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20. ABSTRACT

This is the Soviet Laser Bibliography for March-April 1980, and is No. 46 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 March-April 1980, 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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J. BEAM-TARGET INTERACTION

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III. MONOGRAPHS, BOOKS, CONFERENCE PROCEEDINGS

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IV. SOURCE ABBREVIATIONS

(CIRC Codens)

DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSSR. Doklady
DAN Ukr	(DUKAB)	Akademiya nauk Ukrayins'koyi RSR. Dopovidi. Seriya A. Fizyko-matematychni ta tekhnichni nauky
Elek	(EKNTB)	Elektronika [Poland]
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 obrabotka materialov
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
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 fizicheskiya
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
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 zavedeniy. Radiofizika

JTP	(JTPHD)	Journal of Technical Physics [Poland]
KE	(KVEKA)	Kvantovaya elektronika
KiK	(KNKTA)	Kinetika i kataliz
KL	(KNLTA)	Knizhnaya letopis'
KLDV	(KLDVA)	Knizhnaya letopis'. Dopolnitel'nyy vypusk
Kristal	(KRISA)	Kristallografiya
Lit fiz sb	(LFSBA)	Litovskiy fizicheskiy sbornik
MiTOM	(MTOMA)	Metallovedeniye i termicheskaya obrabotka materialov
MZhiG	(IMZGA)	Akademiya nauk SSSR. Izvestiya. Mekhanika 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	(OIPOV)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PSS	(PSSAB) (PSSBB)	Physica Status Solidi (A). Applied Research Physica Status Solidi (B). Basic Research
PSU	(PRSUB)	Pribory i sistemy upravleniya
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
RRP	(RRPQA)	Revue roumaine de physique
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(GZGFA)	Referativnyy zhurnal. Geofizika
GZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1	Sbornik	Yerevanskiy politekhnicheskiy institut. Mezhvuznyy sbornik nauchnykh trudov. Radiotekhnika i elektronika, no. 3, 1978.
Sb2		Problemy sovremennoy optiki i spektroskopii. Institut fiziki AN BSSR. Minsk, Nauka i tekhnika, 1979.

Sb3 Lazernyye sistemy. Novosibirsk, Nauka, 1980.

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Sb5 Teoreticheskoye issledovaniye protsessov v gazodinamicheskikh lazerakh. Moskva, 1979.

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Sb8 Izucheniye gidrodinamicheskoy neustroychivosti chislennymi metodami. Institut prikladnoy matematiki AN SSSR. Moskva, 1978.

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Sb14 Apparatura i metodiki distantsionnogo zondirovaniya parametrov atmosfery. Institut optiki atmosfery SOAN, Novosibirsk, Nauka, 1980.

Sb15 Rasseyaniye sveta v zemnoy atmosfery. Alma-Ata, Nauka, 1980.

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Sb21		Teoriya avtomatizirovannogo proyektirovaniya, no. 1, Khar'kov, 1979.
Sb22		Vsesoyuznaya konferentsiya po metody fotouprugosti. 8th. Tallin, 1979, Materialy, v. 3. Tallin, 1979.
Sb23		Polucheniye i svoystva tonkikh plenok. Kiyev, 1979.
Sb24		Zimnaya shkola LIYaF [Leningradskiy institut yadernoy fiziki]. 14th. Materialy. Fizika atomnogo yadra. Leningrad, 1979.
Sb25		Elektronnyye i ionnyye protsessy v tverdykh telakh, no. 10. Radiatsionno-termicheskiye izmeneniya struktury kristallicheskoy reshetki. Tbilisi, Metsniyereba, 1979.
Sb26		Khimiya tverdogo tela, no. 3, Sverdlovsk, 1979.
Sb27		Fizika elektroniki, no. 19, L'vov, 1979.
Sb28		Voprosy atomnoy nauki i tekhniki. Termoyadernyy sintez, no. 2/4, Moskva, 1979.
SCF	(SCEFA)	Studii si cercetari de fizica
TKiT	(TKTEA)	Tekhnika kino i televedeniya
Tr1	Trudy	Moskovskiy energeticheskiy institut. Trudy, no. 429, 1979.
Tr2		Leningradskiy politekhnicheskiy institut. Trudy, no. 366, 1979.
Tr3		VNI kinofotoinstitut. Trudy, no. 98, 1979.
Tr4		Fizicheskiy institut AN SSSR. Trudy, no. 125, 1980.
Tr5		Moskovskiy fiziko-tekhnicheskiy institut. Trudy, no. 11, 1979.
Tr6		Severo-Kavkazskiy nauchnyy tsentr vysshey shkoly. Izvestiya. Yestestvennyye nauki, no. 4, 1979.
Tr7		Moskovskiy energeticheskiy isstitut. Trudy, no. 426, 1979.
Tr8		Moskovskiy energeticheskiy isntitut. Trudy, no. 401, 1979.
Tr9		Trudy uchebnykh institutov svyazi. Vychislitel'naya tekhnika v sistemakh svyazi. Leningrad, 1979.
Tr10		Moskovskoye vyssheye tekhnicheskoye uchilishche. Trudy, no. 305, 1979.
Tr11		Glavnaya geofizicheskaya observatoriya. Trudy, no. 419, 1980.
Tr12		Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 247, 1979.

