AD726139

AFOSR-TR- 71-1777

28 MAY 1971

BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 3

JANUARY --MARCH, 1971

Approved for public release;
distribution unlimited.

Sponsored by

Advanced Research Projects Agency

DDC
RECEIVED
JUN 22 1971
C

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
Springfield, Va. 22151

Prepared by

Informatics Tisco, Inc.
6811 Kenilworth Avenue
Riverdale, Maryland 20840

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY *(Corporate author)*
Informatics Tisco, Inc.
6811 Kenilworth Avenue
Riverdale, Maryland 20840

2a. REPORT SECURITY CLASSIFICATION
UNCLASSIFIED

2b. GROUP

3. REPORT TITLE

BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS (No. 3

4. DESCRIPTIVE NOTES *(Type of report and inclusive dates)*
Scientific Interim

5. AUTHOR(S) *(First name, middle initial, last name)*

Lida L. Allen Stuart G. Hibben

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
March 1971	48	

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
F44620-70-C-0081	
b. PROJECT NO.	
c. 62701D	9b. OTHER REPORT NO(S) *(Any other numbers that may be assigned this report)*
d.	AFOSR-TR- 71-1777

10. DISTRIBUTION STATEMENT
Approved for public release;
distribution unlimited.

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
TECH OTHER	Air Force Office of Scientific Research 1400 Wilson Boulevard (NPG) Arlington, Virginia 22209

13. ABSTRACT

Of all material reviewed, the major yield has been from the approximately 300 periodicals which are known to report the most advanced and interesting findings in Soviet laser technology.

The period covered is the first quarter of 1971, and includes all laser-related articles received by us in that interval. The structure and selection criteria are the same as used in the first report.

Somewhat broadened selection criteria have been used for items pertinent to chemical lasers, in view of the expanding possibilities in this technology. Our literature search also reveals an increased emphasis on holographic studies, as well as on uses of stimulated Raman scattering effects in spectroscopy. Other items worthy of mention are two articles on ultraviolet lasers and one on use of an argon ion laser for under water tv transmission.

DD FORM 1 NOV 65 1473

UNCLASSIFIED

Security Classification

INFORMATICS TISCO, INC.

6811 KENILWORTH AVE., • RIVERDALE, MARYLAND 20840 TELEPHONE • 301 779-2850

NOTE:

The attached is published as Report Number 3 in the Soviet laser bibliography series, although it is being released prior to Number 2. The latter will contain a substantially larger volume of entries, covering the periodic literature for the last half of 1970, as well as all non-periodic literature (monographs, collections, conference reports, etc.) for the entire 1969-1970 interval. It will be issued shortly.

Stuart G. Hibben
Project Scientist

BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 3, January - March 1971

Approved for public release;
distribution unlimited.

Sponsored By

Advanced Research Projects Agency

ARPA Order No. 1622

April 28, 1971

This research was supported by the Advanced Research Projects Agency of the Department of Defense and was monitored by the Air Force Office of Scientific Research under Contract Number F44620-C-0081. The publication of this report does not constitute approval by any government organization or Informatics Tisco, Inc. of the inferences, findings, and conclusions contained herein. It is published solely for the exchange and stimulation of ideas.

ARPA Order No.: 1622
Program Code No.: OF10
Name of Contractor:
Informatics Tisco, Inc.
Effective Date of Contract:
July 1, 1970
Contract Expiration Date:
December 31, 1971
Amount of Contract: $215,000

Contract No.: F44620-70-C-0081
Principal Investigator:
Lida L. Allen, Tel: (301) 779-2850
Project Scientist:
Stuart G. Hibben, Tel: (301) 779-2850
Short Title of Work: "Soviet Laser"

Prepared by

Informatics Tisco, Inc.
6811 Kenilworth Avenue
Riverdale, Maryland 20840

Introduction

This bibliography has been compiled by the staff of Informatics Tisco, Inc. in response to a continuing contractual assignment to monitor current Soviet-bloc developments in the quantum electronics field. Of all material reviewed, the major yield has been from the approximately 30 periodicals which are known to report the most advanced and interesting findings in Soviet laser technology.

The period covered is the first quarter of 1971, and includes all laser-related articles received by us in that interval. The structure and selection criteria are the same as used in the first report.

Somewhat broadened selection criteria have been used for items pertinent to chemical lasers, in view of the expanding possibilities in this technology. Our literature search also reveals an increased emphasis on holographic studies, as well as on uses of stimulated Raman scattering effects in spectroscopy. Other items worthy of mention are two articles on ultraviolet lasers and one on use of an argon ion laser for underwater tv transmission.

An author index is included. All cited sources are available at Informatics Tisco, Inc.

SOVIET LASER BIBLIOGRAPHY, JANUARY-MARCH 1971

TABLE OF CONTENTS

I. BASIC RESEARCH

A. SOLID STATE LASERS

1. Crystal

a. Ruby

1. Artamonov, S. A., M. P. Vanyukov, L. D. Khazov, and G. V. Pol'shchikov. Single-pulse ruby laser with a 6 Hz pulse rate. OMP, no. 1, 1971, 23-26.

2. Peskovatskiy, S. A., and V. M. Shul'ga. Concentration and temperature dependence of relaxation time in ruby at very low temperatures. FTT, no. 2, 1971, 599-600.

3. Valyavko, V. V., and B. B. Boyko. Effect of a magnetic field on generation in a ruby laser. ZhPS, v. 24, no. 2, 1971, 325-327.

4. Zheltov, G. I., A. S. Rubanov, and A. V. Chaley. Thermal deformation in the active elements of cyclically pulsed lasers. ZhPS, v. 24, no. 2, 1971, 226-230.

b. Transition Ion Activated: Tungstates

5. Dombrovskiy, V. I., and I. I. Lomonosov. Radioluminescence in $CaWO_4 : Nd^{3+}$ under intense excitation. ZhPS, v. 24, no. 2, 1971, 331-33.

c. REAG

6. Voron'ko, Yu. K., E. A. Nolle, V. V. Osiko, and M. I. Timoshechkin. Stimulated emission from electron beam-pumped $Y_3Al_5O_{12} : Nd^{3+}$. ZhETF, PvR, v. 13, no. 3, 1971, 125-128.

7. Zverev, G. M., G. Ya. Kolodnyy, and A. M. Onishchenko. Nonradiative transitions between levels of trivalent rare-earth ions in YAG crystals. ZhETF, v. 60, no. 3, 1971, 920-928.

