AD-A126 620 BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS NUMBER 57 1/2
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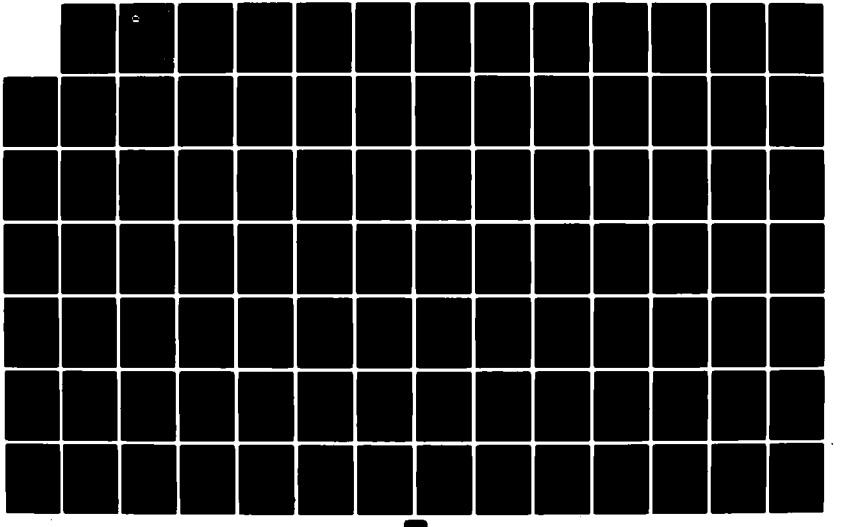

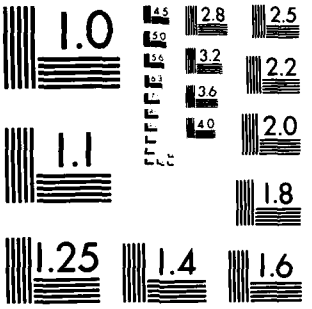

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BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 57

JANUARY - FEBRUARY 1982

Date of Report

March 2, 1983

Vice Director for Foreign Intelligence
Defense Intelligence Agency

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DST-2700Z-003-83	2. GOVT ACCESSION NO. AD-A126	3. RECIPIENT'S CATALOG NUMBER 620
4. TITLE (and Subtitle) BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS, No. 57 JANUARY - FEBRUARY 1982		5. TYPE OF REPORT & PERIOD COVERED 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Defense Intelligence Agency Directorate for Scientific and Technical Intelligence, ATTN: DT-5A		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE March 2, 1983 13. NUMBER OF PAGES 154
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. Distribution Statement (of the abstract entered in Block 20, if different from report)

18. Supplementary Notes

19. KEY WORDS

Solid State Lasers, Liquid Lasers, Gas Lasers, Chemical Lasers, Laser Components, Nonlinear Optics, Spectroscopy of Laser Materials, Ultrashort Pulse Generation, Laser Crystal Growing, Free Electron Lasers, Laser Theory, Laser Biological Effects, Laser Communications, Laser Beam Propagation, Laser Computer Technology, Holography, Laser Chemical Effects, Laser Parameters, Laser Measurement Applications, Laser-Excited Optical Effects, Laser Spectroscopy, Laser Beam-Target Interaction, Laser Plasma

20. ABSTRACT

This is the Soviet Laser Bibliography for January-February 1982, and is No. 57 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; 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 1982, 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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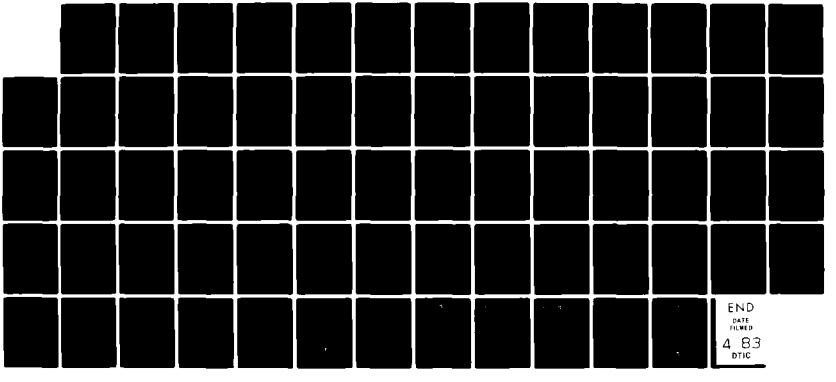

