross-Component of Edge Wave in Quasioptical Open Resonator", Doklady Akademii Nauk Ukrainskoy SSR-serie A, 1981, N 6, p.p.66-68.
 20. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A. "Coupling Slot of the Open Resonator - Polarized Inhomogeneity", Izvestiya VUZ. Radiofizika, 1981, V. 24, N12, p.p.1508-1513 (English transl. Radiophysics and Quantum Electronics).
 21. **Vertiy A.A.**, Popenko N.A., Popkov Yu.P. Investigation of Wave Diffraction in Millimeter Wavelengths Open Resonators.- Kharkov, 1981.-(Preprint/ Academy of Sciences of Ukraine. Institute of Radiophysics and Electronics; N 136).
 22. **Vertiy A.A.**, Derkach V.N., Krasnyuk V.B., Shestopalov V.P. "Spectral Properties of Open Resonator of Millimeter Wavelengths Region with Complicated Phase Filter", Radiotekhnika i Elektronika, 1981, vol. 26, N 10, p.p.2017-2025 (English Transl. Radio Eng. Electron. Physics).
 23. **Vertiy A.A.**, Popkov Yu.P., Karnaukhov I.M., Shestopalov V.P. "Investigation of Dynamic Polarization of Protons in Ethyleneglycole and 1,2-propyleneglycole with Stable Cr^v Radical", Doklady Akademii Nauk SSSR, 1981, V. 260, N 5, p.p.1093-1095.
 24. **Vertiy A.A.**, Popenko N.A., Kotcerzhinsky A.M., Pershin N.A. et al. "Visualization of Electromagnetic Fields of Operating Solid Generator with Open Resonator", Izvestiya VUZ. Radioelektronika, 1981, V. 24, N 10 (English Transl. Radioelectronics and Communication Systems).
 25. **Vertiy A.A.**, Popenko N.A., Tarapov S.I., Shestopalov V.P. "Investigation of an Open Resonator with a Prism of Complete Internal Reflection", Izvestiya VUZ. Radiofizika, 1982, V.25, N 6, p.p.684-687 (English Transl. Radiophysics and Quantum Electronics).
 26. Androsov V.P., **Vertiy A.A.**, Popkov Yu.P. et al. "Quasioptical Resonator for ENDOR Spectrometer". International Journal of Infrared and Millimeter Waves, 1982, vol.3, p.p.597-605.
 27. **Vertiy A.A.**, Ivanchenko I.V., Koshevaya S.V., Pustynnik O.D., Shestopalov V.P. "Experimental Research of Electrodynamical System of Semiconductor Maser on Cyclotron Resonance". Izvestiya VUZ. Radiofizika, 1982, V. 25, N 7, P. 827-832 (English transl. Radiophysics and Quantum Electronics).