2. Semiconductor: Simple Junction

b. GaAs

8. Bogdankevich, O. V., V. A. Kovalenko, A. N. Mestvirishvili, A. S. Nasibov, A. N. Pechenov, Ye. A. Ryabov, and A. F. Suchkov. Space-time characteristics of emission from an electron beam-pumped semiconductor laser. ZhETF, v. 60, no. 1, 1971, 132-135.

9. Bykovskiy, Yu. A., V. L. Velichanskiy, I. G. Goncharov, V. A. Maslov, and A. F. Uzkiy. Electron beam-pumped GaAs laser with a waveguide structure. FTP, no. 1, 1971, 187-188.

10. Dudenkova, A. V., V. A. Kalachev, Yu. M. Popov, and N. N. Shuykin. Study of optical inhomogeneities in GaAs single crystals. FTP, no. 1, 1971, 3-11.

11. Mestvirishvili, A. N., A. S. Nasibov, A. I. Svinenkov, V. I. Perevodchikov, A. L. Fedorov, and K. A. Yumatov. Study of high-power electron beam-pumped semiconductor lasers. PTE, no. 1, 1971, 199-202.

12. Vlasenko, V. Ye., Yu. P. Demidov, M. N. Zargar'yants, A. A. Zborovskiy, Ye. S. Kovarskaya, S. A. Nikolayenko, and V. M. Yungerman. Structural features of an injection laser operating at a high pulse rate at room temperature. RiE, no. 2, 1971, 437-439.

13. Vyshlov, S. S., L. P. Ivanov, A. S. Logginov, and K. Ya. Senatorov. Transverse mode locking in an injection laser. ZhETF, PvR, v. 13, no. 3, 1971, 131-133.

14. Zargar'yants, M. N., I. A. Krykanov, S. I. Kolonenkova, Z. I. Guseva, and Ye. M. Orlov. On summing the radiation powers of injection lasers. RiE, no. 3, 1971, 447-450.

b. GaSe

15. Abdullayev, G. A., G. L. Velen'kiy, S. M. Ryvkin, V. M. Salmanov, Yu. A. Sharonov, and I. D. Yaroshetskiy. Impurity photoconductivity in GaSe under excitation by a ruby laser. FTP, no. 2, 1971, 374-376.

3. Semiconductor: Mixed Junction

a. GaP_xAs_{1-x}

16. Alfyorov, Zh. I., Yu. V. Zhilyayev, and Yu. V. Shmartsev. Division of the conduction zone in GaP_xAs_{1-x} into a "superlattice". FTP, no. 1, 1971, 196-198.

b. $Ga_xAl_{1-x}As$

17. Yekimov, A. I., and V. I. Safarov. Observing optical orientation of equilibrium electrons in n-type semiconductors. ZhETF, PvR, v. 13, no. 5, 1971, 251-254.

4. Semiconductor: Heterojunction

a. $Al_xGa_{1-x}As$—GaAs

18. Andreyev, V. M., I. K. Bronshteyn, F. A. Gimel'farb, L. M. Dolginov, Yu. A. Zhitkov, L. D. Libov, V. Yu. Rogulin, V. I. Fistul', and Ye. G. Shevchenko. A $p^+Al_xGa_{1-x}As$—pGaAs—nGaAs heterostructure, and its properties as an injection laser at 300°K. UFZh, no. 3, 1971, 383-390.

5. Semiconductor: Theory

a. Injection Laser

19. Yelesin, V. F. Density of electron states in a heavily-doped semiconductor in an intense e-m wave field. FTT, no. 1, 1971, 267-271.

20. Zuyev, V. A., and V. G. Litovchenko. On surface recombination in semiconductors at high injection levels. UFZh, no. 3, 1971, 500-503.

6. Glass

21. Grigor'yants, V. V., M. L. Gurari, and M. Ye. Zhabotinskiy. On the active cross section σ_{eff} of stimulated emission in nonuniformly broadened active media. ZhPS, v. 14, no. 1, 1971, 154-157.

22. Grigor'yants, V. V., M. Ye. Zhabotinskiy, and V. M. Markushev. Determination of relaxation time τ_{21} of $^4I_{1-\frac{1}{2}}$ ion levels of Nd in glass. ZhPS, v. 14, no. 1, 1971, 73-77.

7. Solid State Laser Design

23. Kugushev, A. M., N. S. Golubeva, and V. N. Rozhdestvin. Synchronization of nine solid state lasers. IVUZ Radioelektronika, no. 4, 1971, 363-370.

24. Vinokurov, G. N., N. M. Galaktionova, V. F. Yegorova, A. A. Mak, B. M. Sedov, and Ya. I. Khanin. Spike structure of emission from solid-state lasers. ZhETF, v. 60, no. 2, 1971, 489-499.

B. LIQUID LASERS

1. Dyes

a. Rhodamine

25. Antonov, I. V., S. A. Mikhnov, V. S. Prokudin, A. N. Rubinov, B. I. Stepanov, and B. V. Skvortsov. Generation in rhodamine 6G using self-quenching discharge pumping. ZhPS, v. 14, no. 1, 1971, 151-153.

26. Yershov, A. G., O. B. Cherednichenko, and G. A. Sharif. Experimental study of an organic dye laser with transverse laser pumping and a dispersive resonator. ZhPS, v. 14, no. 2, 1971, 216-221.

b. Phthalimide

27. Rudik, K. I., and L. G. Pikulik. Effect of excitation illumination on fluorescence spectra of phthalimide solutions. OiS, v. 30, no. 2, 1971, 275-278.

c. Coumarin

28. Borisevich, N. A., L. M. Bolotko, V. V. Gruzinskiy, and V. A. Tolkachev. Generation in coumarin solutions using pulse lamp pumping. ZhPS, v. 14, no. 1, 1971, 148-150.

29. Borisevich, N. A., V. V. Gruzinskiy, N. M. Paltarak, L. P. Snagoshchenko, and V. A. Suchkov. Generation and tuning range of emission from various organic dye lasers. ZhPS, v. 14, no. 1, 1971, 41-44.

d. Cyanine

30. Melishchuk, M. V., Ye. Ya. Tikhonov, and M. T. Shpak. Effect of a metastable state in organic dye molecules on spontaneous and stimulated emission processes. UFZh, no. 3, 1971, 451-458.

e. Other Organic Scintillator Solutions and Luminophors

31. Aleksandrov, A. P., and V. I. Bredikhin. Measuring absolute value of two-photon absorption cross section in anthracene molecules. OiS, v. 30, no. 1, 1971, 72-74.

32. Antipenko, B. M., and V. L. Yermolayev. Role of the solvent in nonradiative energy transfer processes between rare earth ions. OiS, v. 30, no. 1, 1971, 75-80.

