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No. 94

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20. ABSTRACT

This is the Soviet Laser Bibliography for March-April 1988, and is No. 94 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 systems; 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 March - April 1988, 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 Soviet Reference Journals (journals of abstracts) are also included. Laser items from the popular or semipopular press are generally omitted. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry 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.

Since our computer is not now able to print between lines, superscripts and subscripts are indicated by (sup) and (sub).

We are producing the entire bibliography on computer. To make our bibliography compatible with other data bases, for source abbreviations, we use the letter codens generally used in our own government rather than transliterations of abbreviations used in the Soviet Union. Likewise, we use letter codens to designate affiliations. The authors' affiliations are indicated in parentheses after the authors' names in the text. Empty parentheses indicate that the affiliation was not given. A source abbreviations list, authors' affiliations list, and author index are included in the back of the bibliography.

Due to funding constraints this is the last issue that will be published of the "Bibliography of Laser Developments".

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h. InGaAsP

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## IV. SOURCE ABBREVIATIONS

(Note: CTC = cover-to-cover translation available)

| | |
|---|---|
| AKZHA | Akusticheskiy zhurnal (CTC) |
| AVMEB | Avtometriya (CTC) |
| CLaSSMol | Seminar: Lazernaya spektroskopiya slozhnykh molekul. (IFANEst) |
| CVKRRadi | Vsesoyuznaya konferentsiya po rasprostraneniya radiovoln |
| CVKTPPri | Vsesoyuznaya konferentsiya: Troynyye poluprovodniki i ikh primeneniye |
| CVSOpTom | Vsesoyuznyy seminar po opticheskoy tomografii |
| DANKA | Akademiya nauk SSSR. Doklady (CTC) |
| EKVZA | Elektrosvyaz' (CTC) |
| EOBMA | Elektronnaya obrabotka materialov (CTC) |
| FGVZA | Fizika goreniya i vzryva (CTC) |
| FKOMA | Fizika i khimiya obrabotki materialov |
| FKSTD | Fizika i khimiya stekla (CTC) |
| FTPPA | Fizika i tekhnika poluprovodnikov (CTC) |
| FTVTA | Fizika tverdogo tela (CTC) |
| IAAFA | Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika |
| IAFMA | Akademiya nauk Azerbaydzhanskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk |
| IAFZA | Akademiya nauk SSSR. Izvestiya. Fizika zemli (CTC) |

| | |
|---|---|
| IANFA | Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya (CTC) |
| IASKA | Akademiya nauk SSSR. Izvestiya. Seriya khimicheskaya (CTC) |
| ITUFA | Akademiya nauk Turkmenskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk |
| IUZFA | Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk |
| IVNMA | Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy (CTC) |
| IVUBA | Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye (CTC) |
| IVUFA | Izvestiya vysshikh uchebnykh zavedeniy. Fizika (CTC) |
| IVUOA | Izvestiya vysshikh uchebnykh zavedeniy. Gornyy zhurnal |
| IVYRA | Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika (CTC) |
| IZTEA | Izmeritel'naya tekhnika (CTC) |
| KHFID | Khimicheskaya fizika (CTC) |
| KRSFA | Kratkiye soobshcheniye po fizike (CTC) |
| KVEKA | Kvantovaya elektronika (journal, Moskva) (CTC) |
| LFSBA | Litovskiy fizicheskiy sbornik (CTC) |
| MTOMA | Metallovedeniye i termicheskaya obrabotka materialov (CTC) |
| OPMPA | Optiko-mekhanicheskaya promyshlennost' (CTC) |
| OPSPA | Optika i spektroskopiya (CTC) |
| PPCNB | Problemy prochnosti (CTC) |
| PRSUB | Pribory i sistemy upravleniya (CTC) |
| PRTEA | Pribory i tekhnika eksperimenta (CTC) |

