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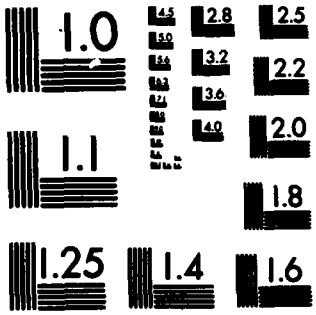

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No. 54

JULY - AUGUST 1981

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October 18, 1982

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20. ABSTRACT

This is the Soviet Laser Bibliography for July-August 1981, and is No. 54 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; 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 July-August 1981, 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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H. LASER MEASUREMENT APPLICATIONS

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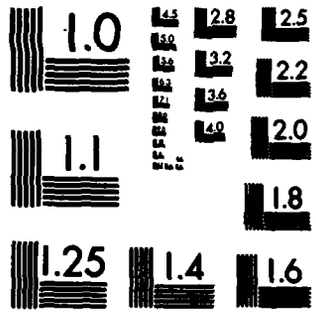

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IV. SOURCE ABBREVIATIONS

	(CIRC Codens)	
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
DBAN	(CRABA)	Bulgarska akademiya na naukite. Doklady
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
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN B	(VABFA)	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Est	(ETFMB)	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika, matematika
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Lat	(LZFTA)	Akademiya nauk Latviyskiy SSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk
IAN Uz	(IUZFA)	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
I-FZh	(INFZA)	Inzhenerno-fizicheskiy zhurnal
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye

IVUZ Radioelektr	(IVUZB)	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHVKA)	Khimiya vysokikh energiy
KL	(KNLTA)	Knizhnaya letopis'
Kristal	(KRISA)	Kristallografiya
KSpF	(KRSFA)	Kratkiye soobshcheniya po fizike
Lit fiz sb	(LFSBA)	Litovskiy fizicheskiy sbornik
MZhiG	(IMZGA)	Akademiya nauk SSSR. Izvestiya. Mekhaniki zhidkosti i gaza
NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Opt app	(OPAPB)	Optica applicata [Poland]
Otkr izobr	(OIPOB)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PSS	(PSSBB)	Physica Status Solidi (B). Basic Research
PSU	(PRSUB)	Pribory i sistemy upravleniya
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RAWZMuM	(-----)	Reporte der Akademie der Wissenschaften der DDR. Zentralinstitut für Mathematik und Mechanik
RiE	(RAELA)	Radiotekhnika i elektronika
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(RZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sbl	Sbornik	VNII monokristallov, stsintillyassionnykh materialov i osobo chistykh khimicheskikh veshchestv. Sbornik nauchnykh trudov. 1980.

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Sb20 Nauchnyye informatsii, no. 48. Astronomicheskiy sovet AN SSSR. Moskva, 1981.

Sb21 Prikladnyye metody fizicheskikh izmereniy. Tikhookeanskiy okeanologicheskiy institut Dal'nevostochnogo nauchnogo tsentra AN SSSR. Vladivostok, 1981.

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Sb23 Fiziko-tekhnologicheskiye osnovy integral'nykh elementov EVM. Institut kibernetiki AN UkrSSR. Kiyev, 1981.

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Sb41		Fizika zhidkogo sostoyaniya, no. 8, Kiyev, 1980.
Sb42		Avtomaticheskaya svarka, no. 4, 1981.
SCF	(SCEFA)	Studii si cercetari de fizica
TiEKh	(TEKHA)	Teoreticheskaya i eksperimental'naya khimiya
TKiT	(TKTEA)	Tekhnika kino i televedeniya
Tr1	Trudy	Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 277, 1980.
Tr2		Moskovskiy energeticheskiy institut. Trudy, no. 463, 1980.
Tr3		Institut eksperimental'noy meteorologii. Trudy, no. 10/84, 1981.
Tr4		VNI kinofotoinstitut. Trudy, no. 102, 1980.
Tr5		Nikolayevskiy korablestroitel'skiy institut. Trudy, no. 162, 1980.
Tr6		Moskovskiy energeticheskiy institut. Trudy, no. 512, 1981.
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
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