33. Aristov, A. V., N. G. Bakhshiyev, V. A. Kuzin, and I. V. Piterskaya. Effect of the orientation of intermolecular relaxation on the stimulated emission spectrum from organoluminophors. OiS, v. 30, no. 1, 1971, 143-147.

34. Aristov, A. V., and V. A. Kuzin. Generating stimulated emission from multicomponent solutions of organoluminophors. OiS, v. 30, no. 1, 1971, 148-150.

35. Goncharov, V. A., G. M. Zverev, and A. D. Martynov. Effect of triplet levels on energy characteristics of xanthene dye lasers with laser pumping. OiS, v. 30, no. 1, 1971, 151-153.

f. General Theory

36. Samson, A. M., and R. A. Karamaliyev. Change in emission frequency during quasistationary generation in dyes. ZhPS, v. 14, no. 1, 1971, 45-52.

C. GAS LASERS

1. Simple Mixtures

a. He-Ne

37. Baglikov, V. B., and V. N. Parygin. Asynchronous internal modulation of a single-frequency gas laser. RiE, no. 3, 1971, 366-372.

38. Kotlikov, Ye., G. Todorov, and M. Chayka. Lifetime and cross-sections of depolarizing collisions of the $3p_4$ level in neon. OiS, v. 30, no. 2, 1971, 185-188.

39. Ladygin, M. V., and V. A. Tsar'kov. Effect of an axial magnetic field on characteristics of a He-Ne laser operating at 3.39 microns. OiS, v. 30, no. 1, 1971, 133-136.

40. Mikhnenko, G. A., Ye. D. Protsenko, Ye. A. Sedoy, and M. P. Sorokin. Experimental study of broadening of the collision line at 0.63 μ in a He-Ne laser. OiS, v. 30, no. 1, 1971, 124-132.

41. Molchanov, M. I. Effect of collisions on broadening of the 0.63 μ line in Ne. ZhPS, v. 14, no. 1, 1971, 65-67.

42. Prokopenko, V. Ye. Experimental study of fluctuations in laser emission at $\lambda = 6328$ Å. Vestnik Moskovskogo universiteta. Seriya III. Fizika, astronomiya, no. 1, 1971, 118-120.

43. Terekhin, D. K., Ye. Yu. Andreyeva, and S. A. Fridrikhov. Single-frequency He-Ne laser in a magnetic field. ZhPS, v. 14, no. 1, 1971, 53-58.

b. He-Xe

44. Kulakov, B. P., and V. K. Nurmukhametov. Amplitude characteristic of a He-Xe laser. RiE, no. 1, 1971, 201-204.

2. Molecular Beam and Ion

a. CO_2 Mixtures

45. Antropov, Ye. T., and I. A. Silin-Bekchurin. Applicability of similarity laws to a CO_2 gas laser discharge. ZhTF, no. 2, 1971, 358-361.

46. Brovikova, I. N., A. I. Maksimov, and V. I. Svetsov. Breakdown and absorption of CO_2 in tubes with extensively-aged isolated discharge elements. KhVE, no. 2, 1971, 167.

47. Kalinin, A. P., and V. B. Leonas. Experimental study of interactions between atoms of noble gases and CO_2 molecules. DAN SSSR, v. 197, no. 2, 1971, 393-395.

48. Yerybasheva, L. F. Spectroscopic determination of neutral gas temperature in an N_2 and $CO_2 + N_2$ discharge. OiS, v. 30, no. 2, 1971, 373-374.

b. HCN

49. Tapkov, A. N., S. F. Dyubko, and V. V. Shmidt. Monochromaticity of a submillimeter laser operating at 336μ. RiE, no. 1, 1971, 204-205.

c. Noble Gas

50. Moskalenko, V. F., Ye. P. Ostapchenko, S. V. Pechurina, V. A. Stepanov, and Yu. M. Tsukanov. On the nature of emission from a pulsed ion laser. OiS, v. 30, no. 2, 1971, 369-371.

d. Metal Vapor

51. Ambartsumyan, R. V., V. N. Kalinin, and V. S. Letokhov. Two-step selective photoionization of rubidium atoms by laser radiation. ZhETF, PvR, v. 13, no. 6, 1971, 305-307.

52. Blaszczak, Z., and H. Dymaczewski. A c-w gas laser in the short wave visible range. Postepy fizyki, no. 1, 1971, 123-126.

53. Mash, L. D., B. M. Rabkin, and B. V. Rybakov. Study of the cataphoresis effect in a cadmium vapor laser. ZhETF, PvR, v. 13, no. 5, 1971, 240-243.

54. Presnyakov, L. P., and V. P. Shevel'ko. Possibility of generating population inversion in atomic beams by charge transfer from protons to atoms. ZhETF, PvR, v. 13, no. 6, 1971, 286-288.

e. Gasdynamic

55. Konyukhov, V. K., and A. M. Prokhorov. Feasibility of designing an adsorption gasdynamic laser. ZhETF, PvR, v. 13, no. 4, 1971, 216-218.

f. Miscellaneous

56. Gordiyets, B. F., A. I. Osipov, and L. A. Shelepin. Kinetics of nonresonant vibrational exchange and molecular lasers. ZhETF, v. 60, no. 1, 1971, 102-113.

3. Ring Lasers

57. Basov, N. G., E. M. Belenov, M. V. Danileyko, and V. V. Nikitin. Study of power resonances in a ring laser with nonlinear absorbing cell. ZhETF, v. 60, no. 1, 1971, 117-123.

58. Bershteyn, I. L. Emission fluctuation in a gas ring laser. IVUZ Radiofizika, no. 2, 1971, 252-262.

59. Kruglik, G. S., and A. A. Kutsak. Effect of multiple mode structure on operation of a ring laser. ZhPS, v. 14, no. 1, 1971, 59-64.

60. Letokhov, V. S., and B. D. Pavlik. Frequency effects in a gas ring laser with a nonlinear absorber. IVUZ. Radiofizika, no. 2, 1971, 244-251.

61. Volkov, A. M., and V. A. Kiselev. Rotating ring laser with a moving medium as the nonmutual element. OiS, v. 30, no. 2, 1971, 332-339.

4. General Theory

62. Kazantsev, A. P. Quantum fluctuations in gas laser emission. ZhETF, v. 60, no. 2, 1971, 500-508.

63. Kochelap, V. A. On using molecular electron vibrational transitions in thermally pumped lasers. UFZh, no. 3, 1971, 396-402.

D. CHEMICAL LASERS

64. Belotserkovets, A. V., V. M. Bogomolov, I. S. Zaslonko, S. M. Kogarko, and Yu. P. Petrov. Thermal breakdown of tetranitromethane vapors in shock waves. KiK, no. 1, 1971, 11-15.