| | |
|---|---|
| PZTFD | Zhurnal tekhnicheskoy fiziki. Pis'ma (CTC) |
| RAELA | Radiotekhnika i elektronika (journal, Moskva) (CTC) |
| RŻGFA | Referativnyy zhurnal. Geofizika |
| SAKNA | Akademiya nauk Gruzhinskoy SSR. Soobshcheniye |
| STALA | Stal' |
| TKTEA | Tekhnika kino i televideniya |
| UFIZA | Ukrainskiy fizicheskiy zhurnal (Russian language version) (CTC) |
| VEOFA | Vestnik oftal'mologii |
| VMUFA | Moskovskiy universitet. Vestnik. Fizika, astronomiya (CTC) |
| ZAKHA | Zhurnal analiticheskoy khimii (CTC) |
| ZETFA | Zhurnal eksperimental'noy i teoreticheskoy fiziki (CTC) |
| ZFPRA | Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma (CTC) |
| ZNPFA | Zhurnal nauchnoy i prikladnoy fotografii i kinematografii (CTC) |
| ZPMFA | Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki (CTC) |
| ZPSBA | Zhurnal prikladnoy spektroskopii (CTC) |
| ZTEFA | Zhurnal tekhnicheskoy fiziki (CTC) |

## V. AUTHOR AFFILIATIONS

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BGPI
Birskiy gosudarstvennyy pedagogicheskiy institut
Birsk State Pedagogical Institute
BGU
Belorusskiy gosudarstvennyy universitet
Belorussian State University, Minsk
ChGU
Chernovitskiy gosudarstvennyy universitet
Chernovitsy State University
DGI
Dnepropetrovskiy gornyy institut imeni Artema
Dnepropetrovsk Mining Institute imeni Artem
FIAN
Fizicheskiy institute imeni Lebedeva AN SSSR
Physics Institute imeni Lebedev, Academy of Sciences USSR
FIANKuy
Kuybyshevskiy filial Fizicheskogo instituta AN SSSR
Kuybyshev Branch of the Physics Institute, Academy of Sciences USSR
FTI
Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR
Physicotechnical Institute imeni Ioffe, Academy of Sciences USSR
FTIANTadzh
Fiziko-tekhnicheskiy institut AN TadzhSSR
Physicotechnical Institute, Academy of Sciences Tadzhik SSR, Dushanbe
FTINT
Fiziko-tekhnicheskiy institut nizhkikh temperatur AN Ukr SSR
Physicotechnical Institute of Low Temperature Physics, Academy of Sciences Ukrainian SSR, Kharkov
GEOKhI
Institut geokhimii i analiticheskoy khimii imeni Vernadskogo AN SSSR
Institute of Geochemistry and analytical Chemistry im Vernadskiy, Academy of Sciences USSR

GGU
Gor'kovskiy gosudarstvennyy universitet
Gor'kiy State University
GKhIRD
Gidrokhimicheskiy institut
Hydrochemical Institute, Rostov-na-Donu
GOI
Gosudarstvennyy opticheskiy institut imeni Vavilova
State Optical Institute imeni Vavilov, Leningrad
GOIN
Gosudarstvennyy okeanograficheskiy institut
State Oceanographic Institute
GrodGU
Grodnenskiy gosudarstvennyy universitet
Grodno State University
GrozNI
Groznenskiy neftyanoy institut
Groznyy Petroleum Institute
IAE
Institut atomnoy energii imeni Kurchatova
Institute of Atomic Energy im Kurchatov, Moscow
IAESOAN
Institut avtomatiki i elektrometrii SOAN
Institute of Automation and Electronic Measurements, Siberian Branch Academy of Sciences USSR
IAP
Institut analiticheskogo priborostroyeniya AN SSSR
Institute of Analytical Instrument Manufacture, Academy of Sciences USSR
IBFiz
Institut biologicheskoy fiziki AN SSSR
Institute of Biological Physics, Academy of Sciences USSR, Pushchino
IBSOAN
Institut biofiziki AN SOAN
Institute of Biophysics, Academy of Sciences Siberian Branch
IEANBel
Institut elektroniki AN BSSR
Institute of Electronics, Academy of Sciences Belorussian SSR, Minsk
IEKMMinzdravEst
Institut eksperimental'noy i klinicheskoy meditsiny Ministerstvo zdravookhraneniya EstSSR
Institute of Experimental and Clinical Medicine, Ministry of Health, Estonian SSR
IEM
Institut eksperimental'noy meteorologii
Institute of Experimental Meteorology, Obninsk

