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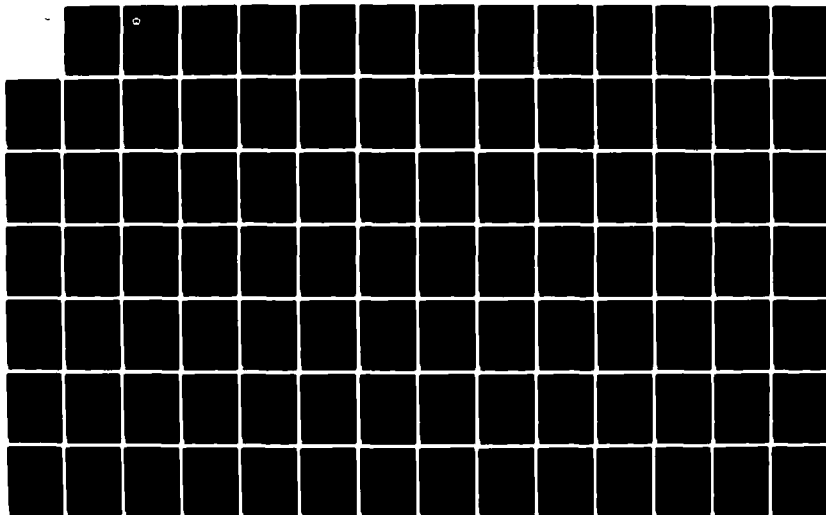
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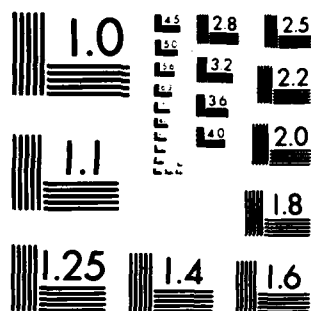
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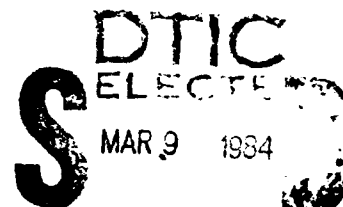
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BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 63

JANUARY - FEBRUARY 1983

Date of Report

December 9, 1983

Vice Director for Foreign Intelligence
Defense Intelligence Agency

This document was prepared for the Defense Intelligence Agency under an intragovernment agreement. It is intended to facilitate access of government researchers to Soviet laser literature.

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20. ABSTRACT This is the Soviet Laser Bibliography for January-February 1983, and is No. 63 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; crystal growing; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; adaptive optics; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; laser spectroscopy; beam-target interaction; and plasma generation and diagnostics.		

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Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is January-February 1983, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are also included. Laser items from the popular or semipopular press are generally omitted.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL) indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.



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A. SOLID STATE LASERS

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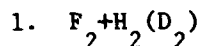
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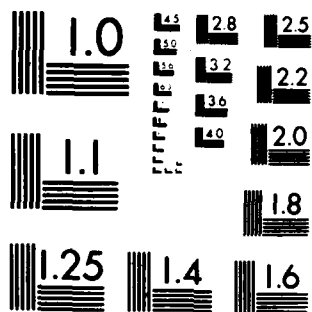
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J. BEAM-TARGET INTERACTION

1. Metal Targets

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IV. SOURCE ABBREVIATIONS

(CIRC Codens)

APC	(APYCA)	Acta physica et chemica. Szeged
APP	(APAHA)	Acta physica Academiae scientiarum hungaricae
BAPS	(BAPTA)	Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques
CCCC	(CCCCA)	Collection of Czechoslovak Chemical Communications
CJP	(CZYPA)	Czechoslovak Journal of Physics
DAN	(DANKA)	Akademiya nauk SSSR. Doklady
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Dopovidi. Seriya A. Fiziko-matematychni ta tekhnichni nauky
DAN Uz	(DANUA)	Akademiya nauk Uzbekskoy SSR. Doklady
DBAN	(CRABA)	Bulgarska akademiya na naukite. Doklady
DNR	(DERUB)	Deponirovannyye nauchnyye raboty
EQM	(EOBMA)	Elektronnaya obrabotka materialov
ETP	(EXPRA)	Experimentelle Technik der Physik
FA10	(IFAOA)	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FG1V	(FGVZA)	Fizika gorennya i vzryva
F1KhOM	(FKOMA)	Fizika i khimiya obrabotki materialov
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Est	(ETFMB)	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika, matematika
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Uz	(IUZFA)	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
ISOAN Khim	(IZSKA)	Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUVA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelek	(IVUZB)	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika