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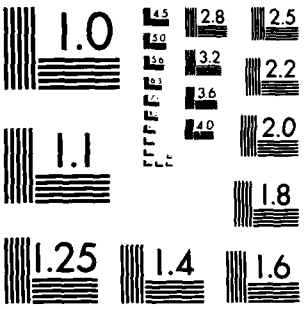

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J. BEAM-TARGET INTERACTION

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IV. SOURCE ABBREVIATIONS

	(CIRC Codens)	
APC	(APYCA)	Acta physica et chemica. Szeged
APH	(APAHA)	Acta physica Academiae scientiarum hungaricae
APP	(APTLB)	Acta physica polonica
BAPS	(BAPTA)	Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques
BIPG	(BIPED)	Buletinul Institutului politehnic "Gheorge Gheorghiu-Dej". Seria electrotehnica. Bucuresti
BWAT	(BWATA)	Biuletyn Wojskowej akademii technicznej J. Dabrowskiego
CCF	(CKCFA)	Ceskoslovensky casopis pro fyziku
CJP	(CZYPA)	Czechoslovak Journal of Physics
DAN Arm	(DANAA)	Akademiya nauk Armyanskoy SSR. Doklady
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSSR. Doklady
DAN Uz	(DANUA)	Akademiya nauk Uzbekskoy SSR. Doklady
DR	(DERUB)	Deponirovannyye rukopisi
EOM	(EOBMA)	Elektronnaya obrabotka materialov
ETP	(EXPPA)	Experimentelle Technik der Physik
FAiO	(IFAOA)	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	(FGVZA)	Fizika goreniya i vzryva
FiKhOM	(FKOMA)	Fizika i khimiya obrabotki materialov
FiKhS	(FKSTD)	Fizika i khimiya stekla
FM	(FNMKA)	Finommechanika, mikrotechnika [Hungary]
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Est	(ETFMB)	Akademiya nauk Estonskoy SSR. Izvetsiya. Fizika, matematika

IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya Seriya fizicheskaya
IAN M	(IZFMB)	Akademiya nauk Moldavskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk
IAN Uz	(IUZFA)	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
I-FZh	(INFZA)	Inzhenerno-fizicheskiy zhurnal
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Prioborostroyeniye
IVUZ Radioelektr	(IVUZB)	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
JMO	(JMKOA)	Jemna mechanika a optika
JS	(-----)	Journal Signalaufzeichnungsmaterialen
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHVKA)	Khimiya vysokikh energiy
KL	(KNLTA)	Knizhnaya letopis'
KLDVAD	(-----)	Knizhnaya letopis'. Dopolnitel'nyy vypusk. Avtoreferaty dissertatsii
Kristal	(KRISA)	Kristallografiya
KSpF	(KRSFA)	Kratkiye soobshcheniya po fizike
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
PSS	(PSSAB) (PSSBB)	Physica Status Solidi (A). Applied Research (B). Basic Research
PSU	(PRSUB)	Pribory i sistemy upravleniya
PTE	(PRTEA)	Pribory i tekhnika eksperimenta