65. Glazkova, A. P. Inhibition of air-methane mixtures and the problem of safety. KiK, no. 1, 1971, 16-20.

66. Orayevskiy, A. N. On explosion limits in a radiant field. KhVE, no. 2, 1971, 118-120.

67. Pekar, S. I., and V. A. Kochelap. Einstein relations for stimulated chemiluminescence and their application to high-pressure chemical lasers. DAN SSSR, v. 196, no. 4, 1971, 808-811.

68. Prusakov, V. N., and V. B. Sokolov. Kinetics of thermal decomposition of KrF_2. KiK, no. 1, 1971, 33-38.

69. Shatrov, V. D., Ye. B. Gordon, A. N. Ponomarev, and V. L. Tal'roze. Luminescence excited by interaction of atomic hydrogen with the surface of solid aromatics. DAN SSSR, v. 197, no. 2, 1971, 400-402.

70. Vedeneyev, V. I., and A. V. Pariyskaya. Method for fluorinating methane and its derivatives. KiK, no. 1, 1971, 21-26.

E. ULTRAVIOLET LASERS

71. Norinskiy, L. V., and V. A. Kolosov. Effective generation of powerful ultraviolet emission. ZhETF, PvR, v. 13, no. 4, 1971, 189-194.

72. Udoyev, Yu. P., V. A. Stanskiy, and M. L. Kapitsa. Source of vacuum u-v emission, based on excitation of a gas by an SHF discharge. OMP, no. 1, 1971, 68-69.

F. COMPONENTS AND ACCESSORIES

1. Resonators

73. Kiselev, V. A. Multipath small modes in optical resonators. RiE, no. 1, 1971, 134-140.

74. Konyukhov, V. K. Theory of a Fabry-Perot interferometer with a small wedge between the mirrors. ZhPS, v. 14, no. 2, 1971, 212-215.

75. Mukhtarov, Ch. K. Effect of internal dielectric boundaries on properties of optical resonators and on generation of stimulated emission in them. ZhETF, v. 60, no. 3, 1971, 929-942.

2. Mirrors

76. Burka, A. L., and N. A. Rubtsov. Nonstationary radiative-conductive heat transfer in a plane layer of a gray absorbing medium. PMTF, no. 1, 1971, 156-159.

77. Dytynko, V. M., L. S. Korniyenko, N. V. Kravtsov, and N. I. Naumkin. A laser with a delay line. RiE, no. 3, 1971, 450-452.

3. Q-Switches

78. Borovik-Romanov, A. S., N. M. Kreynes, and M. A. Talalayev. Magnetooptic effect in antiferromagnetic MnF_2 . ZhETF, PvR, v. 13, no. 2, 1971, 80-85.

79. Klochkov, V. P., V. L. Bogdanov, and B. S. Neporent. Q-switching a ruby laser with dye vapors. ZhETF, PvR, v. 13, no. 1, 1971, 47-48.

80. Samson, A. M., and A. V. Milinkevich. Generating a bleachable switch in single-pulse lasers. AN BSSR. Vestsy. Seriya fizika-matematichnykh navuk, no. 1, 1971, 119-123.

81. Vorob'yev, L. Ye., V. S. Komissarov, V. I. Stafeyev, and A. Yu. Ushakov. Electrooptic Kerr effect in hot electrons in n-InSb. ZhETF, PvR, v. 13, no. 3, 1971, 140-143.

4. Pumping Sources

82. Aleksandrov, A. F., Ye. P. Kaminskaya, and A. A. Rukhadze. Equilibrium and stability of a cylindrical linear pinch with uniform temperature. PMTF, no. 1, 1971, 33-39.

83. Anan'yev, Yu. A., V. M. Irtuganov, V. P. Kalinin, and V. V. Sergeyev. Supplying pulsed gas discharge lamps from an inductive energy store. ZhTF, no. 2, 1971, 376-380.

84. Barabanova, V. N., V. M. Podgayetskiy, and B. V. Skvortsov. Study of conditions for pumping a Nd-glass laser by radiation sources containing various inert gases. ZhPS, v. 14, no. 2, 1971, 222-225.

85. Bogdankevich, O. V., A. N. Zakharova, I. M. Olikhov, D. M. Petrov, and G. A. Samorodova. Accelerator with preliminary electron bunching for pumping semiconductor lasers. ZhTF, no. 3, 1971, 611-616.

86. Rakhimov, A. T., and V. D. Pis'mennyy. Electrical conductivity of an optically transparent xenon plasma. DAN SSSR, v. 196, no. 4, 1971, 812-813.

87. Volkov, V. N., V. S. Zuyev, V. A. Katulin, and S. S. Voloshko. Xenon discharge lamp for spectral and laser studies. ZhPS, v. 14, no. 2, 1971, 190-193.

5. Polarizers

88. Adonina, A. I., A. M. Andrusenko, and V. A. Slyusarskiy. Prism polarizers. IVUZ Radioelektronika, no. 1, 1971, 61-66.

6. Filters

89. Gisin, M. A., M. A. Validov, R. M. Mustayev, and T. N. Mayorova. Universal filter stack for first-order separation in i-r diffraction monochromators for the 0.75-25 μ region. ZhPS, v. 14, no. 1, 1971, 166-169.

90. Tishchenko, E. A. Echelette transmission filters for the far infrared. OiS, v. 30, no. 1, 1971, 159-163.

7. Detectors

91. Kamenskiy, N. N., Yu. V. Prichko, and A. P. Skibarko. Relation of photodiode sensitivity and inertia to size and position of the illuminated area on the photosensitive surface. IVUZ Radioelektronika, no. 1, 1971, 72-75.

G. NONLINEAR OPTICS

1. Frequency Conversion

92. Genkin, R. O., Ye. D. Isyanova, Yu. E. Kamach, Ye. N. Kozlovskiy, and V. M. Ovchinnikov. Experimental study of second harmonic generation in a resonator. OiS, v. 30, no. 1, 1971, 137-139.

2. Parametric Processes

93. Krindach, D. P., and L. M. Krol'. Intensity of parametric luminescence in $LiNbO_3$ crystals. OiS, v. 30, no. 1, 1971, 140-142.

94. Sushchik, M. M., V. M. Fortus, and G. I. Freydman. Mirrorless parametric light generator. IVUZ Radiofizika, no. 2, 1971, 263-268.

3. Stimulated Scattering Effects

a. Raman

95. Arutyunyan, V. M., N. N. Badalyan, V. A. Iradyan, and M. Ye. Movsesyan. Three-photon interaction in counter-flow waves and the Stark effect in potassium vapor. ZhETF, v. 60, no. 1, 1971, 62-65.