JMO	(JMKOA)	Jemna mehanika a optika
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHFKA)	Khimiya vysokikh energi
KL	(KNLTA)	Knizhnaya letopis'
KSpF	(KRSFA)	Kratkiye soobshcheniya po fizike
Lit fiz sb	(LFSBA)	Litovskiy fizicheskiy sbornik
NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OIS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	(OIPOB)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
Poverkh	(-----)	Pverkhnost'. Fizika, khimiya, mekhanika
PSS	(PSSAB)	Physica Status Solidi (A). Applied Research (B). Basic Research
PT	(PZTKA)	Przeglad telekomunikacyjny
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
RRP	(RRPZA)	Revue Roumaine de Physique
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhR	(RARAB)	Referativnyy zhurnal. Radiotekhnika
Sb1	sbornik	Vsesoyuznoye soveshchaniye po primeneniyu lazerov v tekhnologii mashinostroyeniya, Zvenigorod, 11-13 Oct 1982. Tezisy dokladov. Moskva, Nauka, 1982.
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- Sb15 Nelineynyye volny. Samoorganizatsiya. Vsesoyuznaya shkola po nelineynym volnam. 6th, Gor'kiy, March 1981. Materialy. Moskva, Nauka, 1983.
- Sb16 Fizika poluprovodnikov i dielektrikov. Fizicheskiye nauki. Mezhdunarodnyy sbornik. Kishinev, Shtiintsa, 1982.
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- Sb18 Sistemy i sredstva peredachi informatsii po kanalam svyazi. Leningrad, 1982.
- Sb19 Nauchnyye trudy vuzov LitSSR. Radioelektronika, no. 2, 1982.
- Sb20 Poluprovodnikovaya elektronika v tekhnike svyazi, no. 22, Moskva, 1982.
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Sb43		Vsesoyuznaya konferentsiya po fizike elektronnykh i atomnykh stolknoveniy. 8th. Leningrad, 29 Sep - 2 Oct 1981 (VIII VKEAS). Leningrad, 1982.
SCF	(SCEFA)	Studii si cercetari de fizica
TIMF	(TMFZA)	Teoreticheskaya i matematicheskaya fizika
TKiT	(TKTEA)	Tekhnika kino i televideniya
Tr1	trudy	Kiyevskiy GU. Vestnik. Fizika, no. 23, 1982.
Tr2		Moskovskoye vyssheye tekhnologicheskoye uchilishche. Trudy, no. 368, 1981.
Tr3		Fizicheskoy institut AN SSSR. Trudy, no. 133, 1983.
TVKE	(TVKED)	Tochnoye vremya i kvantovaya elektronika
TVT	(TVYTA)	Teplofizika vysokikh temperatur
VBU	(VBMFA)	Belorusskiy universitet. Vestnik. Seriya 1. Matematika, fizika, mekhanika
UFN	(UFNAA)	Uspekhi fizicheskoy nauk
ZhETF	(ZETFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETFP	(ZEPFA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	(ZFKHA)	Zhurnal fizicheskoy khimii
ZhNKh	(ZNOKA)	Zhurnal neorganicheskoy khimii
ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki

V. AUTHOR AFFILIATIONS

NS. Non-Soviet

0. Affiliation not given
1. Physics Institute imeni Lebedev, AN SSSR, Moscow (Fizicheskiy institut imeni Lebedeva AN SSSR).
2. Moscow State University (Moskovskiy gosudarstvennyy universitet).
3. Institute of Physics, AN BSSR, Minsk (Institut fiziki AN BSSR).
4. Physicotechnical Institute im Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut im Ioffe AN SSSR).
5. Institute of Physics, AN UkrSSR, Kiev (Institut fiziki AN UkrSSR).
6. Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR).
7. State Optical Institute im Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im Vavilova).
8. Radiophysics Scientific Research Institute at Gor'kiy State University (NI radiofizicheskiy institut pri Gor'kovskom GU).
10. Institute of Semiconductor Physics, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov Sibirskogo otdeleniya AN SSSR).
12. Leningrad State University (Leningradskiy GU).
13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografii AN SSSR).
15. Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR).
16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
17. Institute for Problems of Mechanics, AN SSSR, Moscow (Institut problem mekhaniki AN SSSR).
19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).
20. All Union Scientific Research Institute of Physicotechnical and Electronic Measurements, Moscow (VNII fiziko-tekhnicheskikh i elektronnykh izmereniy).
22. Institute of Metallurgy im Baykov, Moscow (Institut metallurgii im Baykova).
23. Institute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).
24. Moscow Higher Technical College im Bauman (Moskovskoye vyssheye tekhnicheskoye uchilishche im Baumana).
29. Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut).
30. Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).
32. Physics Scientific Research Institute at Leningrad State University (Fizicheskiy NII pri Leningradskom GU).
37. Yerevan State University (Yerevanskiy GU).
39. Institute of Cybernetics, AN GruzSSR (Institut kibernetiki AN GruzSSR).
40. Tbilisi State University (Tbilisskiy GU).
42. Ural Polytechnic Institute im Kirov, Sverdlovsk (Ural'skiy politekhnicheskiy institut im Kirova).
46. Novosibirsk State University (Novosibirskiy GU).
49. Vilnius State University (Vil'nyuskiy GU).
50. Institute of Semiconductor Physics, AN LitSSR, Vilnius (Institut fiziki poluprovodnikov AN LitSSR).
51. Kiev State University (Kiyevskiy GU).