IFANAz
Institut fiziki AN AzSSR
Institute of Physics, Academy of Sciences Azerbaydzhan SSR

IFANB
Institut fiziki AN BSSR
Institute of Physics, Academy of Sciences Belorussian SSR

IFANBMO
Mogilevskiy filial instituta fiziki AN BSSR
Mogilev Branch of the nstitute of Physics, Academy of Sciences Belorussian SSR

IFANDag
Institut fiziki Dagestanskogo filiala AN SSSR
Institute of Physics, Dagestan Branch Academy of Sciences USSR, Makhachkala

IFANEst
Institut fiziki AN Est SSR
Institute of Physics, Academy of Sciences Estonian SSR

IFANG
Institut fiziki AN GruzSSR
Institute of Physics, Academy of Sciences Georgian SSR, Tbilisi

IFANLi
Institut fiziki AN LitSSR
Institute of Physics, Academy of Sciences Lithuanian SSR

IFANUk
Institut fiziki AN UkrSSR
Institute of Physics, Academy of Sciences Ukrainian SSR, Kiev

IFBioANBelSSR
Institut fotobiologii AN BSSR
Institute of Photobiology, Academy of Sciences Belorussian SSR, Minsk

IFI
Institut fizicheskikh issledovaniy AN ArmSSR
Institute of Physical Research, Academy of Sciences Armenian SSR

IFM
Institut fiziki metallov Ural'skogo nauchnogo tsentra AN SSSR
Institute of Physics of Metals, Ural Scientific Center, Academy of Sciences, Sverdlovsk

IFP
Institut fizicheskikh problem AN SSSR
Institute of Problems of Physics, Academy of Sciences USSR

IFPSOAN
Institut fiziki poluprovodnikov SOAN
Institute of Semiconductor Physics, Siberian Branch Academy of Sciences USSR, Novosibirsk

IFPV
Institut fiziki poluprovodnikov AN Lit SSR
Institute of Semiconductor Physics, Academy of Sciences Lithuanian SSR, Vilnius

IFRIGANUk
Institut fiziologii rasteniy i genetiki AN UkrSSR
Institute of Plant Physiology and Genetics, Academy of Sciences Ukrainian SSR, Kiyev (formerly IFRANUk)

IFSOAN
Institut fiziki SOAN
Institute of Physics, Siberian Branch Academy of Sciences USSR, Krasnoyarsk

IFTT
Institut fiziki tverdogo tela AN SSSR
Institute of Solid State Physics, Academy of Sciences USSR, Chernogolovka

IFTTP
Institut fiziki tverdogo tela i poluprovodnikov AN BSSR
Institute of Solid State and Semiconductor Physics, Academy of Sciences Belorussian SSR, Minsk

IGiG
Institut geologii i geofiziki imeni 60-letiya SSSR AN SSSR
Institute of Geology and Geophysics imeni 60th Anniversary of the USSR, Academy of Sciences USSR

IKANAz
Institut kibernetiki AN AzSSR
Institute of Cybernetics, Academy of Sciences Azerbaydzhan SSR

IKEs
Institut kibernetiki AN EstSSR
Institute of Cybernetics, Academy of Sciences Estonian SSR

IKGr
Institut kibernetiki AN GruzSSR
Institute of Cybernetics, Academy of Sciences Georgian SSR

IKhAN
Institut khimii AN SSSR
Institute of Chemistry, Academy of Sciences USSR, Gor'kiy

IKhBFANEs
Institut khimicheskoy i biologicheskoy fiziki AN EstSSR
Institute of Chemical and Biological Physics, Academy of Sciences Estonian SSR

IKhKG
Institute khimicheskoy kinetiki i goreniya SOAN
Institute of Chemical Kinetics and Combustion, Siberian Branch Academy of Sciences USSR, Novosibirsk

IKhNPS
Institut khimii nefti i prirodnykh soley AN KazSSR
Institut of Petroleum Chemistry and Mineral Salts, Academy of Sciences Kazakh SSR, Gur'yev

IMF
Institut metallofiziki AN UkrSSR
Institute of Physics of Metals, Academy of Sciences Ukrainian SSR