96. Averkiyeva, G. K., N. A. Goryunova, V. D. Prochukhan, S. M. Ryvkin, M. Serginov, and Yu. G. Shreter. Stimulated Raman emission from $CdSiAs_2$. FTP, no. 1, 1971, 174-175.

97. Belyayeva, N. N., and M. A. Novikov. Using dye lasers to study parameters of stimulated Raman scattering. OiS, v. 30, no. 2, 1971, 253-256.

98. Bobovich, Ya. S., and A. V. Bortkevich. Resonant stimulated Raman scattering in molecular systems with normal and inverted electron populations. UFN, v. 103, no. 1, 1971, 3-36.

99. Bobovich, Ya. S., A. V. Bortkevich, and V. V. Kryukov. Stimulated Raman scattering spectra of fine crystalline materials under excitation by ultrashort ruby laser pulses. OiS, v. 30, no. 2, 1971, 257-259.

100. Fedyanina, M. I., A. V. Krayskiy, and V. A. Zubov. Effect of attenuation on time characteristics of stimulated Raman scattering. ZhETF, v. 60, no. 2, 1971, 527-532.

101. Kazakova, Ye. K., I. N. Prokopenko, A. V. Krayskiy, V. A. Zubov, and M. M. Sushchinskiy. Study of indicatrices of stimulated Raman scattering in dispersed specimens. OiS, v. 30, no. 1, 1971, 54-57.

102. Korolev, F. A., V. I. Odintsov, and Ye. Yu. Sokolova. Stimulated Raman scattering from a low-power laser. ZhETF, PvR, v. 13, no. 3, 1971, 112-115.

103. Medvedev, B. A. On the theory of stimulated Raman scattering induced by picosecond pulses. ZhETF, v. 60, no. 1, 1971, 32-38.

104. Yelyutin, P. V. On the theory of stimulated Raman scattering. OiS, v. 30, no. 2, 1971, 246-252.

b. Brillouin

105. Lavrinovich, N. N. Stationary theory of stimulated Brillouin scattering in media with weak linear sonic attenuation. ZhETF, v. 60, no. 1, 1971, 69-72.

c. Rayleigh

106. Sabirov, L. M., V. S. Starunov, and I. L. Fabelinskiy. Determining velocity and absorption of hypersound in viscous liquids by optical scatter spectra. ZhETF, v. 60, no. 1, 1971, 146-159.

4. Self-focusing

107. Aleshkevich, V. A., S. A. Akhmanov, A. P. Sukhorukov, and A. M. Khachaturyan. Self-focusing and defocusing of short optical pulses in media with inertial nonlinearity. ZhETF, PvR, v. 13, no. 1, 1971, 55-58.

108. Boyko, Yu. I., and A. A. Libenson. Thermal self-focusing of laser radiation in alkali-halide single crystals. FTT, no. 2, 1971, 656-658.

109. Yeleonskiy, V. M., and V. P. Silin. Self-focusing of a vector field. ZhETF, PvR, v. 13, no. 3, 1971, 167-170.

110. Zakharov, V. Ye., V. V. Sobolev, and V. S. Synakh. Study of optical spike behavior in nonlinear media. ZhETF, v. 60, no. 1, 1971, 136-145.

5. Beam Modulation

111. Bakay, A. S. Self-modulation of waves in nonlinear media. ZhETF, v. 60, no. 1, 1971, 182-190.

112. Lur'ye, A. I., and B. I. Shkurskiy. Effect of errors in raster preparation on signal quality in opto-electronic devices. OMP, no. 1, 1971, 11-14.

113. Varshalovich, D. A., and M. I. D'yakonov. Quantum theory of electron beam modulation at optical frequencies. ZhETF, v. 60, no. 1, 1971, 90-101.

6. Phonon Scattering

114. Andreyev, Yu. V., V. A. Volokhatyuk, R. R. Krasovskiy, V. S. Larionov, and R. I. Ryabukha. Using an opto-acoustic device for passive formation of complex electrical signal waveforms. PTE, no. 1, 1971, 142-143.

115. Lemanov, V. V., O. V. Shakin, and G. A. Smolenskiy. Optical scattering in hypersonic waves in lithium niobate. FTT, no. 2, 1971, 533-535.

116. Pirozhkov, V. A., V. R. Nagibarov, V. V. Samartsev, R. G. Ustanov, and Ye. I. Shtyrkov. Study of $LiNbO_3$ single crystal parameters by scattering of laser light in hypersonic oscillations. OiS, v. 30, no. 2, 1971, 329-331.

7. General Theory

117. Alekseyev, A. V., and U. Kh. Kopvillem. Electrical nuclear quadrupole resonance with optical bleaching waves. OiS, v. 30, no. 1, 1971, 169-170.

118. Anikin, V. I., L. N. Deryugin, and V. Ye. Sotin. Resonant excitation of plane optical dielectric waveguide by the overcritical layer of a restricted beam. IVUZ Radioelektronika, no. 4, 1971, 371-378.

119. Astaf'yeva, L. G., Ye. K. Naumenko, and A. P. Prishivalko. Determining optical constants of scattering particles in singly-dispersed media by characteristics of the scattered light. ZhPS, v. 14, no. 1, 1971, 133-139.

120. Blokh, O. G., I. V. Kutnyy, and V. Ya. Nesterenko. Electrooptic effect in HIO_3 crystals. UFZh, no. 2, 1971, 327-328.

121. Brodin, M. S., and D. B. Goer. Two-photon absorption of ruby laser emission in ZnSe and $Zn_x\ Cd_{1-x}\ Se$. FTP, no. 2, 1971, 256-261.

122. Fedorov, F. I., and V. V. Filippov. Amplitude relationships for optical waves at a uniaxial crystal-isotropic medium boundary. OiS, v. 30, no. 2, 1971, 318-322.

123. Kadomtsev, B. B., and V. I. Karpman. Nonlinear waves. UFN, v. 103, no. 2, 1971, 193-232.

124. Kovarskiy, V. A., and N. F. Perel'man. Multiphoton processes during resonant scattering of light by atoms. ZhETF, v. 60, no. 2, 1971, 509-512.

125. Lebedev, I. V. Multiphoton ionization of atoms via an intermediate resonant level. OiS, v. 30, no. 2, 1971, 381-383.

126. Naumenko, Ye. K. Applicability limits of Rayleigh formulas in calculating optical scattering index. ZhPS, v. 14, no. 1, 1971, 129-132.

127. Zel'dovich, B. Ya.,and I. I. Sobel'man. Feasibility of reducing optical pulse widths in metal halide vapors. ZhETF, PvR, v. 13, no. 3, 1971, 182-185.