28. Androsov V.P., **Vertiy A.A.** “Analysis of Electromagnetic Field in Open Resonator”, *Ukrainskiy Fizicheskiy Zhurnal*, 1982, vol.27, N9, p.p. 1290-1295 (English Translation Ukrainian Physical Journal).
29. **Vertiy A.A.**, Shestopalov V.P. “Polarization Phenomena in Diffraction Radiating Generators- Free Electrons Lasers”, *Doklady Akademii Nauk SSSR*, 1982, V.262, N5, p.p.1124-1127.
30. **Vertiy A.A.**, Derkach V.N., Gavrilov S.P. “Millimeter Wave Open Resonator with Thin Film Reflector”, *Ukrainskii Fizicheskii Zhurnal*, 1982, vol.27, N 5, p.p.777-779 (English Transl. Ukrainian Physical Journal).
31. **Vertiy A.A.**, Derkach V.N., Popkov Yu.P., Shestopalov V.P. “Millimeter Wavelengths Spectropolarimeter of Magnetic Resonance”, *Pribory i Tehnika Experimenta*, 1983, N1, p.p.127-129.
32. **Vertiy A.A.**, Popkov Yu.P., Shestopalov V.P. “Influence of Spectral Diffusion on Relaxation of Stable Radical HMBA Cr^v in 1,2 propyleneglycole”, *Doklady Akademii Nauk SSSR*, 1983, V.273, N6, p.p. 1348-1351.
33. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A. et al. “Resonant Investigation of Anisotropic Films”. *Izvestiya VUZ, Radiofizika*, 1983, vol.26, N5, p.p. (Engl. Transl. Radiophysics and Quantum Electronics).
34. **Vertiy A.A.**, Derkach V.N., Shestopalov V.P. “Investigation of Quasioptical Resonators by Space Spectral Method”, *Izvestiya VUZ. Radiofizika*. 1983, V.26, N 9, p.p.1120-1125 (English Transl. Radiophysics and Quantum Electronics).
35. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A., Shestopalov V.P. “Experimental Investigation of Edge Effects in Millimeter Wavelengths Open Resonators”, *Radiotekhnika i Elektronika*, 1983, V.28, N4, p.p.689-695 (English Transl. Radio Eng. Electron. Phys.).
36. Androsov V.P., Veliev E.I., **Vertiy A.A.** “Polarisation and Spectral Characteristics of Open Resonator with Internal Inhomogeneities”, *Izvestiya VUZ. Radiofizika*, 1983, V.26, N 3, (English Transl. Radiophysics and Quantum Electronics).
37. **Vertiy A.A.**, Popkov Yu.P., Shestopalov V.P. Investigation of Main Characteristics of Quasioptical Resonant Cell of Radiospectrometer in Millimeter waves.- Kharkov, 1983.-41p.- (Preprint./ Academy of Sciences of Ukraine. Institute of Radiophysics and Electronics, N 208).
38. **Vertiy A.A.**, Androsov V.P., Ivanchenko I.V., Veliev E.I., et al. “Investigation of polarisation properties of resonant quasi-optical beams”, Collection of scientific proceedings “Physics and technique of millimeter and submillimeter waves”.-Kiev.-1983, Naukova Dumka Publishing House.
39. **Vertiy A.A.**, Derkach V.N., Popkov Yu.P. “resonant polarimetry method in millimeter wavelengths range”, Collection of scientific proceedings “Physics and technique of millimeter and submillimeter waves”. Kiev.-1983, Naukova Dumka Publishing House.

40. **Vertiy A.A.**, Derkach V.N., Shestopalov V.P. Fourier-analysis of spatial structure of fields in quasi-optics. – Kharkov, 1984.- 47 p.- (Preprint/ Academy of Sciences of Ukraine. Institute of Radiophysics and Electronics, N 245).
41. **Vertiy A.A.**, Derkach V.N., Gavrilov S.P., Shestopalov V.P. Study of Characteristics of Quasioptical Open Resonator with Reflector of Composition Material.- Kharkov, 1984.-40p.- (Preprint/Academy of Sciences of Ukraine. Institute of Radiophysics and Electronics; N 250).
42. **Vertiy A.A.**, Gnatenko V.V., Orlov V.D., Popkov Yu.P., Shestopalov V.P. “Study of Stability and Spectral Characteristics of HMBA Cr^v Complexes”, Doklady Akademii Nauk SSSR, 1984, V. 277, N 6, p.p.1362-1365.
43. **Vertiy A.A.**, Popkov Yu.P., Shestopalov V.P. “Spectral and Relaxation Time Measurements in HMBA Cr^v Radical at 150 GHz”, International Journal of Infrared and Millimeter Waves, 1984, V.5, N 2, p.p.191-206.
44. **Vertiy A.A.**, Popenko N.A., Popkov Yu.P., Tarapov S.I. “Three-Mirror Open Resonator in Millimeter Range”, Izvestiya VUZ. Radiofizika, 1984, V.27, N 6, p.p. 775-781 (English Transl. Radiophysics and Quantum Electronics).
45. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A., Popkov Yu.P. “Investigation of Wave Radiation from Quasioptical Resonators. Part I”, Izvestiya VUZ. Radiofizika, 1984, V. 27, N 12 (English transl. Radiophysics and Quantum Electronics).
46. **Vertiy A.A.**, Derkach V.N., Shestopalov V.P. “Orthogonal Phase Filter- Flow Through Cuvette for Measurement of Dielectric Permittivity of Liquids”, Pribory i Tekhnika Experimenta, 1984, N1, p.p. 204-206.
47. **Vertiy A.A.** “Investigation of Main Characteristics of Spectrometer with Quasioptical Open Resonator// Propagation and diffraction of waves in millimeter and submillimeter ranges.- Kiev: Naukova Dumka, 1984.-p.p.226-234.
48. **Vertiy A.A.**, Tscyk A.I., Shestopalov V.P. “Experimental observation of diffraction radiation effect in millimeter wave lengths region”, Doklady Akademii Nauk SSSR. 1984, vol.280, N 2, p.p.
49. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A., Popkov Yu.P. “Investigation of Wave Radiation from Quasioptical Resonators. Part II”, Izvestiya VUZ. Radiofizika, 1985, V. 28, N 1 (English Transl. Radiophysics and Quantum Electronics).
50. **Vertiy A.A.**, Gavrilov S.P., Derkach V.N. “Tunable Multi-layer Dielectric Microwave Resonator”, Izvestiya VUZ. Radiofizika, 1985, V. 28, N 6 (English Transl. Radiophysics and Quantum Electronics).
51. Androsov V.P., Veliev E.I., **Vertiy A.A.** “Focusing Properties of Diffraction Grating in Open Resonator”, Izvestiya VUZ. Radiofizika, 1985, V. 28, N 5, p.p.634-646 (English Transl. Radiophysics and Quantum Electronics).