Tr13		Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 245, 1979.
Tr14		VNII fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy. Trudy, no. 40/70, 1979.
Tr15		TsNII geodezii, aeros"yemki i kartografii. Trudy, no. 221, 1979.
Tr16		Radiotekhnicheskiy institut AN SSSR. Trudy, no. 33, 1978.
TVT	(TVTYA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
VBU	(VBMFA)	Belorusskiy universitet. Vestnik. Seriya 1. Matematika, fizika, mekhanika
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Fizika, astronomiya
ZhETF	(ZEIFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhNiPFiK	(ZNPFA)	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
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-Sov t
0. Affiliation not given
1. Physics Institute imeni Lebedev, AN SSSR (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 fiziki AN UkrSSR).
7. State Optical Institute im Vavilov, Leningrad (Gos 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).
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).
34. Khar'kov State University (Khar'kovskiy GU).
36. Physicotechnical Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR).
37. Yerevan State University (Yerevanskiy GU).
38. Kazan' Physicotechnical Institute (Kazanskiy fiziko-tekhnicheskiy institut).
44. Institute of Applied Physics, AN MSSR, Kishinev (Institut prikladnoy fiziki AN MSSR).
47. Siberian Physicotechnical Institute im Kuznetsov, Tomsk (Sibirskiy fiziko-tekhnicheskiy institut im Kuznetsova).
49. Vilnius State University (Vil'nyusskiy GU).
50. Institute of Semiconductor Physics, AN LitSSR, Vilnius (Institut fiziki poluprovodnikov AN LitSSR).
51. Kiev State University (Kiyevskiy GU).
53. Chernovtsy State University (Chernovitskiy GU).
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).
68. Institute of Space Research, AN SSSR (Institut kosmicheskikh issledovaniy 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 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).
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).
82. Physicotechnical Institute, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut 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).
86. Azerbaydzhan State University (Azerbaydzhanskiy GU).
87. Belorussian State University (Belorusskiy GU).
97. Georgian Polytechnic Institute (Gruzinskiy politekhnicheskiy institut).
98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom GU).
99. Institute of Mechanics and Physics, Saratov (Institut mekhaniki i fiziki).
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).
116. Moscow Aviation Institute (Moskovskiy aviatsionnyy institut).
118. Moscow Physicotechnical Institute (Moskovskiy institut elektronnoy tekhniki).
120. Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography (Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii).
122. Scientific Research Institute of Physicochemistry im Karpov (NI khimiko-fizicheskiy institut im Karpova).
124. Odessa Scientific Research Institute of Eye Diseases and Tissue Therapy (Odesskiy NII glaznykh bolezney i tkanevoy terapii).
134. Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya).
136. Uzhgorod State University (Uzhgorodskiy 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 Opticophysical Measurements (VNII optiko-fizicheskikh izmereniy).
144. All Union Scientific Research Institute of Television and Radio Broadcasting (VNII televideniya i radioveshchaniya).
152. Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov).