H. SPECTROSCOPY OF LASER MATERIALS

128. Bulanyy, P. F., N. A. Vlasenko, I. B. Yermolovich, F. F. Kodzhespirov, N. K. Konovets, L. A. Mozharovskiy, and M. K. Sheynkman. Luminescent properties of mixed $Zn_xCd_{1-x}S$ single crystals. OiS, v. 30, no. 2, 1971, 299-305.

129. Kachalov, O. V. Selection criteria for Brillouin scattering in crystals. ZhETF, PvR, v. 13, no. 3, 1971, 109-112.

130. Klinkov, V. K. Zeeman effect in luminescence of the R-lines in ruby. OiS, v. 30, no. 2, 1971, 291-298.

131. Morgenshtern, Z. L., and V. B. Neustruyev. Restoration of luminescence yield of a ruby in an external electric field. OiS, v. 30, no. 2, 1971, 361-364.

132. Morozov, A. M., L. G. Morozova, A. K. Trofimov, and P. P. Feofilov. Effect of stechiometric enhancement on spectral linewidth of Nd^{3+} in FAP (fluoroapatite) crystals. ZhPS, v. 14, no. 1, 1971, 163-165.

133. Perlin, Ye. Yu., and V. A. Kovarskiy. Effect of resonance laser radiation on the shape of impurity optical absorption bands. OiS, v. 30, no. 2, 1971, 323-328.

134. Pershina, Ye. V., and Sh. Sh. Raskin. On emission spectra of γ-irradiated microporous glass. Raman scattering spectra in defects. OiS, v. 30, no. 2, 1971, 260-262.

135. Shalyapin, A. L., B. V. Shul'gin, F. F. Gavrilov, Yu. A. Fedorovskikh, and V. G. Chukhlantsev. Luminescence of sodium-zirconium silicate glasses activated by rare-earth ions. ZhPS, v. 14, no. 1, 1971, 89-93.

136. Voron'ko, Yu. K., B. I. Denker, and V. V. Osiko. X-ray luminescence of Nd^{3+} in laser crystals. FTT, no. 1, 1971, 178-184.

J. ULTRASHORT PULSE GENERATION

137. Basov, N. G., I. Kertes, P. G. Kryukov, Yu. A. Matveyets, Yu. V. Senatskiy, and S. V. Chekalin. Nonlinear losses in generators and amplifiers of ultrashort optical pulses. ZhETF, v. 60, no. 2, 1971, 533-540.

K. LASER AMPLIFIER SYSTEMS

138. Deryugin, L. N., B. P. Kulakov, and V. K. Nurmukhametov. Possibilities of superregenerative amplification in a Q-spoiled laser. RiE, no. 1, 1971, 141-148.

139. Kovalenko, V. F., and V. V. Mar'yenko. Nonmutual element for a ruby paramagnetic amplifier for the low-field case. RiE, no. 3, 1971, 446-447.

140. Milovskiy, N. D. Stability of a single-frequency stationary mode t-w laser at uniform broadening of the active medium. IVUZ Radiofizika, no. 1, 1971, 93-99.

L. CRYSTAL GROWING

141. Zhukovskiy, V. M., Ye. V. Tkachenko, and A. N. Petrov. On the kinetics and mechanism of $Sr\,Mo\,O_4$ formation in solid-phase synthesis reactions. ZhPKh, no. 2, 1971, 291-296.

M. GENERAL LASER THEORY

142. Baklanov, Ye. V., and V. P. Chebotayev. Field effects from resonant interactions of counter-flowing waves in gas. ZhETF, v. 60, no. 2, 1971, 552-568.

143. Klibanova, I. M., A. N. Malakhov, and A. A. Mal'tsev. Fluctuation in multifrequency oscillators. IVUZ Radiofizika, no. 2, 1971, 173-198.

144. Klubis, Ya. D. On relaxation in a two-level system. ZhPS, v. 14, no. 1, 1971, 68-72.

145. Samson, A. M. Four-level generation in a laser with long lifetimes at the lower working level. AN BSSR. Doklady, v. 15, no. 2, 1971, 123-126.

146. Sivers, V. N., V. Ye. Shemshura, and B. S. Yugas. Determining the density of excited atoms for the case of two-photon absorption. UFZh, no. 3, 1971, 391-395.

II. LASER APPLICATIONS

A. BIOLOGICAL EFFECTS

147. Rubin, L. B., T. Ye. Krendeleva, V. Z. Pashchenko, N. V. Shantorenko, K. N. Timofeyev, V. V. Petrov, and A. V. Ivanov. Effect of ruby laser radiation on the pigmentation mechanism of photosynthesizing organisms. ZhPS, v. 14, no. 1, 1971, 78-81.

B. COMMUNICATIONS

1. Beam Propagation in the Atmosphere

148. Andreyev, G. A., E. I. Gel'fer, V. A. Zverev, and V. E. Tseytlin. Statistical two-dimensional space characteristics of intensity fluctuations in laser beam propagation through the ground-layer atmosphere. IVUZ Radiofizika, no. 2, 1971, 276-284.

149. Denchik, B. N., M. V. Kabanov, B. A. Savel'yev, and B. V. Goryachev. Fluctuating characteristics of optical fluxes propagating in media with a wide range of scattering indices. IVUZ Fizika, no. 1, 1971, 144-145.

150. Donchenko, V. A., and M. V. Kabanov. Attenuation of a point-source optical signal in scattering media. IVUZ Fizika, no. 1, 1971, 133-134.

151. Faraponova, G. P. On the vertical structure of atmospheric transparency. FAiO, no. 1, 1971, 81-83.

152. Filippov, V. L., and S. O. Mirumyants. Attenuation of i-r by atmospheric haze in spectral regions coincident with water absorption bands. FAiO, no. 1, 1971, 88-91.

153. Gurvich, A. S., V. V. Pakhomov, and A. M. Cheremukhin. On isotropic fluctuations in refractive index of the ground layer atmosphere during small-scale turbulence. FAiO, no. 1, 1971, 76-80.

154. Gorchakov, G. I. On the level of polarized coherence in light scattered by atmospheric air. FAiO, no. 2, 1971, 224-227.

155. Katzev, I. L. Propagation of a sinusoidally modulated optical beam in deep layers of a turbid medium. FAiO, no. 2, 1971, 212-218.

156. Kallistratova, M. A., and D. A. Timanovskiy. Distribution in structural characteristics of fluctuations in refractive index of the ground atmospheric layer. FAiO, no. 1, 1971, 73-75.