52. **Vertiy A.A.**, Popkov Yu.P., Shestopalov V.P. “Study of Relaxation in Inhomogeneously Widened EPR Lines of Substances of Polarized Nuclear Targets when $h\nu \gg kT$ ”, Doklady Akademii Nauk SSSR, 1985, V.280, N 4.
53. **Vertiy A.A.**, Ivanchenko I.V., Nesterenko A.N., Tsvyk A.I. et al. “Investigation of fine structure of diffraction irradiation in mm band”. Part I. Izvestiya VUZ, Radiofizika, 1985, Vol. 28, N 5, p.p.812-823 (English Transl. Radiophysics and Quantum Electronics).
54. **Vertiy A.A.**, Ivanchenko I.V., Nesterenko A.V., Tsvyk A.I. et al. “Investigation of fine structure of diffraction irradiation in millimeter wavelengths band”, Part II. Izvestiya VUZ. Radiofizika, 1985, Vol.28, N12, p.p.1443-1449 (English Transl. Radiophysics and Quantum Electronics).
55. **Vertiy A.A.**, Veliev E.I, Shestopalov V.P. “Lens effect in open resonator with inhomogeneity in the form of plane-parallel layer”, Ukrainskiy Fizicheskiy Zhurnal, 1985, Vol.30, N 8 (English Translation Ukrainian Physical Journal) .
56. **Vertiy A.A.**, Ivanchenko I.V., Tsvyk A.I. et al. “Study of short-focused open resonators using in diffraction electronics”, Radiotekhnika i Elektronika, 1986, Vol. 31, N 1, p.p.126-134 (English Transl. Radio Engineering and Electronic Physics).
57. **Vertiy A.A.**, Ivanchenko I.V., Lopatin I.V., et al. “Quasioptical complex for investigation of radiation effects in millimeter wavelengths band”, Ukrainskiy Fizicheskiy Zhurnal, 1986, Vol.31, N3, p.p.347-350 English translation Ukrainian Physical Journal).
58. Androsov V.P., **Vertiy A.A.**, Veliev E.I., Kuz'michov I.K. “Investigation of Spatial Distribution of Transversely Polarized Field in Open Resonator. Radiotekhnika i Elektronika, 1986, vol. 31, N 3, p.p.565-571 (Engl. Transl. Radio Engineering and Electronic Physics).
59. **Vertiy A.A.**, Popenko N.A., Zvyagina G.A. et al. Millimeter wave super low temperature radiospectrometer. - Kharkov, 1986.- (Preprint/Academy of Sciences of Ukraine. Institute of Radiophysics and Electronics; N 328).
60. **Vertiy A.A.** Investigation and application of resonant quasi-optical system in millimeter waves physics. Author's abstract for thesis of doctor of sciences.-Kharkov, 1986,-47p.
61. **Vertiy A.A.**, Gavrilov S.P., Derkach V.N. Tunable quasioptical open resonator with dielectric reflector.- Kharkov, 1986.- 38p.- (Preprint/Academy of Sciences of Ukraine. Institute of Radiophysics and Electronics; N 311).
62. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A., Tsvyk A.I., Shestopalov V.P. “Study of polarization characteristics of GDR characteristics”, Izvestiya VUZ. Radiofizika, 1987, Vol.30, N 1, p.p.104-112 (English Transl. Radiophysics and Quantum Electronics).
63. Androsov V.P., **Vertiy A.A.**, Kuz'michov I.K. et al. “Investigation of amplifying processes in circlotron amplifier on DRG”, Collection “Electronics of millimeter and submillimeter waves”. – Kiev: Naukova Dumka, 1988.- p.p.13-17.