59. Institute of Physics Research, AN ArmSSR (Institut fizicheskikh issledovaniy AN ArmSSR).
63. Institute of Physics, AN LatSSR (Institut fiziki AN LatSSR).
64. Institute of Atmospheric Physics, AN SSSR (Institut fiziki atmosfery AN SSSR).
67. Institute of Physics of Chemistry, AN SSSR (Institut khimicheskoy fiziki AN SSSR).
69. Institute of Oceanography, AN SSSR (Institut okeanologii AN SSSR).
71. Institute of Applied Mathematics, AN SSSR (Institut prikladnoy matematiki AN SSSR).
72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).
73. Institute of Theoretical Physics im Landau, AN SSSR (Institut teoreticheskoy fiziki AN SSSR).
74. Institute of High Temperatures, AN SSSR (Institut vysokikh temperatur AN SSSR).
75. Institute of Automation and Electronic Measurements, Siberian Branch, AN SSSR (Institut avtomatiki i elektrometrii SOAN).
77. Institute of Inorganic Chemistry, Siberian Branch AN SSSR (Institut neorganicheskoy khimii SOAN).
78. Institute of Atmospheric Optics, Siberian Branch, AN SSSR (Institut optiki atmosfery SOAN).
79. Institute of Nuclear Physics, Siberian Branch, AN SSSR (Institut yadernoy fiziki SOAN).
80. Computer Center, Siberian Branch, AN SSSR (Vychislitel'nyy tsentr SOAN).
82. Physicotechnical Institute, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskii institut AN UkrSSR).
83. Institute of Problems in Material Studies, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR).
84. Institute of Radiophysics and Electronics, AN UkrSSR (Institut radiofiziki i elektroniki AN UkrSSR).
85. Institute of Nuclear Physics, AN UzSSR (Institut yadernoy fiziki AN UzSSR).
87. Belorussian State University (Belorusskiy GU).
91. Power Institute im Krzhizhanovskiy (Energeticheskii institut im Krzhizhanovskogo).
94. Gor'kiy State University (Gor'kovskiy GU).
98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom GU).
104. Kaunas Polytechnic Institute (Kaunasskiy politekhnicheskii institut).
106. Kiev Polytechnic Institute (Kiyevskiy politekhnicheskii institut).
107. Khar'kov State Scientific Research Institute of Metrology (Khar'kovskiy gos NII metrologii).
109. Latvian State University (Latviyskiy GU).
110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskii institut).
118. Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhnicheskii institut).
119. Moscow Institute of Electronic Engineering (Moskovskiy institut elektronnoy tekhniki).
120. Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography (Moskovskiy institut inzhenerov geodezii, aerofotos'yemki i kartografii).
132. Tomsk State University (Tomskiy GU).
134. Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya).
135. Central Scientific Research Institute of Communications (Tsentral'nyy NII svyazi).

137. Voronezh State University (Voronezhskiy GU).
140. All Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements (VNII fiziko-tekhnicheskikh i radio-tekhnicheskikh izmereniy).
150. Dnepropetrovsk State University (Dnepropetrovskiy GU).
151. Kishinev State University (Kishinevskiy GU).
154. Marine Hydrophysical Institute, AN UkrSSR (Morskoy gidrofizicheskiy institut AN UkrSSR).
158. Military Medical Academy, Leningrad (Voyenno-meditsinskaya akademiya).
159. Institute of Thermophysics, Siberian Branch, AN SSSR, Novosibirsk (Institut teplofiziki SOAN).
161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhniki, elektroniki i avtomatiki).
162. Moscow State Pedagogical Institute (Moskovskiy gos pedagogicheskiy institut).
163. All Union Scientific Research Institute of Metrology im Mendeleyev (VNII metrologii im Mendeleyeva).
172. Main Astronomical Observatory, AN UkrSSR (Glavnaya astronomicheskaya observatoriya AN UkrSSR).
174. Scientific Research Institute of Organic Intermediates and Dyestuffs, Moscow (NII organicheskikh poluproduktov i krasiteley).
178. Moscow Institute of Chemical Technology im Mendeleyev (Moskovskiy khimiko-tekhnicheskiy institut im Mendeleyeva).
179. Moscow Institute of Fine Chemical Technology im Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii im Lomonosova).
180. Institute of Heat and Mass Exchange, AN BSSR (Institut teplo- i massoobmena AN BSSR).
181. Institute of Nuclear Research, AN UkrSSR, Kiev (Institut yadernykh issledovaniy AN UkrSSR).
184. Institute of Geochemistry and Analytical Chemistry im Vernadskiy, AN SSSR, Moscow (Institut geokhimii i analiticheskoy khimii im Vernadskogo AN SSSR).
193. Institute of Theoretical and Applied Mechanics, Siberian Branch, AN SSSR, Novosibirsk (Institut teoreticheskoy i prikladnoy mekhaniki SOAN).
199. Moscow Institute of Electronic Machinery (Moskovskiy institut elektronogo mashinostroyeniya).
201. Institute for Problems of Information Transmission, AN SSSR, Moscow (Institut problem prerdachi informatsii AN SSSR).
207. Main Geophysical Observatory (Glavnaya geofizicheskaya observatoriya).
208. Tula Polytechnic Institute (Tul'skiy politekhnicheskiy institut).
210. Institute of Physics, Siberian Branch, AN SSSR (Institut fiziki SOAN).
216. Kazan' Aviation Institute (Kazanskiy aviatsionnyy institut).
227. Tashkent State University (Tashkentskiy GU).
230. Novosibirsk Institute for Engineers of Geodesy, Aerial Surveying and Cartography (Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii).
240. Odessa State University (Odesskiy GU).
243. Radio Engineering Institute, AN SSSR (Radiotekhnicheskiy institut AN SSSR).
248. Institute of Mechanics at Moscow State University (Institut mekhaniki pri Moskovskom GU).
283. Institute of Physics of Metals, AN UkrSSR, Kiev (Institut metallofiziki AN UkrSSR).
287. Institute of Physical Chemistry, AN SSSR (Institut fizicheskoy khimii (AN SSSR).