RiE	(RAELA)	Radiotekhnika i elektronika
RRP	(RRPZA)	Revue roumaine de physique
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeod	(RZGAB)	Referativnyy zhurnal. Geodeziya i aeros"yemka
RZhRadiot	(RZRAB)	Referativnyy zhurnal Radiotekhnika
Sb1	Sbornik	Vsesoyuznyy simpozium po rasprostraneniyu lazernogo izlucheniya v atmosfere. 6th. Tezisy dokladov. Part 2. Institut optiki atmosfery SOAN. Tomsk, 1981.
Sb2		Neravnovesnyye protsessy v odno- i dvukhfaznykh sistemakh. Institut teplofiziki SOAN. Sbornik nauchnykh trudov. Novosibirsk, 1981.
Sb3		Sbornik nauchnykh trudov vuzov Litovskoy SSR. Radioelektronika, no. 3, 1981.
Sb4		Metrologiya v radioelektronike. Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya. 5th. 22-24 Sep 1981. Tezisy dokladov. VNII Fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy. Moskva, 1981.
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Sb6		Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya: Metrologicheskiye problemy mikroelektroniki. Tezisy dokladov. Moskva, 1981.
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Sb8		Priyemniki prostranstvenno-vremennykh signalov na fone pomekh. Voronezh, 1981.
Sb9		Novyye elementy i metody rascheta informatsionnykh sistem. Moskva, 1980.
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Sb30		Voprosy kvantovoy teorii atomov i molekul, no. 2, Leningrad, 1981.
Sb31		Nauka i chelovechestvo, 1981. Moskva, 1981.
SCF	(SCEFA)	Studii si cercetari de fizica
TiEKh	(TEKHA)	Teoreticheskaya i eksperimental'naya khimiya
TKiT	(TKTEA)	Tekhnika kino i televedeniya
Tr1	Trudy	Tbiliskiy universitet. Trudy, no. 216, 1980.
Tr2		Kiyevskiy politekhnicheskiy institut. Vestnik. Radioelektronika, no. 18, 1981.
Tr3		Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 282, 1981.
Tr4		Moskovskiy energeticheskiy institut. Trudy, no. 519, 1981.
Tr5		Moskovskiy energeticheskiy institut. Trudy, no. 522, 1981.
Tr6		Institut prikladnoy geofiziki. Trudy, no. 41, 1982.
Tr7		Kazanskiy pedagogicheskiy institut. Uchenyye zapiski, no. 202, 1980.
Tr8		Radiotekhnicheskiy institut AN SSSR. Trudy, no. 40, 1980.
Tr9		Moskovskoye vyssheye tekhnicheskoye uchilishche. Trudy, no. 362, 1981.
Tr10		Moskovskiy energeticheskiy institut. Trudy, no. 535, 1981.
Tr11		Fizicheskiy institut AN SSSR. Trudy, no. 134, 1982.
TVT	(TVYTA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Fizika, astronomiya
ZhETF	(ZETFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	(ZFKHA)	Zhurnal fizicheskoy khimii
ZhNiPFiK	(ZNPFA)	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
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
ZhVMMF	(ZVMFA)	Zhurnal vychislitel'noy matematiki i matematicheskoy 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, Leningrad (Fiziko-tekhnicheskiy institut im Ioffe).
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).
10. Institute of Semiconductor Physics, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov Sibirskogo otdeleniya AN SSSR).
11. Kazan' State University (Kazanskiy GU).
12. Leningrad State University (Leningradskiy GU).
13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografii AN SSSR).
14. University of Friendship Among Nations im Lumumba, Moscow (Universitet druzhby narodov im Lumumby).
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 of Problems of Mechanics, AN SSSR, Moscow (Institut problem mekhaniki AN SSSR).
18. Institute of General and Inorganic Chemistry im Kurnakov, AN SSSR, Moscow (Institut obshchey i neorganicheskoy khimii im Kurnakova AN SSSR).
19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).
21. Acoustics Institute, AN SSSR, Moscow (Akusticheskiy institut AN SSSR).
23. Institute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).
24. Moscow Higher Technical College im Bauman (Moskovskoye vysshcye 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).
36. Physicotechnical Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR).
38. Kazan' Physicotechnical Institute (Kazanskiy fiziko-tekhnicheskiy institut).
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).