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NS. Non-Soviet
0. Affiliation not given
1. Physics Institute imeni Lebedev, AN SSSR, Moscow (Fizicheskiy institut imeni Lebedeva AN SSSR).
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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).
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10. Institute of Semiconductor Physics, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov Sibirskogo otdeleniya AN SSSR).
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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).
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).
29. Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut).
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67. Institute of Physics of Chemistry, AN SSSR (Institut khimicheskoy fiziki AN SSSR).
71. Institute of Applied Mathematics, AN SSSR (Institut prikladnoy matematiki AN SSSR).
72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).
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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).
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).
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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 elektrotekhnicheskiy institut).
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120. Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography (Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii).
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129. Siberian State Scientific Research Institute of Metrology (Sibirskiy gos NII metrologii).
133. Central Aerohydrodynamic Institute im Zhukovskiy (Tsentral'nyy aerogidrodinamicheskiy institut im Zhukovskogo).
136. Uzhgorod State University (Uzhgorodskiy GU).
141. All Union Scientific Research Institute of Optophysical Measurements (VNII optiko-fizicheskikh izmereniy).
150. Dnepropetrovsk State University (Dnepropetrovskiy GU).
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161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhnika, elektroniki i avtomatiki).

163. All Union Scientific Research Institute of Metrology im Mendeleyev (VNII metrologii im Mendeleyeva).
180. Institute of Heat and Mass Exchange, AN BSSR (Institut teplo- i massoobmena AN BSSR).
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220. Institute of Experimental Meteorology (Institut eksperimental'noy meteorologii).
231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut).
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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).
255. Tallinn Polytechnic Institute (Tallinskiy politekhnicheskiy institut).
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287. Institute of Physical Chemistry, AN SSSR (Institut fizicheskoy khimii AN SSSR).
299. Institute of Electronics, AN BSSR (Institut elektroniki AN BSSR).
307. Institute of Thermophysics and Electrophysics, AN EstSSR (Institut termofiziki i elektrofiziki AN EstSSR).
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381. Institute of Hygiene im Erisman (Institut gigiyeny im Erismana).
405. Institute of Hydromechanics, AN UkrSSR (Institut gidromekhaniki AN UkrSSR).
417. All Union Scientific Research Institute of Eye Diseases (VNII glaznykh bolezney).
421 Institute of Physics of Metals, Ural Scientific Center, AN SSSR, Sverdlovsk (Institut fiziki metallov Ural'skogo nauchnogo tsentra AN SSSR).

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).
448. Central Design Bureau with Trial Production, AN BSSR (Tsentral'noye konstruktorskoye byuro s opytnym proizvodstvom AN BSSR).
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464. Nizhniy Tagil State Pedagogical Institute (Nizhniy Tagil'skiy gos ped institut).
466. Institute of High-Current Electronics, Siberian Branch AN SSSR, Tomsk (Institut sil'notochnoy elektroniki SOAN).
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494. Vladimir Polytechnic Institute (Vladimirskiy politekhnicheskiy institut).
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636. Moscow Regional Clinical Scientific Research Institute (Moskovskiy oblastnoy NI klinicheskiy institut).
637. Kiev Institute for Advanced Traning of Doctors (Kiyevskiy institut usovershenstvovaniya vrachey).
638. Special Design and Technical Bureau with Trial Production of the Institute of Physics, AN BSSR (Spetsial'noye konstruktorsko-tekhnologicheskoye byuro s opytnym proizvodstvom Instituta fiziki AN BSSR).
639. Institute of Astrophysics and Physics of the Atmosphere, AN EstSSR, Tallin (Institut astrofiziki i fiziki atmosfery AN EstSSR).

642. Institute of Geotechnical Mechanics, AN UkrSSR, Dnepropetrovsk (Institut geotekhnicheskoy mekhaniki AN UkrSSR).
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644. Central Scientific Research Institute of Reflexotherapy (Tsentral'nyy NII refleksoterapii).
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