289. Central Scientific Research Institute of Geodesy, Aerial Surveying and Cartography (Tsentral'nyy NII geodezii, aerofotos'yemki i kartografii).
299. Institute of Electronics, AN BSSR (Institutelektroniki AN BSSR).
308. Moscow Institute of Railroad Transport Engineers (Moskovskiy institut inzhenerov zheleznodorozhnogo transporta).
312. Kiev Institute of Civil Aviation Engineers (Kiyevskiy institut inzhenerov grazhdanskoy aviatsii).
317. Saratov Polytechnic Institute (Saratovskiy politekhnicheskiy institut).
334. Scientific Research Institute of Applied Physical Problems at Belorussian State University (NII prikladnykh fizicheskikh problem pri Belorusskom GU).
335. Institute of Electrochemistry, AN SSSR (Institut elektrokhimii AN SSSR).
379. Gomel' State University (Gomel'skiy GU).
401. Khabarovsk Polytechnic Institute (Khabarovskiy politekhnicheskiy institut).
424. Voroshilovgrad Mechanical Engineering Institute (Voroshilovgradskiy mashinostroitel'nyy institut).
426. Institute of Applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).
430. Minsk Radio Engineering Institute (Minskiy radiotekhnicheskiy institut).
440. Moscow Automobile Plant im Likhachev (Moskovskiy avtomobil'nyy zavod im Likhacheva).
445. All Union Scientific Research Institute of the Metrological Service, Moscow (VNII metrologicheskoy sluzhby).
450. Scientific Research Institute of Stable Isotopes (NII stabil'nykh izotopov).
451. All Union Correspondence Institute of the Textile and Light Industry, Moscow (Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti).
455. Scientific Research Institute for Biological Testing of Chemical Compounds (NII po biologicheskim ispytaniyam khimicheskikh soyedineniy).
459. Moscow Institute of Land Management Engineers (Moskovskiy institut inzhenerov zemleustroystva).
479. Institute of Inorganic Chemistry, AN LatSSR (Institut neorganicheskoy khimii AN LatSSR).
485. Institute of Nuclear Research, AN SSSR, Moscow (Institut yadernykh issledovaniy AN SSSR).
490. Institute of Physics AN GruzSSR (Institut fiziki AN GruzSSR).
492. Institute of Physics AN EstSSR (Institut fiziki AN EstSSR).
497. Chemical Metallurgical Institute, AN KazSSR (Khimiko-metallurgicheskiy institut AN KazSSR).
506. Institute of Physics, AN LitSSR (Institut fiziki AN LitSSR).
535. Kemerov State University (Kemerovskiy GU).
536. Tyumen Industrial Institute (Tyumenskiy industrial'nyy institut).
555. Dnepropetrovsk Mining Institute (Dnepropetrovskiy gornyy institut im Artema).
598. Kuybyshev State University (Kuybyshevskiy GU).
602. Institute of Evolutionary Morphology and Animal Ecology im Severtsev, AN SSSR, Moscow (Institut evolyutsionnoy morfologii i ekologii zhivotnykh im Severtseva AN SSSR).
614. Scientific Research Center for Industrial Lasers, AN SSSR, Troitsk (NI tsentr po tekhnologicheskim lazeram AN SSSR).
627. Kuybyshev Branch of the Physics Institute, AN SSSR (Kuybyshevskiy filial Fizicheskogo institut AN SSSR).
642. Institute of Geotechnical Mechanics, AN UkrSSR, Dnepropetrovsk (Institut geotekhnicheskoy mekhaniki AN UkrSSR).