44. Institute of Applied Physics, AN MSSR, Kishinev (Institut prikladnoy fiziki AN MSSR).
45. Saratov State University (Saratovskiy GU).
49. Vilnius State University (Vil'nyusskiy GU).
51. Kiev State University (Kiyevskiy GU).
52. Joint Institute of Nuclear Research, Dubna (Ob"yedinennyy institut yadernykh issledovaniy).
60. Institute of Physics, AN AzSSR (Institut fiziki AN AzSSR).
67. Institute of Physics of Chemistry, AN SSSR (Institut khimicheskoy fiziki AN SSSR).
72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).
73. Institute of Theoretical Physics im Landau, AN SSSR (Institut teoreticheskoy fiziki im Landau 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).
76. Institute of Hydrodynamics, Siberian Branch, AN SSSR (Institut gidrodinamiki 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).
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).
94. Gor'kiy State University (Gor'kovskiy GU).
98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom GU).
106. Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut).
108. Khar'kov Polytechnic Institute (Khar'kovskiy politekhnicheskiy institut).
110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut).
114. L'vov State University (L'vovskiy GU).
118. Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhnicheskiy institut).
119. Moscow Institute of Electronic Engineering (Moskovskiy institut elektronnoy tekhniki).
122. Scientific Research Institute of Physicochemistry im Karpov (NI fiziko-khimicheskiy institut im Karpova).
128. Ryazan' Radiotechnical Institute (Ryazanskiy radiotekhnicheskiy institut).
132. Tomsk State University (Tomskiy GU).
136. Uzhgorod State University (Uzhgorodskiy GU).
137. Voronezh State University (Voronezhskiy GU).
140. All Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements (VNII fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy).
141. All Union Scientific Research Institute of Optophysical Measurements (VNII optiko-fizicheskikh izmereniy).
146. Yerevan Physics Institute (Yerevanskiy fizicheskiy institut).
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).
166. Riga Polytechnic Institute (Rizhskiy politekhnicheskiy institut).
167. Institute of Petrochemical Synthesis im Topchiyev, AN SSSR, Moscow (Institut neftekhimicheskogo sinteza im Topchiyeva AN SSSR).
174. Scientific Research Institute of Organic Intermediates and Dyestuffs, Moscow (NII organicheskikh poluproduktov i krasiteley).
176. Moscow Geological Prospecting Institut im Ordzhonikidze (Moskovskiy geologorazvedochnyy institut im Ordzhonikidze).
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).
188. All Union Scientific Research Institute of Single Crystals, Scintillation Materials and Extra Pure Chemical Substances, Khar'kov (VNII monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv).
193. Institute of Theoretical and Applied Mechanics, Siberian Branch, AN SSSR, Novosibirsk (Institut teoreticheskoy i prikladnoy mekhaniki SOAN).
196. Institute of Organic Chemistry im Zelinskiy, AN SSSR (Institut organicheskoy khimii im Zelinskogo AN SSSR).
200. Khar'kov Aviation Institute (Khar'kovskiy aviatsionyy institut).
201. Institute for Problems of Information Transmission, AN SSSR, Moscow (Institut problem peredachi informatsii AN SSSR).
202. Institute of Electronics, AN UzSSR, Tashkent (Institut elektroniki AN UzSSR).
210. Institute of Physics, Siberian Branch, AN SSSR (Institut fiziki SOAN).
214. Kazan' Pedagogical Institute (Kazanskiy pedagogicheskiy institut).
232. State Scientific Research Institute of Glass (Gos NII stekla).
238. Institute of High Pressure Physics, AN SSSR (Institut fiziki vysokikh davleniy AN SSSR).
243. Radio Engineering Institute, AN SSSR (Radiotekhnicheskiy institut AN SSSR).
248. Institute of Mechanics at Moscow State University (Institut mekhaniki pri Moskovskom GU).
251. Tomsk Institute of Automatic Control Systems and Radioelectronics (Tomskiy institut avtomatizirovannykh sistem upravleniya i radioelektroniki).
252. Leningrad Institute of Nuclear Physics, AN SSSR (Leningradskiy institut yadernoy fiziki AN SSSR).
256. Far Eastern State University, Vladivostok (Dal'nevostochnyy GU).
262. Physicotechnical Institute, AN UzSSR (Fiziko-tekhnicheskiy institut AN UzSSR).
264. Institute of Radiophysics and Electronics, AN ArmSSR (Institut radiofiziki i elektroniki AN ArmSSR).
276. Institute of Physics of the Earth im Shmidt, AN SSSR (Institut fiziki Zemli im Shmidta AN SSSR).
283. Institute of Physics of Metals, AN UkrSSR, Kiev (Institut metallofiziki AN UkrSSR).
286. Institute of Biological Physics, AN SSSR, Pushchino (Institut biologicheskoy fiziki AN SSSR).