IMSS
Institut mekhaniki sploshnykh sred Ural'skogo nauchnogo tsentra AN SSSR
Institute of Continuum Mechanics, Ural Science Center, Academy of Sciences USSR, Perm'

INOZ
Institut ozerovedeniya AN SSSR
Institute of Limnology, Academy of Sciences USSR, Leningrad

IOA
Institut optiki atmosfery SOAN
Institute of Atmospheric Optics, Siberian Branch Academy of Sciences USSR

IOF
Institut obshchey fiziki AN SSSR
Institute of General Physics, Academy of Sciences USSR, Moscow

IOFKh
Institut organicheskoy i fizicheskoy khimii Kazanskogo filiala AN SSSR
Institute of Organic and Physical Chemistry, Kazan' Branch, Academy of Sciences USSR

IPANUk
Institut poluprovodnikov AN UkrSSR
Institute of Semiconductyors, Academy of Sciences Ukrainian SSR, Kiev

IPF
Institut prikladnoy fiziki AN SSSR
Institute of lApplied Physics, Academy of Sciences USSR, Gor'kiy

IPFANM
Institut prikladnoy fiziki AN MSSR
Institute of Applied Physics, Academy of Sciences Moldavian lSSR, Kishinev

IPM
Institut prikladnoy matematiki AN SSSR
Institute of Applied Mathematics, Academy of Sciences USSR

IPMe
Institut problem mekhaniki
Institute of Problems of Mechanics, Academy of Sciences USSR, Moscow

IPochF
Institut pochvovedeniya i fotosinteza AN SSSR, Pushchino, Moskovskaya oblast'
Institute of Soil Science and Photosynthesis, Academy of Sciences USSR, Pushchino, Moscow Oblast

IPPMM
Institut prikladnykh problem mekhaniki i matematiki AN UkrSSR
Institute of Applied Problems in Mechanics and Mathematics, Academy of Sciences Ukrainian SSR, L'vov

IPTMOM
Institut problem tekhnologii mikroelektroniki i osobochistykh materialov AN SSSR
Institute for Problems of the Technology of Microelectronics and Extra Pure Materials, Academy of Sciences USSR, Chernogolovka

IRE
Institut radiotekhniki i elektroniki AN SSSR
Institute of Radioengineering and Electronics, Academy of Sciences, Moscow

ISAN
Institut spektroskopii AN SSSR
Institute of Spectroscopy, Academy of Sciences USSR

ISE
Institut sil'notochnoy elektroniki SOAN
Institute of Hich-Current Electronics, Siberian Branch Academy of Sciences USSR, Tomsk

ITeFUk
Institut teoreticheskoy fiziki AN UkrSSR
Institute of Theoretical Physics, Academy of Sciences Ukrainian SSR, Kiev

ITF
Institut teplofiziki SOAN
Institute of Thermophysics, Siberian Branch Academy of Sciences USSR, Novosibirsk

IVTAN
Institut vysokikh temperatur AN SSSR
Institute of High Temperatures, Academy of Sciences USSR

IYaFANUz
Institut yadernoy fiziki AN UzSSR
Institute of Nuclear Physics, Academy of Sciences Uzbek SSR, Ulugbek

IYaIAN
Institut yadernykh issledovaniy AN SSSR
Instutue of Nuclear Research, Academy of Sciences Ussr, Moscow