159. Institute of Thermophysics, Siberian Branch, AN SSSR, Novosibirsk (Institut teplofiziki SOAN).
160. Scientific Research Institute of Hydrometeorological Instrument Manufacture (NII gidrometeorologicheskogo priborostroyeniya).
161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhniki, elektroniki i avtomatiki).
174. Scientific Research Institute of Organic Intermediates and Dyestuffs, Moscow (NII organicheskikh poluproduktov i krasiteley).
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).
196. Institute of Organic Chemistry im Zelinskiy, AN SSSR (Institut organicheskoy khimii im Zelinskogo AN SSSR).
197. Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).
206. Institute of Geology and Geophysics, Siberian Branch, AN SSSR, Novosibirsk (Institut geologii i geofiziki SOAN).
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).
218. Second Moscow State Medical Institute im Pirogov (Vtoroy Moskovskiy meditsinskiy institut im Pirogova).
231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut).
232. State Scientific Research Institute of Glass (Gos NII stekla).
243. Radio Engineering Institute, AN SSSR (Radiotekhnicheskiy institut AN SSSR).
247. Scientific Research Institute of Electrophysical Equipment im Yefremov, Leningrad (NII elektrofizicheskoy apparatury im Yefremova).
252. Leningrad Institute of Nuclear Physics, AN SSSR (Leningradskiy institut yadernoy fiziki AN SSSR).
254. Moscow Civil Engineering Institute (Moskovskiy inzhenerno-stroitel'skiy institut).
263. Astrophysical Institute, AN KazSSR (Astrofizicheskiy institut AN KazSSR).
278. Samarkand State University (Samarkandskiy GU).
282. Scientific Research Institute of Physics, Odessa (NII fiziki, Odessa).
283. Institute of Physics of Metals, AN UkrSSR, Kiev (Institut metallofiziki AN UkrSSR).
285. Institute of Problems of Control (Institut problem upravleniya).
289. Central Scientific Research Institute of Geodesy, Aerial Surveying and Cartography (Tsentral'nyy NII geodezii, aeros"yemki i kartografii).
304. Institute of Organic Chemistry, AN UkrSSR, Kiev (Institut organicheskoy khimii AN UkrSSR).
313. Scientific Research Institute of Applied Physics at Irkutsk State University (NII prikladnoy fiziki pri Irkutskom GU).
323. Leningrad Institute of Motion Picture Engineers (Leningradskiy institut kinoinzhenerov).
325. Scientific Research Institute of Physics, Rostov-on-Don (NII fiziki, Rostov-na-Donu).
341. All Union Scientific Research Institute of Heat Engineering in Metallurgy, Sverdlovsk (VNII metallurgicheskoy teplotekhniki).
343. North Caucasus Scientific Center of Higher Education (Severo-Kavkazskiy nauchnyy tsentr vysshey shkoly).
379. Gomel' State University (Gomel'skiy GU).
401. Khabarovsk Polytechnic Institute (Khabarovskiy politekhnicheskiy institut).

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).
440. Moscow Autmobile Plant im Likhachev (Moskovskiy avtomobil'nyy zavod im Likhacheva).
445. All Union Scientific Research Institute of the Metrological Service, Moscow (VNII metrologicheskoy sluzhby).
453. All Union Scientific Research Institute of Nuclear Geophysics and Geochemistry (VNII yadernoy geofiziki i geokhimii).
457. Institute of Geophysics, AN UkrSSR, Kiev (Institut geofiziki AN UkrSSR).
466. Institute of High-Current Electronics, Siberian Branch, AN SSSR, Tomsk (Institut sil'notochnoy elektroniki SOAN).
492. Institut of Physics, AN EstSSR (Institut fiziki AN EstSSR).
502. Institute of Photosynthesis, AN SSSR (Institut fotosinteza AN SSSR).
511. Institute of Applied Problems in Mechanics and Mathematics AN UkrSSR, L'vov (Institut prikladnykh problem mekhaniki i matematiki AN UKrSSR).
521. Scientific Research Institute for Physics of Condensed Media, Yerevan State University (NII fiziki kondensirovannykh sred Yerevanskogo GU).
525. Ternopol' Branch of the L'vov Polytechnic Institute (Ternopol'skiy filial L'vovskogo politekhnicheskogo instituta).
532. Mordovian State University, Saransk (Mordovskiy GU).
536. Tyumen Industrial Institute (Tyumenskiy industrial'nyy institut).
537. Tyumen State Medical Institute (Tyumenskiy gos meditsinskiy institut).
538. Moscow Institute of the National Economy (Moskovskiy institut narodnogo khozyaystva).
543. Institute of Physics, AN UzSSR (Institut fiziki AN UzSSR).
544. Irkutsk State University (Irkutskiy GU).
545. Physics-Power Institute, Obninsk (Fiziko-energeticheskiy institut).

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