64. **Vertiy A.A.**, Gavrilov S.P., Derkach V.N. "Semi-symmetrical OR with tunable interference mirror". Part I. *Izvestiya VUZ. Radiofizika*, 1988, Vol.31, N 7, p.p.847-854 (English Transl. Radiophysics and Quantum Electronics).
65. **Vertiy A.A.**, Vorob'ev G.S., Ivanchenko I.V. et al. "Experimental investigations of transformation of surface waves into volumetric ones in open waveguide", *Izvestiya VUZ. Radiofizika*, 1988, vol.31, N 6, p.p. 1242-1254 (English Transl. Radiophysics and Quantum Electronics).
66. **Vertiy A.A.**, Popenko N.A., Ivanchenko et al. "Diffraction selection in screened quasioptical resonators", *Izvestiya VUZ. Radiofizika*, 1988, N 8, (English transl. Radiophysics and Quantum Electronics).
67. **Vertiy A.A.**, Zvyagina G.A., Ivanchenko I.V., Popenko N.A. et al. "Resonant cells of millimeter radiospectrometer operating at $T < 1$ ", *Pribery i Tekhnika Experimenta (PTE)*, 1988, N 2, p.p. 107-110..
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70. **Vertiy A.A.**, Gavrilov S.P., Derkach V.N. "Semi-Symmetrical OR with Re-tunable Interferometrical Mirror", Part II. *Izvestiya VUZ. Radiofizika*, 1989, Vol.32, N 1, p.p. 110-115 (English Transl. Radiophysics and Quantum Electronics).
71. **Vertiy A.A.**, Gavrilov S.P., Derkach V.N. "Application of Multi-layer Structure at Millimeter Wavelengths", *International Journal of Infrared and Millimeter waves*, 1989, Vol. 10, N 10.
72. **Vertiy A.A.**, Popenko N.A. "Investigation of Diffractionally Coupled Open Resonators in Short Wavelengths Region of Millimeter Wavelengths Band", *Izvestiya VUZ. Radiofizika*. 1989, N 8 (English Transl. Radiophysics and Quantum Electronics).
73. **Vertiy A.A.**, Golik A.V., Korolyuk A.P., Tarapov S.I., and Shestopalov V.P. "Magnetic resonance in amorphous metals based on Fe in millimeter radiowave band", *International Journal of Infrared and Millimeter Waves*, 1989, Vol. 10, N 12, p.p.1451-1456.
74. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A., Tarapov S.I., and Shestopalov V.P. "A millimeter wave radio spectrometer for material analysis below $T < 1K$ ". *International Journal of Infrared and Millimeter Waves*, 1989, Vol.10, N3, p.p.395-404.
75. **Vertiy A.A.**, Derkach V.N., Sverdlenko B.E. "Multi-channel OBR for plasma diagnostics". *Fizika Plazmy*, 1990, Vol.16, N 10.