661. All Union Institute for Improving the Qualifications of Supervisors and Engineering Technical Workers in the Field of Standardization, Production Quality and Metrology (Vsesoyuznyy institut povysheniya kvalifikatsii rukovodyashchikh i inzhenerno-tekhnicheskikh rabotnikov v oblasti standartizatsii, kachestva produktsii i metrologii).
667. Leningrad Institute of Water Transportation (Leningradskiy institut vodnogo transporta).
668. Leningrad Technological Institute of the Cellulose and Paper Industry (Leningradskiy tekhnologicheskii institut tsellulozno-bumazhnoy promyshlennosti).
691. Scientific Research Institute of the Chemistry and Technology of Organoelemental Compounds, Moscow (NII khimii i tekhnologii elementoorganicheskikh soyedineniy).
697. Ural Pedagogical Institute (Ural'skiy pedagogicheskii institut).
699. All Union Scientific Research, Design and Technological Institute for Electrical Welding Equipment, Leningrad (VNI proyektno-konstruktorskiy i tekhnologicheskii institut elektrosvarochnogo oborudovaniya).
705. Rostov-on-Don Institute of Farm Machinery (Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya).
709. Institut of Applied Physics, AN BSSR (Institut prikladnoy fiziki AN BSSR).
713. All Union Scientific Research Technological Institute of Prescription Antibiotics and Enzymes, Leningrad (VNI tekhnologicheskii institut antibiotikov i fermentov meditsinskogo naznacheniya).
717. Leningrad Civil Engineering Institute (Leningradskiy inzherno-stroitel'skiy institut).
719. "Cybernetics" Uzbek Scientific-Industrial Association (Uzbekskoye nauchno-proizvodstvennoye ob'yedineniye "Kibernetika" AN UzSSR).
720. Minsk Medical Institute (Minskiy meditsinskiy institut).
721. Perm Medical Institute (Permskiy meditsinskiy institut).
723. All Union Scientific Research Institute of Light Sources im Lodygin, Saransk (VNII istochnikov sveta im Lodygina).
724. Kazakh Pedagogical Institute, Alma-Ata (Kazakhskiy pedagogicheskii institut).

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POPOV D B	84	ROEDERE R	79	SARYCHEVA N K	5
POPOV R G	19	ROGALIN V YE	34	SATOV YU A	11
POPOV V D	6	ROGOV S A	38, 86	SAUNIN S A	81, 100
POPOV V I	89	ROKAKH A G	91	SAUTENKOV V A	5
POPOV YU M	31, 43	ROMANIUK R	50, 51	SAVCHENKO S M	116
POPOV YU N	82	ROMANOV I M	67	SAVCHENKO V M	115
POPOVA I A	102	ROMANOV YU F	28	SAVEL'YEV D A	103
POPOVA M F	46	ROMANOVA G V	57	SAVEL'YEV V V	92
POPOVA M N	90	ROMANOVA L M	102	SAVII GH	127
POPOVA N R	68, 121	ROSHKOVAN G L	127	SAVIN A A	24
POPOVA T N	54	ROSSOMAKHO F V	86	SAVITSKIY V G	4
POROTNIKOV N V	99, 102	ROVINSKIY R YE	34	SAVVA V A	71
PORTNOVA G V	13	ROZANOV V S	28, 117	SAZHINA M N	72
PORTNOY YE L	111	ROZANOV V V	58	SAZONOV V M	81
PORTSEL' L M	112	ROZANTSEY V A	98	SAZONOVA Z S	62
POTAPOV S YE	26	ROZHDESTVENSKIY A YE	56	S'BEVA M L	37
POZHIDAYEV V N	53	ROZHKOY V V	111, 114	SCHAUER P	1
PRAJSNER S	45	ROZHAN S P	7	SCHUEFELE H	79
PRANYAVICHYUS L	94	RUBANOV A S	59	SCHUETTE F J	61
PRED A M	18	RUBENCHIK A N	115	SCHULTZE D	41
PRILEPSKIKH V D	74	RUBIN L B	89	SCZANIECKI L	39, 45
PRISHIVALKO A P	56, 127	RUBINOV A N	102	SEDOV S M	33
PRIVALOV V YE	10, 129	RUBINOV YU A	25	SEDRAKYAN D H	132
PRIVIS YU S	3	RUD' YU V	101, 102	SEDUKIN A G	64
PROKHOROV A M	2, 3, 53, 90, 91	RUDENKOVA V A	82	SEHAK D G	66, 68
	93, 96, 123	RUDENOK I P	49	SEHENOV A YE	100, 102
PROKLOV V V	38	RUDOL'F V (SEE RUDOLPH V)		SEHENOV P M	60
PROKOP'YEV V N	31	RUDOLPH V	32	SEHENOV V F	115
PROKOP'YEV V V	104	RUDYCHEV V G	106	SEHENTSOV D I	92
PRORVIN A I	102	RUKHADZE A A	28, 42	SENYACHKIN S YE	20
PROTASOV YE A	114	RUMYANTSEY S N	41	SENASHENKO M V	66
PRUDKIY V P	33	RUMYANTSEY K YE	31	SENATOROV YU M	13
PUCEK B	72	RUPASOV A A	119	SENATSKIY YU V	115
PUCHKOV V N	72	RUPASOV V I	61	SENKOY M V	5
PUGACH I P	10	RUPKUS R E	93	SEREBRYAKOV V A	33, 115
PUKHLIY ZH A	40	RUPP R A	84	SERGEYEV A S	84
PUSHNOY L A	85	RUBANOV M M	65	SERGEYEV O A	128
PUTNINYA S YA	83	RUBOV M YU	61	SERGEYEV V G	18
PUTSETA M A	50	RUZICKA J	84	SERGEYEV V V	113