157. Vaytsel', V. I. Optical heterodyning in a turbulent atmosphere. RiE, no. 2, 1971, 439-442.

2. Beam Propagation in Water

158. Vlasov, G. I., S. P. Pivovarov, and V. G. Chikryzov. Cableless transmission of tv signals under water. TKiT, no. 2, 1971, 64-66.

3. Theory of Propagation

159. Bass, F. G., Yu. G. Gurevich, and M. V. Kvimsadze. Propagation of strong e-m waves in a two-component plasma. ZhETF, v. 60, no. 2, 1971, 632-642.

C. COMPUTER TECHNOLOGY

160. Bogdanov, A. A., I. Ya. Brusin, and V. D. Skvortsov. Effect of photofilm noise in optical processing systems for signals from synthetic aperture antennas. IVUZ Radiofizika, no. 1, 1971, 114-126.

161. Goldobin, I. S., A. S. Dobkin, V. D. Kurnosov, G. A. Lapitskaya, A. A. Pleshkov, O. N. Prozorov, L. A. Rivlin, A. F. Solodkov, and V. S. Shil'dyayev. Quantum optical integrated circuits using GaAs. FTP, no. 1, 1971, 170-172.

162. Ziegler, B. The new Dokumator DL-4 laser apparatus. Jenaer Rundschau, no. 2, 1971, 80-81.

D. HOLOGRAPHY

163. Andreyev, I. Lasers combat lawbreakers. Sotsialisticheskaya industriya, Feb. 7, 1971, p. 4.

164. Beynarovich, L. N., N. P. Larionov, A. V. Lukin, and K. S. Mustafin. Obtaining high-quality copies of holograms. OiS, v. 30, no. 2, 1971, 345-348.

165. Denisyuk, Yu. N. Images of the outside world. Priroda, no. 2, 1971, 2-14.

166. Gal'pern, A. D., and Yu. N. Denisyuk. Feasibility of enhancing image quality by a stored hologram method. OiS, v. 30, no. 2, 1971, 340-344.

167. Gibin, I. S., and P. Ye. Tverdokhleb. Effect of nonlinear characteristics in photomaterial on holographic recording of the Fourier image of a slit. RiE, no. 1, 1971, 205-207.

168. Gurevich, S. B. Future holographic television. TKiT, no. 2, 1971, 67-69.

169. Ignatov, A. B., I. I. Komissarova, G. V. Ostrovskaya, and L. L. Shapiro. Dual wavelength single-exposure holographic interferometry of a plasma. ZhTF, no. 2, 1971, 417-423.

170. Khaykin, B. Ye., and V. S. Khitrova. On a method for machine synthesis of holograms. OiS, v. 30, no. 2, 1971, 375-376.

171. Kopylov, P. M., and A. N. Tachkov. Holographic selection of aspects. TKiT, no. 3, 1971, 61-62.

172. Meshchankin, V. M. On features of discrete holograms with a fixed step. RiE, no. 2, 1971, 371-379.

173. Mustafin, K. S., and V. A. Seleznev. Triple-beam holographic interferometry. OiS, v. 30, no. 1, 1971, 154-158.

174. Pal'tsev, G. P., and K. A. Stozharova. Immersion liquids for holograms on photofilm. OMP, no. 1, 1971, 52-56.

175. Pawluczyk, R. Holographic microscopy. Postepy fizyki, no. 1, 1971, 105-121.

E. INSTRUMENTATION AND MEASUREMENTS

1. Measurement of Laser Parameters

176. Belogol'skiy, V. A., and A. V. Kubarev. On passive stabilization of gas laser power. IT, no. 3, 1971, 89-90.

177. Bessnaposhnikov, A. A., I. Kh. Kuchuberiya, N. V. Simonova, A. Z. Rakhel'kin, A. A. Arsen'yev, and G. A. Zeytunyan. Apparatus for multichannel spectral recording of laser emission scattered by electron plasma. PTE, no. 1, 1971, 262.

178. Gurevich, I. M., G. V. Firsov, and F. A. Charnaya. The IEKI-2 wideband meter for measuring coherent radiation. PTE, no. 1, 1971, 273.

179. Kremenchugskiy, L. S., P. P. Pogoretskiy, Ye. N. Sal'kova, M. S. Soskin, A. G. Chepilko, and A. Ya. Shul'ga. Using pyroelectric sensors to measure emission characteristics of giant laser pulses. PTE, no. 1, 1971, 202-204.

180. Zakurenko, O. Ye., R. A. Valitov, A. S. Arzumanov, and V. M. Kuz'michev. Compensated power meter for c-w laser radiation. IT, no. 1, 1971, 21-22.

2. Miscellaneous Measurement Applications

181. Faynberg, B. D., and B. A. Kiselev. Laser absorption analysis of strongly absorptive substances. OiS, v. 30, no. 1, 1971, 168.

182. Kapitanskiy, V. R., A. I. Kostakov, A. I. Livshits, M. Ye. Notkin, and I. M. Metter. Experiments with a collimated-beam hydrogen laser. ZhTF, no. 2, 1971, 362-367.

183. Kontsevoy, Yu. A., R. R. Rezvyy, and V. M. Gololobov. Using an ellipsometric laser microscope to control semiconductor structures. Zavodskaya laboratoriya, no. 2, 1971, 184-186.

184. Korobkin, V. V., A. A. Malyutin, and M. Ya. Shchelev. Limits on time resolution of electron-optical devices of the PIM-UMI type. ZhTF, no. 1, 1971, 216-219.

185. Korobkin, V. V., and L. N. Pyatnitskiy. Interferometer for measuring refractive index in a plasma whose parameters vary over a long time interval. ZhTF, no. 2, 1971, 440-442.

186. Lebedev, I. V., B. S. Rinkevichyus, and Ye. V. Yastrebova. Study of a boundary layer by means of a laser. PMTF, no. 1, 1971, 150-152.

187. Macek, K. Lasers and their application in automation of construction machinery. Automatizace, no. 2, 1971, 52-54.

188. Mohr, J. Laser microspectroanalysis with a Q-switched solid-state laser. Jenaer Rundschau, no. 2, 1971, 93-96.

189. Pokrovskiy, Ya. Ye., and K. I. Svistyunova. Light scattering by condensed phase droplets of nonequilibrium carriers in germanium. ZhETF, PvR, v. 13, no. 6, 1971, 297-300.

190. Brodin, M. S., and A. M. Kamuz. On the nonlinear nature of NaCl crystal. ZhETF, PvR, v. 13, no. 3, 1971, 170-173.

191. Schekerow, O. S. Applications of quantum electronics to ship navigation. Seewirtschaft, no. 1, 1971, 24-28.

192. Sokolov, R. N., G. D. Petrov, and F. A. Kudryavitskiy. Contactless optical probe for measuring dimensional spectra of drops in a heated region. TVT, no. 1, 1971, 214-215.