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77. **Vertiy A.A.**, Dvornichenko V.P., Karushkin N.F. “Experimental investigations of characteristics of diffraction resonator- power adder”. Izvestiya VUZ. Radioelektronika, 1990, N 5 (English transl. Radioelectronics and Communication Systems).
78. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A., Tarapov S.I. et al. “Investigation of spectral characteristics of ammonia radiated at 90 K”, Doklady Akademii Nauk SSSR, 1990, Vol. 314, N 6, p.p.1389-1391.
79. **Vertiy A.A.**, Golik A.V., Korolyuk A.P., Tarapov S.I., Shestopalov V.P. “Magnetic resonance in metallic glasses in millimeter wavelengths region”. Doklady Akademii Nauk SSSR, 1990, Vol.314, N 2, p.p.337-339.
80. **Vertiy A.A.**, Gavrilov S.P., Derkach V.N. “Tunable quasi-optical cell of two-millimeter wave lengths range”. Radiotekhnika i Elektronika, 1990, vol. 35, N2, p.p.415-420 (English transl. Radio Engin. Electron. Physics).
81. **Vertiy A.A.**, Golik A.V., and Tarapov S.P. “Microwave magnetic resonance in some quick-hardened metal glasses”, International Journal of Infrared and Millimeter Waves, 1991, vol. 12, N 10, p.p. 1205-1214.
82. **Vertiy A.A.**, Gavrilov S.P., Chumachenko S.G. “Interaction of Electromagnetic Waves with Nonlinear Substance Layer under Conditions of Electron Paramagnetic Resonance in Millimeter Waves,” International Journal of Infrared and Millimeter Waves, 1991, vol. 12, N 4 p.p.
83. **Vertiy A.A.**, Gavrilov S.P., Chumachenko S.G., Ivanchenko I.V., Popenko N.A., Tarapov S.I. “Distortion of shape of non-uniformly broadened line by EPR quasi-optical system “. Optika i Spektroskopiya, 1991, Vol. 70, N 5, p.p. 1049-1053.
84. **Vertiy A.A.**, Ivanchenko I.V., Popenko N.A., Tarapov S.I. “High-frequency module and semiconductor researching low temperature range”. International Journal of Infrared and Millimeter Waves, 1991, Vol. 12, N 10.
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106. **Vertiy A.**, Ozbek S., Pavlyuchenko P., Panin S., Tekbas M., Kizilhan A., Cetinkaya H., Unal A., "*Short and Long Range Passive Imaging in Millimeter-wave Band*", URSI GASS 2011.
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NOTE: For WEB search please use names: **VERTII or VERTIY**

5. PROJECTS

1980-1985

Institute of Radio physics and Electronics, National Academy of Sciences of Ukraine

Investigation of Smith-Parcel radiation for creation of new of diffraction radiation generators- free electron lasers.

1982-1987

Institute of Radio physics and Electronics, National Academy of Sciences of Ukraine;

Physical and Technical Institute of Low Temperatures Physics, National Academy of Sciences of Ukraine

- Creation of super-low temperature quasi-optical spectrometer of double electron-nuclear resonance for investigation of nuclear polarized target materials in millimeter waveband.

1985-1989

Institute of Radio physics and Electronics, National Academy of Sciences of Ukraine,

Institute of Atomic Energy named after I. Kurchatov (Moscow)

- Development of neutrons polarizer on the basis of dynamically (DNP) (proton) polarized targets.

1986-1990

Institute of Radio physics and Electronics, National Academy of Sciences of Ukraine,

United Institute of Nuclear Investigations, Dubna (Russian Federation),

Kharkov Physical and Technical Institute (Ukraine)

- Elaboration of electro-dynamical pumping systems for polarized nuclear targets for investigation of high energy physics processes

1990-1997

Institute of Radio physics and Electronics, National Academy of Sciences of Ukraine,

- Investigation of non-linear processes in quasi-optical systems at millimeter waveband.

1997

Scientific and Technical Research Council of Turkey (TUBITAK)

- Millimeter Waveband Diffraction Tomography Development
- Investigations of Quasi-Optical Open Resonators in Time – Domain
- Detection of Ozone Spectral Line in mm Waveband over Gebze, Turkey

1998

Scientific and Technical Research Council of Turkey

- Development of Synthetic Aperture Focusing Techniques for Image Reconstruction of Objects Buried in Half Space
- C – Band Diffraction Tomography Development
- Development of Nondestructive Method for Soil Permittivity Measurement
- Subsurface Tomography Technology Development for Mine Detection

1999

Scientific and Technical Research Council of Turkey

- Development of Stepped Frequency Radar Technology

- Reconstruction of Microwave Cross Section Images of Immersed Dielectric Bodies by Diffraction Tomography
- Microwave Absorbing Material Study
- Subsurface Tomography Technology Development for Mine Detection.

2000

Scientific and Technical Research Council of Turkey

Marmara Research Center, Gebze Institute of High Technologies (Turkey)

- Development Time-Domain Tomography Technology
- Study of Rescue Radar Principle

NATO Grant NP.ST.-GL6 976444 (Ukraine, Turkey, Italy)

- Investigation of Mm Waveband Whispering Gallery Mode in Dish and Spherical Dielectric Open Resonators
- Development of New Methods for Dielectric and Magnetic Material Study
- Development of Subsurface Tomography for Mine Detection.