SERKIN V M	36	SHTURBIN A V	94	SOLODOVNIKOV G A	44
SEROV A V	42	SHTYRKOV YE I	113	SOLODUNKO F H	82
SEVERIKOV V M	26	SHULAKOV V A	82	SOLODUNKIN R I	84, 125
SHABANOVA I M	40	SHULEV YU V	9, 88	SOLOV'YEV A V	73
SHAFRAN'OSH I I	12	SHUL'GA V M	84	SOLOV'YEV I A	28
SHAKHVERDOV P A	87	SHUSHLEBINA M I	66	SOLOV'YEV M A	115
SHALDIN YU V	103	SHUSTRYAKOV V M	77	SOLOV'YEV R G	13
SHAL'NOVA M I	89	SHVARTS K K	93	SOLOV'YEV V M	105
SHALUNOV B Z	19	SHVEGZHA ZH L	92	SOLOV'YEV V S	120
SHALYGIN V A	108	SHVEYKIN V I	4, 5, 25	SOROKIN A A	20
SHAPIRO B I	94	SIDORENKO A A	29	SOROKIN A R	10
SHARAFYEV I M	90	SIDORENKO V I	95, 96	SOSKIN N S	65
SHARKOV A V	109	SIDOROV M V	103	SOSNA M M	31
SHARKOV V F	103	SIDOROV S V	94	SOSNIN G P	46
SHASHKOV A G	19, 20	SIDOROV YU S	84	SOTSRIY A B	34
SHATALOV O P	128	SIDOROVA O V	102	SPEYAK I S	93
SHATENEV L A	21	SIDOROVICH V G	60	SPIGULIS YA A	31
SHAYDUK A M	19	SIKORSKAYA L N	66	SPIRKO V	122
SHAYKOV M K	70	SIL'D O	93	SPRIZNITSKIY YU A	81
SHCHEDRIN A I	53	SILICHEV O O	2, 45, 73	STAFYEV V I	94
SHCHEGLOV M YE	21	SINAKIN A V	105	STANCIU GH A	72
SHCHEGLOV V A	107	SINAKOV V A	4, 25	STANCIU I	51
SHCHELKINA YE P	11	SINSONOV V S	56	STANCIULESCU C	8
SHCHEPINA M S	70, 97	SINONENKO T V	77	STARCHAYEVA YE YE	91
SHCHEPINOV V P	74	SINICHKIN YU P	17	STARIK A M	20, 44
SHCHERBACHENKO A M	83	SINITSYN G V	39, 75	STARIKOV S V	1
SHCHERBAKOV A A	64	SINITSYN M V	23	STAROVYTOV A M	71
SHCHERBAKOV A B	28	SIROTA A S	19	STARTSEV A V	37
SHCHERBAKOV I A	84	SISAKYAN I M	60	STASEL'KO D I	71
SHCHUR L M	2, 3	SIZOVA I M	56	STESA A M	39
SHCHUROV V V	115	SKAKOV YU A	105, 109	STEFANTSEV L A	58
SHEDOVA YE M	23	SKILINSKAS S	94	STEL'NKH M F	2
SHEKNOV YE M	80	SKLIZKOV G V	115, 116	STEPANOV S I	59, 127
SHELKOVNIKOV N K	18, 19	SKOBELEV I YU	117, 119	STEPANOV S M	84, 122
SHELOBOLIN A V	58	SKODA V	119	STEPANOV S I	67
SHELYAGIN V D	7	SKOVAROD'KO S M	32	STEPANOV YE V	4
SHEPELENKO A A	27	SKRELIN A L	18	STERIAN P S	128
SHERSHEL' V A	14, 15	SKRYNNIK B K	84	STERZHANOV M I	111, 112
SHERSTOBITOV V YE	34	SKVORTSOV V G	42	STOICHITA C M	72
SHESTAKOV A V	13, 113	SKVORTSOVA YE P	86	STOLL I	118
SHESTOPALOV V P	2	SLIGUSHENKO V P	69	STOLOVICH M M	128
SHISANOV A M	42	SLIVITSKIY A A	31	STOYANOVA I G	111
SHIFRIN K S	69	SHAGINA T V	18	STOYKOV V	52
SHIKANOV A S	125	SHAKOTIN M M	98	STOYLOV YU YU	37
SHIKHALEV E G	117, 119	SHAKOVSKIY YU S	13, 15	STRATAN A	1, 7
SHILEYKA A YU	64	SHAKHOV G D	20	STRAVINSKI L	33
SHILOV K F	4	SHARNITSKIY V S	22	STRELETS V A	77
SHIPLYAK M M	58	SHIRNOV A V	111	STREL'COV G M	53, 56
SHIPOV M V	88	SHIRNOV B M	108	STREL'TSOV A P	11, 20
SHISHKINA L I	34	SHIRNOV V A	20	STRIGALEV V YE	50, 51
SHISHLOV V I	116	SHIRNOV V L	2, 3	STRIGUN V L	71
SHKEDOV I M	53	SHIRNOV V M	31	STRIZNEVSKIY V L	25, 39
SHKUNOV V V	70	SHIRNOV V S	90	STROKAN M B	94
SHLITERIS E P	59	SHIRNOV V Y	45	STUDENIKIN M I	90
SHMAL'KO A V	18	SHIRNOVA L D	45	STYSIN V YE	31
SHMAONOV T A	33	SHIROV I YU	113	SUBBOTIN L K	115
SHMARTSEV YU V	58	SIBOLEV M N	108, 109	SUBBOTIN V I	30
SHMATIN S G	104	SIBOLEV S S	38	SUCNKOV V A	90
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SHMELEV G M	116	SIBORONIAN S B	114	SUDARKIN A M	59, 60
SHMIT O A	89, 93	SIBOLOV A V	74	SUKHANOV V B	8
SHMULEVICH I A	92	SIBOLOV B M	83	SUKHAREVA L K	28
SHORIN A N	28	SIBOLOV I A	1	SUKHAREVA M A	71
SHOTOV A P	88	SIBOLOV I M	111	SUKHORUKOV A P	38, 56
SHPILEVOY B N	4	SIBOLOV S YU	26	SULEYMANOVA SH S	48
SHPII'RAYN E E	115	SIBOLOVA M E	91	SULTANOV M A	109
SHPOL'SKIY M R	18	SOLDATIN M P	1	SUNERIN V V	18
SHTARKOV A L	118	SOLDATOV A N	53	SURAN G G	68
SHTERNIN L A	69	SOLIN V G	8	SURDUTOVICH G I	21
SHTYNGOL'TS Z I	45, 113	SOLODOV V M	5	SURKIN R I	103
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			84	SURKOV G A	108