F. MATERIALS PROCESSING

1. Nonlinear Surface Processes

193. Potapov, Ye. V., and A. V. Rakov. Determining dispersion of optical constants in thin absorptive films on transparent or weakly-absorbing substrates. ZhPS, v. 14, no. 1, 1971, 140-144.

194. Zhukov, V. V. Microjunction structure of a lead-to-film laser weld. MiTOM, no. 2, 1971, 51-53.

2. Beam-Target Interaction Studies

a. Metals

195. Kirillov, V. M., and P. I. Ulyakov. Ratio of liquid and gas phases in the interaction of a focused laser beam with metal. FiKhOM, no. 1, 1971, 8-12.

196. Komotskiy, V. A. On the maximum vaporization rate from a metal surface. ZhTF, no. 1, 1971, 220-221.

197. Mirkin, L. I. Saturation of iron with tungsten by means of a laser beam. IVUZ. Chernaya metallurgiya, no. 2, 1971, 98-101.

b. Dielectrics

198. Bonch-Bruyevich, A. M., I. V. Aleshin, Ya. A. Imas, and A. V. Pavshukov. Absorption of laser emission in the surface layer of optical glass. ZhTF, no. 3, 1971, 617-620.

c. Semiconductors

199. Arsen'yev, V. V., V. S. Dneprovskiy, D. N. Khyshko, and L. I. Sysoyev. Nonlinear absorption of picosecond optical pulses in semiconductors. ZhETF, v. 60, no. 1, 1971, 114-116.

200. Gvardzhaladze, T. L., A. Z. Grasyuk, I. B. Zubarev, P. G. Kryukov, and O. B. Shatberashvili. Interaction of an ultrashort Nd laser pulse with GaAs. ZhETF, PvR, v. 13, no. 3, 1971, 159-161.

201. Kazakevich, V. I., Yu. F. Babikova, A. A. Kozhemyankin, and N. N. Goryunov. Modeling of thermal breakdown in a transistor by means of laser beam heating. RiE, no. 3, 1971, 455-457.

d. Miscellaneous Studies

202. Afanas'yev, Yu. V., E. M. Belenov, O. N. Krokhin, and I. A. Poluektov. Self-consistent heating mode of material by laser pulses under conditions of non-equilibrium ionization. ZhETF, v. 60, no. 1, 1971, 73-82.

203. Afanas'yev, Yu. V., E. M. Belenov, O. N. Krokhin, and I. A. Poluektov. Possibility of obtaining a powerful neutron source from interaction of a laser beam with a complex target. ZhETF, PvR, v. 13, no. 5, 1971, 257-260.

204. Askar'yan, G. A., and N. M. Tarasova. Initial stage of an optical explosion in particulate matter under a powerful light flux. ZhETF, v. 60, no. 2, 1971, 617-620.

205. Barashev, P. P., and V. L. Tal'roze. Competition of thermal and photochemical mechanisms during material conversion in the radiation field of a pulsed laser. KhVE, v. 5, no. 1, 1971, 30-36.

206. Bykovskiy, Yu. A., V. A. Gridin, V. I. Dymovich, Z. I. Matveyeva, and V. N. Nevolin. Feasibility of studying the composition of multicomponent geological formations by evaporation with a laser beam. ZhTF, no. 2, 1971, 442-443.

207. Kuzikovskiy, A. V., V. A. Pogodayev, and S. S. Khmelevtsov. Evaporation of a water drop by an optical pulse. I-FZh, no. 1, 1971, 21-25.

208. Movsesyan, R. Ye., and V. O. Chaltykyan. Interaction of a three-level atomic system with intense e-m radiation. AN ArmSSR. Doklady, v. 52, no. 1, 1971, 33-40.

209. Samartsev, V. V., and A. G. Shagidullin. Effect of random reorientation of impurity particles on intensity of optical echo. OiS, v. 30, no. 1, 1971, 171-174.

210. Savos'ko, G. Ye. Planar one-dimensional flow under water from the energy in the external layer of evaporated material, and beam transfer of energy to a sublimating surface. PMTF, no. 1, 1971, 153-155.

G. PLASMA GENERATION

211. Basov, N. G., O. N. Krokhin, and P. G. Kryukov. Lasers and controlled thermonuclear reactions. Priroda, no. 1, 1971, 7-15.

212. Mul'chenko, B. F., and Yu. P. Rayzer. Laser breakdown of a Ne-Ar mixture, and the effect of photoionization of excited atoms. ZhETF, v. 60, no. 2, 1971, 643-650.

213. Ponizovskiy, E. L. International Conference on Laser Plasma. Priroda, no. 1, 1971, 15.

214. Vinogradov, A. V., and V. V. Pustovalov. Optical absorption in a nonhomogeneous laser plasma. ZhETF, PvR, v. 13, no. 6, 1971, 317-320.

III. SOURCE ABBREVIATIONS

DAN ArmSSR	-	Akademiya nauk Armyanskoy SSR. Doklady
DAN BSSR	-	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	-	Akademiya nauk SSSR. Doklady
FAiO	-	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FiKhOM	-	Fizika i khimiya obrabotki materialov
FTP	-	Fizika i tekhnika poluprovodnikov
FTT	-	Fizika tverdogo tela
I-FZh	-	Inzhenerno-fizicheskiy zhurnal
IT	-	Izmeritel'naya tekhnika
IVUZ Fiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Radioelektr	-	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika

KhVE	-	Khimiya vysokikh energiy
KiK	-	Kinetika i kataliz
MiTOM	-	Metallovedeniye i termicheskaya obrabotka materialov
OiS	-	Optika i spektroskopiya
OMP	-	Optiko-mekhanicheskaya promyshlennost'
PMTF	-	Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki
PTE	-	Pribory i tekhnika eksperimenta
RiE	-	Radiotekhnika i elektronika
TKiT	-	Tekhnika kino i televideniya
TVT	-	Teplofizika vysokikh temperatur
UFN	-	Uspekhi fizicheskikh nauk
UFZh	-	Ukrainskiy fizicheskiy zhurnal
ZhETF	-	Zhurnal eksperimental'noy i teoreticheskoy fiziki

ZhETF. PvR	-	Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu
ZhPK	-	Zhurnal prikladnoy khimii
ZhPS	-	Zhurnal prikladnoy spektroskopii
ZhTF	-	Zhurnal tekhnicheskoy fiziki

AUTHOR INDEX

I

K

L

M

Z