2001

Scientific and Technical Research Council of Turkey

- Time-Domain Tomography Technology Development

General Electrics- MRC

- Eddy Current Tomography development

2002

Scientific and Technical Research Council of Turkey

- Near-field Tomography Microscopy

2002-2004

INTAS Grant (Ukraine, Germany, Russia)

- Mechanism of Millimeter Wave Losses in Diamond and Diamond-type Materials

2002-2005 Rescue Radar Technology Development

2005 -2007 TARAL project for Development of new Electromagnetic Materials

2008 till 2012 Electromagnetic Tomography Development (Manager of project, financed by the State Planning Organization of Turkey- 5 million USD)

6. AUTHOR'S CERTIFICATES

Authors's Certificates of USSR:

1. Author's certificate N 363051, published in Bulletin of Inventions in USSR, N3, 1973. Device for Visualization of Phase Distribution of Electromagnetic Field. **A.A.Vertiy**, V.P.Shestopalov.
2. Author's certificate N 673069, published in Bulletin of Inventions in USSR, N 6, 1980. Diffraction Radiating Generator. **A.A.Vertiy**, N.A.Popenko, V.P.Shestopalov.
3. Author's certificate N 710006, published in Bulletin of Inventions in USSR, N2, 1980. . Device for Measurement of Characteristics of Electromagnetic Field of Open Resonator. **A.A.Vertiy**, I.V.Ivanchenko, V.P.Shestopalov.

4. Author's certificate N 778605, published in Bulletin of Inventions in USSR, N37,1981. Open Resonator. **A.A.Vertiy**, N.A.Popenko, V.P.Shestopalov.
5. Author's certificate N 797538, published in Bulletin of Inventions in USSR N37, 1981. Diffraction Radiating Generator. **A.A.Vertiy**, N.A.Popenko, S.A.Masalov, V.P.Shestopalov.
6. Author's certificate N 868506, published in Bulletin of Inventions in USSR N37, 1981. Resonance System for Spectrometer of Double Electron-Nuclear Resonance. **A.A.Vertiy**, V.P.Androsov, Yu.P.Popkov, V.P.Shestopalov.
7. Author's certificate N 974454, published in Bulletin of Inventions in USSR N42, 1982. Open Resonator. **A.A.Vertiy**, N.A.Popenko, V.P.Shestopalov.
8. Author's certificate N 1159473 from 1982. Request on invention N 3455459, priority from June 16, 1982. Semiconductor Maser. **A.A.Vertiy**, S.V.Koshevaya, O.D.Poustylnik.
9. Author's certificate N 1062580, published in Bulletin of Inventions in USSR N47, 1983. Resonance Cell for Spectrometer of Magnetic Resonance. **A.A.Vertiy**, N.A.Popenko, Yu. P.Popkov, V.P.Shestopalov.
10. Author's certificate N 1062619, published in Bulletin of Inventions in USSR N47, 1983. Device for Measurement of Characteristics of Electromagnetic Field of the Open Resonator. **A.A.Vertiy**, I.V.Ivanchenko, V.P.Shestopalov.
11. Author's certificate N 1183876, published in Bulletin of Inventions in USSR N37, 1985. Resonance Cell of Spectrometre of Induction Magnetic Resonance. **A.A.Vertiy**, N.A.Popenko, Yu.P.Popkov, V.P.Shestopalov.
12. Author's certificate N1203415 from the 8th of September 1985. Request on invention N 3594690, priority from May 20, 1983. Resonant Cell for Spectrometer. **A.A.Vertiy**, N.A.Popenko, S.I.Tarapov, V.P.Shestopalov.
13. Author's certificate N 1255908 from the 8th of May 1986. Request on invention N 3805828, priority from October, 29, 1984. Cell of the Spectrometer of Double Electron-Nuclear Resonance. **A.A.Vertiy**, Yu.F.Kiselev, N.A.Popenko, Yu.P.Popkov, S.I.Tarapov, V.P.Shestopalov.
14. Author's certificate N 1228158, published in Bulletin of Inventions in USSR N16, 1986. Open Resonator. **A.A.Vertiy**.
15. Author's certificate N 1330586, published in Bulletin of Inventions in USSR N30, 1987. Device for Measurement of Dielectric Parameters of Liquids. **A.A.Vertiy**, V.N.Derkach, I.V.Ivanchenko, V.P.Shestopalov.