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SUSHCHINSKIY M M	103	TROFINOV O YE	60	VEDENOV A A	109
SUSLOV YU F	30	TROKHAN A M	59	VELCULESCU V G	12, 21, 45
SUTORIKHIN I A	70	TROKHINCHUK P P	111	VELICHANSKIY V L	5
SUTYRIN A O	30	TROKHIN A S	111	VELICHKO O A	114
SVAKHIN A S	48	TSAUNZAYL' P		VELIKANOV S D	23
SVERDLOV L M	103	(SEE ZAUMSEIL P)		VELIKHOV YE P	20
SVESHNIKOV YU M	97	TSISULYA A S	62, 63	VELIKOTSKIY V L	85
SVESHNIKOVA YE B	103	TSIDULKO I M	6	VEL'T I D	85
SVET V D	68	TSIPILEV V P	69	VENBER T M	67
SVIRINA L P	26	TSITOVICH V A	116	VENEDIKTOV V YU	60
SVIRKO YU P	34	TSIYESLER V		VENGRINOVICH V L	114
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SYNEK J	79	TSUKERNAN V G	64	VERGUNOVA G A	117
SYRUS V P	74	TSVETKOV A D	33	VERTENNYI V P	94
SYSOYEV V K	16, 100	TSVETKOVA S M	31	VETELINO J F	103
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TACHAYEV G V	23	TVOROGOV S D	38, 61	VINOGRADOVA T A	29
TADZHI-AGLAYEV KH G	100	TYUTYUNNIKOV V I	108	VISHNYAUSKAS YU B	28
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TAIROV S M	112	U		VITRICHENKO E A	85
TAKTAKISHVILI M I	65	UDOYEV YU P	50	VITRIKHOVSKIY M I	48
TAL'ROZE V L	24	UDREA E	12, 45	VLAD V	1
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TARANENKO V B	85	UKHANOV YU I	104	VODOP'YANOV K L	89
TARARAKSINA O G	108	UKHINA YE V	98	VODOVATOV I A	38, 86
TARASOV S K	85	UKHOV V V	83	VODZINSKIY A I	86
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TELEZHKO V M	78	UMAROV H	98	VOLKOV V V	47
TEMCHENKO V S	63, 79	UMAROV V S	95	VOLODINA Z S	47
TEODORESCU V	111	URLIN V D	23	VOLYAK K I	36
TEPLITSKIY E SH	7	URSU I	3	VOLYNKIN V M	28
TEPLOVA R K	65	UTENKOV V K	53	VOROB'YEV L YE	94
TERTYKH V A	29	UYAROVA M V	118	VOROB'YEV S A	88
TETERIS YA A	93			VOROB'YEV V G	68
TEVEROVSKIY V I	59	V		VOROB'YEV V I	129
TIEBEL R	61	VAKAR A G	90	VOROB'YEV V P	86
TIKHOMIROV S V	31	VAKS YE D	1	VOROB'YEV V V	52
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TINERGALIYEV R SH	96	VAKRIN V K	104	VORONIN YE M	63, 79
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TINOFEYEV V A	11	VARNAYSKIY O P	26	VORZENKO V L	11
TINOFEYEVA T V	67	VASIL'CHENKO G M	94	VOSKRESENKAYA M S	47
TINUS C	77	VASIL'CHENKO R V	122	VOSTRIKOV A A	20
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TITOV A M	74	VASILYAK L M	116	VYSOTSKIY M G	38, 86
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TOKER G R	107	VASIL'YEV M V	60	WALLIS G	119
TOKUNOV YU M	116	VASIL'YEV V P	129	WALTHER M G	83
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TOLPAREV R G	80	VASIL'YEVA M A	74	WORLITZER K	61
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TOMILIN M G	87	VAYILOVA L S	97	YAKINOVICH A P	68
TOMIN V I	102	VAYTEKURAS F K	28	YAKOVLEV B S	71
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TOROPOV A K	72	VDOVIN V G	94	YAKOVLEV V A	31, 86
TOTH ZS	40	VDOVINA M A	94	YAKOVLEV V P	6
TRAKHTENBERGTS V YU	45				