KarMK
Karagandinskiy metallurgicheskiy kombinat
Karaganda Metallurgical Plant
KazFTI
Kazanskiy fiziko-tekhnicheskiy institut AN SSSR
Kazan' Physicotekchnical Institute, Academy of Sciences USSR
KGU
Kiyevskiy gosudarstvennyy universitet
Kiev State University
KhII
Khersonskiy industrial'nyy institut
Kherson Industrial Institute
KhGU
Khar'kovskiy gosudarstvennyy institut
Khar'kov State University
KhPI
Khar'kovskiy politekhnicheskiy institut
Khar'kov Polytechnical Institute
KhPISF
Sumskiy filial Khar'kovskogo politekhnicheskogo instituta
Sumy Affiliate of Khar'kov Polytechnical Institute
KPI
Kishinevskiy politekhnicheskiy institut
Kishinev Polytechnical Institute
LEIS
Leningradskiy elektrotekhnicheskiy institut svyazi
Leningrad Electrotechnical Communications Institute
LETI
Leningradskiy elektrotekhnicheskiy institut
Leningrad Electric Engineering Institute
LGPI
Leningradskiy gosudarstvenny pedagogicheskiy institut
Leningrad State Pedagogical Institute
LGU
Leningradskiy gosudarstvennyy universitet
Leningrad State University
LIAP
Leningradskiy institut aviatsionnogo priborostroyeniya
Leningrad Institute of Aviation Instrument Manufacture
LIIAAN
Leningradskiy institut informatiki i avtomatizatsii AN SSSR
Leningrad Institute of Information Science and Automation, Academy of Sciences USSR
LITMO
Leningradskiy institut tochnoy mekhaniki i optiki
Leningrad Institute of Precision Mechanics and Optics

LMI
Pervyy Leningradskiy meditsinskiy institut imeni I.P. Pavlova
First Leningrad Medical Institute imeni I.P. Pavlov

LPI
Leningradskiy politekhnicheskiy institut
Leningrad Polytechnical Institute

LTITsBP
Leningradskiy tekhnologicheskiy institut tsellyulozno-bumazhnoy promyshlennosti
Leningrad Technological Institute of the Wood-Pulp and Paper Industry

MADI
Moskovskiy avtomobil'no-dorozhnyy institut
Moscow Highway Institute

MEI
Moskovskiy energeticheskiy institut
Moscow Power Engineering Institute

MEISF
Smolenskiy filial Moskovskogo energeticheskogo instituta
Smolensk Branch of the Moscow Power Engineering Institute

MGPI
Moskovskiy gosudarstvennyy pedagogicheskiy institut
Moscow State Pedagogical Institute

MGU
Moskovskiy gosudarstvennyy institut
Moscow State University

MIAN
Matematicheskiy institut imeni Steklova AN SSSR
Mathematics Institute imeni Steklov, Academy of Sciences USSR, Moscow

MIET
Moskovskiy institut elektronnoy tekhniki
Moscow Institute of Electronic Engineering

MIFI
Moskovskiy inzhenerno-fizicheskiy institut
Moscow Engineering Physics Institute

MIIT
Moskovskiy institut inzhenerov zheloznodorozhnogo transporta
Moscow Institute of Railroad Transport Engineers

MIREA
Moskovskiy institut radiotekhniki, elektroniki i avtomatiki
Moscow Institute of Radio Engineering, Electronics and Automation

MISIS
Moskovskiy institut stali i splavov
Moscow Institute of Steel and Alloys

MITKhT
Moskovskiy institut tonkoy khimicheskoy tekhnologii
Moscow Institute of Fine Chemical Technology
MNTKMikrokhirurgiya
Mezhotrasleviy nauchno-tekhnicheskiy kompleks "Mikrokhirurgiya glaza"
Interbranch Scientific-Technical Complex for Microsurgery of the Eye (formerly MNIIMG)
MPI
Moskovskiy poligraficheskiy institut
Moscow Printing Institute
MPNILMolBBKh
Mezhfakultet'skaya problemnaya NI laboratoriya molekulyarnoy biuologii i bioorganicheskoy khimii im. A.N. Belozerskogo
Interfaculty Problem-Solving Scientific Research Laboratory for Molecular Biology and Bio-Organic Chemistry imeni A.N. Belozerskiy
MVTU
Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana
Moscow Higher Technical College imeni Bauman
NIFKhI
NI fiziko-khimicheskiy institut im Karpova
Scientific Research Institute of Physicochemistry imeni Karpov
NIIFKhMe
NII fiziko-khimicheskoy meditsiny
Scientific Research Institute of Physical and Chemical Medicine, Moscow
NIIFKS
NII fiziki kondensirovannykh sred Yerevanskogo gosudarstvogo universiteta
Scientific Research Institute of the Physics of Condensed Media of Yerevan State University
NIIFL
NII fiziki pri Leningradskom gos universitete
Scientific Research Institute of Physics at Leningrad State University
NIIMF
NII mekhaniki i fiziki Saratovskogo gosuniversiteta
Scientific Research Institute of Mechanics and Physics at Saratov State University
NIIYaF
NII yadernoy fiziki pri Moskovskom gos universiteta
Scientific Research Institute of Nuclear Physics at Moscow State University
NIIYaFT
NII yadernoy fiziki pri Tomskom politekhnicheskom institute
Scientific Research Institute of Nuclear Physics at Tomsk Polytechnic Institute