297. Institute of Chemistry, AN SSSR, Gor'kiy (Institut khimii AN SSSR).
325. Scientific Research Institute of Physics, Rostov-on-Don (NII fiziki, Rostov-na-Donu).
334. Scientific Research Institute of Applied Physical Problems at Belorussian State University (NII prikladnykh fizicheskikh problem pri Belorusskom GU).
336. Scientific Research Institute of Nuclear Physics, Electronics and Automation at Tomsk Polytechinc Institute (NII yadernoy fiziki, elektroniki i avtomatiki pri Tomskom politekhnicheskom institute).
350. Institute of Applied Geophysics, AN SSSR (Institut prikladnoy geofiziki AN SSSR).
355. All Union Correspondence Institute of Mechanical Engineering (Vsesoyuznyy zaochnyy mashinostroitel'nyy institut).
362. Leningrad Pedagogical Institute (Leningradskiy pedagogicheskiy institut).
383. Institute of Physicochemical Bases of Processing Mineral Resources, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya SOAN).
396. "Optika" Special Design Bureau for Scientific Instrument Manufacture, Siberian Branch, AN SSSR (Spetsial'noye konstruktorskoye byuro nauchnogo priborostroyeniya "Optika" SOAN).
421. Institute of Physics of Metals, Ural Scientific Center, AN SSSR, Sverdlovsk (Institut fiziki metallov Ural'skogo nauchnogo tsentra AN SSSR).
426. Institute of Applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).
435. Simferopol State University (Simferopol'skiy GU).
440. Moscow Automobile Plant im Likhachev (Moskovskiy avtomobil'nyy zavod im Likhacheva).
441. Scientific Research Institute of Physics of Leningrad State University (NII fiziki Leningradskogo GU).
445. All Union Scientific Research Instutute of the Metrological Service, Moscow (VNII metrologicheskoy sluzhby).
510. Pacific Oceanographic Institute. Far East Scientific Center, AN SSSR (Tikhookeanskiy okeanologicheskiy institut. Dal'nevostochnyy nauchnyy tsentr AN SSSR).
512. Institute of General and Inorganic Chemistry, AN UkrSSR, Kiev (Institut obshchey i neorganicheskoy khimii AN UkrSSR).
521. Scientific Research Institute for Physics of Condensed Media of Yerevan State University (NII fiziki kondensirovannykh sred Yerevanskogo GU).
581. Zaporozh'ye Industrial Institute (Zaporozhskiy industrial'nyy institut).
585. Scientific Research Institute of Solid State Physics of the Latvian State University (NII fiziki tverdogo tela Latviyskogo GU).
596. Saratov Medical Institute (Saratovskiy meditsinskiy institut).
614. Scientific Research Center for Industrial Lasers, AN SSSR, Troitsk (NI tsentr po tekhnologicheskim lazeram AN SSSR)
632. Institute of Physical Chemistry im Pisarzhevskiy, AN UkrSSR (Institut fizicheskoy khimii im Pisarzhevskogo AN UkrSSR).
634. Institute of Chemistry and Chemical Engineering, Siberian Branch, AN SSSR (Institut khimii i khimicheskoy tekhnologii SOAN).
653. Polar Geophysical Institute AN SSSR, Apatity (Polyarnyy geofizicheskiy institut AN SSSR).
664. Moscow Scientific Research Institute of Eye Microsurgery, Ministry of Health, RSFSR (Moskovskiy NII mikrokhirurgii glaza MZ RSFSR).
665. Institute of Genetics and Selection, AN AzSSR, Baku (Institut genetiki i selektsii AN AzSSR).

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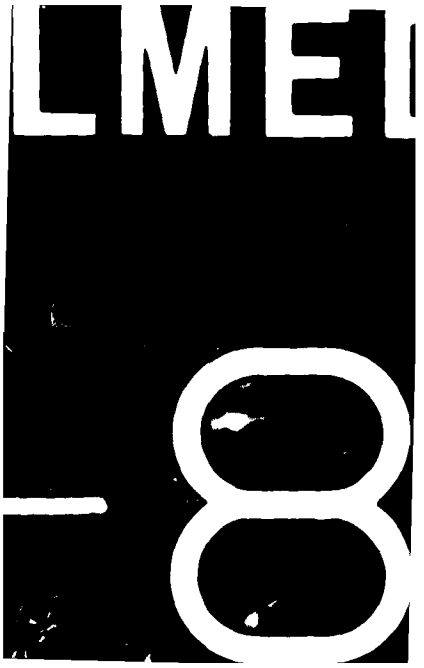
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