16. Author's certificate N 1300356 from the 1st of December 1986. Request on invention N 3951283 , priority from July, 30, 1985. Resonant Cell for Spectrometer. **A.A.Vertiy**, I.V.Ivanchenko, N.A.Popenko, S.I.Tarapov, V.P.Shestopalov.
17. Author's certificate N 1368753 from the 22nd of September 1987. Request on invention N 4109514, priority from August, 27, 1986. Resonant Cell for Spectrometer. **A.A.Vertiy**, I.V.Ivanchenko, A.A.Lukhanin, N.A.Popenko, S.I.tarapov, V.I.Trotsenko, V.P.Shestopalov.
18. Author's certificate N 1268754, published in Bulletin of Inventions in USSR N19, 1988. Resonant Cell for Spectrometer. **A.A.Vertiy**, I.V.Ivanchenko et al.
19. Author's certificate N 1733986 from the 12th of March 1992. Request on invention N 4801225, priority from Mart, 12, 1990. Device for Measurement of Parameters of Semiconductors. **A.A.Vertiy**, I.Ya.Gudym, I.V.Ivanchenko, N.A.Popenko, O.D.Pustyl'nik, S.I.Tarapov, V.P.Shestopalov

7. EDITORIAL ACTIVITY

- International Journal for Infrared, Millimeter and THz wave, Member of Editorial Board, 1987-2007.
- Reviewer at IEEE Instrumentation and Measurement Magazine,
- Editor at John Wiley & Sons, Inc.

8. MEMBERSHIP IN SCIENTIFIC ORGANIZATIONS AND COUNCILS

- Correspondent Member of Academy of Technological Science of Ukraine,
- Senior Member of IEEE (USA),
- Member of Qualification Board on radio-physics in O.Ya.Usikov Institute for Radio Physics and Electronics, National Academy of Sciences of Ukraine (1987-1998)
- Member of Scientific Council for Nuclear Physics Method Applications (Russian Academy of Sciences) 1987-1991.

9. SUPERVISION ACTIVITY

Since 1980's

- Prof. Dr. Sergiy Tarapov, Ph.D. and Dr.Sci. Theses
- Senior Researcher, Yury Popkov, Ph.D. Thesis
- Sergiy Gavrilo, Ph.D. Thesis
- Igor Ivanchenko, Ph.D. and Dr.Sci. Theses
- Nina Popenko, Ph.D. and Dr.Sci. Theses
- Valery Androsov, Ph.D. Thesis
- Alp Oral Salman, Ph.D. Thesis, 2006.

10. LECTURE COURCES

- Invited professor of Euroasian National University after L.N. Gumilev, Astana, Kazakhstan 2013-up to now
- Gedik University lecturer, Istanbul, Turkey, November 2012
- Invited lecturer, Massachusetts Institute of Technology, Cambridge USA, September 2012
- Invited lecturer, Massachusetts University - Lowell, USA, July 2010, September 2012
- Invitation for lecture at MMRS-2011, Kiev, Ukraine, August 2011
- Invited lecturer, Bogazici University, Turkey, April 2009
- Invited lecturer, Sabanci University, Turkey, November 2008
- Lectures on quasi-optics in Adana University, Turkey, 1993
- 1988-1998 delivered lectures on quasi-optics at V.N. Karazin Kharkiv National University, Radiophysical department, Kharkov, Ukraine

11. REWARDS

- Inventor within the USSR
- Scientific Achievement Award in Electromagnetic Spectrum Science recognized by the American Biographical Institute, 2002.
- Sub-Terahertz Super-low Temperature Spectroscopic System Developed under Prof. Vertiy supervision awarded as National achievement in Science and technology of Ukraine
- International Biographical Center in Cambridge (England) selected Prof. A. Vertiy as one of the “2000 Outstanding Intellectuals of the 21st Century”.
- Prof. A. Vertiy’s name appears in *Who is Who in the World (USA)*.
- International Peace Prize awarded by the Authority of the United Cultural Convention of the United States of America, 2003

12. FOREIGN LANGUAGES

- English (Certificated in National Academy of Science of Ukraine).
- Delivering lectures in English

13. OTHERS

- 2013-up to now: invited professor of Euro-Asian National University after L.N. Gumilev, Asnana, Kazakhstan
- 1988-1998: Worked as professor at V.N. Karazin Kharkiv National University, faculty of super high frequencies physics.