YAKOVLEVA T V	60	ZAKHAROVA I S	41
YAKUBOVA M A	91	ZAKHIDOV E A	96
YAKUNIN V A	29	ZANADYOROV N P	34
YAKUSHEV A K	115	ZAPOROZHCHENKO R G	41
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YANUSHEVSKIY M I	48	ZARGAR'YANTS M N	5
YARASHYUNAS K	94	ZASAVITSKIY I I	4
YARENKO A M	95, 96	ZATSHAN I R	86
YASEN' A I	1	ZAUMSEIL P	117
YASHIN V YE	33	ZAVOROTNYY S I	24
YASHINA A M	39	ZAYTSEV D F	32
YASHUKOV V P	13	ZAYTSEV S I	86
YASINSKIY V M	72	ZAYTSEV S V	47
YASTREBKOV A B	17, 69	ZAYTSEV-ZOTOV S V	114
YATSENKO N A	23	ZAYTSEVA L A	86
YATSKEVICH G M	108	ZEL'DOVICH B YA	35
YAVICH B S	5	ZELENINA L I	65
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YEEREMENKO A S	8	ZEMLYANSKIY V M	86, 87
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YEFREMOV N A	89	ZEMSKOV K I	87
YEFREMOV N M	19	ZHARIKOV YE V	2
YEGOROV A S	70	ZHAROV V P	32
YEGOROV E A	65	ZHEKOV V I	3, 90
YEGOROV K D	57	ZHEREBSTOV A S	114
YEGOROV V N	84	ZHERU I I	45
YEGOROV YU A	16, 43	ZHIL'TSOV V I	28
YELFINOV O V	74	ZHINSKAYA N V	31
YELIGULASHVILI I A	65	ZHITNYUK B A	2
YELISEYEV A A	54	ZHIVOPISTSEV I S	77
YELISEYEV P G	6	ZHIZHIN G M	103
YELYUTIN P V	132	ZHOVTANETSKIY O I	87
YENAKI N A	89	ZHUNAKULOV U	96
YENAKIY V N	40	ZHVAVYY S P	58
YEPIKHIN A M	1	ZIBROV A S	5
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YERMILOV A A	63	ZIETEK J	33
YERMILOV V I	16	ZINAKOV V P	13
YERMOLAYEV V L	67	ZINOV'YEVA G A	30, 111
YERMOLAYEV V S	39	ZNAHENSKIY N V	36
YEROKHIN A A	119	ZOLOTAREVSKIY V I	92
YEROKHIN N S	37	ZOLOTAYKIN A V	72
YESINA G N	106	ZOLOT'KO A S	38
YEVDOKIMENKO YU I	42	ZOLOTOV YE M	89
YEVDOKIMOV A A	100	ZOREV N M	119
YEVIN O A	19	ZUBAREV I G	37
YEZHOV A A	107	ZUBAREV V YE	76
YUAKOVLEV V V	83	ZUGRAY M	1, 35
YUNOVICH A E	88	ZUYEV V S	37
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YURKIN YE K	5	ZVEREV G F	32
YURLOV YU I	64	ZVEREV G M	2
YURYSHEV N N	23	ZVERKOV M V	4, 25
YUZHAKOV A N	115	ZVYAGINA O N	47
		ZYAT'KOV I P	104
		ZYUBRIK A I	87
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