NITsTLAN
NI tsentr po tekhnologicheskim lazeram AN SSSR
Scientific Research Center for Industrial Lasers, Academy of Sciences USSR

NTOAN
Nauchno-tekhnicheskoye ob"yedineniye AN SSSR
Scientific and Technical Association, Academy of Sciences USSR

OGU
Odesskiy gosudarstvennyy universitet
Odessa State University

Omskmedinst
Omskiy meditsinskiy institut
Omsk Medical Institute

OTANUz
Otdel teplofiziki AN Uzbekskoy SSR
Department of Thermophysics, Academy of Sciences Uzbek SSR

RGU
Rostovskiy-na-Donu gos universitet
Rostov on Don State University

SFTI
Sibirskiy fiziko-tekhnicheskiy institut im Kuznetsova
Siberian Physicotechnical Institute im Kuznetsov, Tomsk

SKBSAT
Spetsial'noye konstruktorskoye byuro sredstv analiticheskoy tekhniki, Ministerstvo priborostroyeniya, sredstv avtomatizatsii i sistem upravleniya SSSR (Minpribor)
Special Design Office for Analytical Technology Equipment, USSR Ministry of Instrument Making, Automation Equipment, and Control Systems, Uzhgorod

SKTBMSOAN
Spetsial'noye konstruktorsko-tekhnicheskoye byuro monokristallov SOAN SSSR
Special Design and Technological Bureau of Monocrystals, Siberian Branch Academy of Sciences USSR, Novosibirsk

TashGU
Tashkentskiy gosudarstvennyy universitet
Tashkent State University

TbGU
Tbilisskiy gos universitet
Tbilisi State University

TIASUR
Tomskiy institut avtomatizirovannykh sistem upravleniya i radioelektroniki
Tomsk Institute of Automated Control Systems and Radioelectronics

TOI
Tikhookeanskiy okeanologicheskiy institut Dal'nevostochnogo nauchnogo tsentra AN SSSR
Pacific Oceanographic Institute, Far Eastern Science Center, Academy of Sciences USSR, Vladivostok

ToPI
Tomskiy politekhnicheskiy institut
Tomsk Polytechnic Institute
TsKBUP
Tsentral'noye konstruktorskoye byuro unikal'nogo priborostroyeniya AN SSSR
Central Design Office for Unique Instrument Building, Academy of Sciences USSR, Moscow
TsNIISLO
Tsentral'nyy nauchno-issledovatel'skiy institute svyazi, Leningradskoye otdeleniye
Central Scientific Research Institute of Communications, Leningrad Branch
TurkPI
Turkmenskiy politekhnicheskiy institut
Turkmen Polytechnic Institute, Ashkhabad
UzhGU
Uzhgorodskiy gosudarstvennyy institut
Uzhgorod State University
VGI
Vysokogornyy geofizicheskiy institut
High-Altitude Geophysical Institute, Nal'chik
VGNIPIKFP
Vsesoyuznyy gos NI i proyektnyy institut fizikofotograficheskoy promyshlennosti
All-Union State Scientific Research and Planning Institute of the Photographic Chemical Industry, Moscow
VilGU
Vil'nyusskiy gos universitet
Vilnius State University
VilGUNTsLI
Nauchnyy tsentr lazernykh issledovaniy Vil'yusskogo gosudarstvogo universiteta
Scientific Center for Laser Research of Vilnius State University
VIMSA
Vsesoyuznyy NI institut mineral'nogo syrya
All-Union Scientific Research Institute of Mineral Resources, Moscow
VISI
Voronezhskiy inzhenerno-stroitel'nyy institut
Voronezh Engineering Institute
VNIFTRI
VNII fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy
All-Union Scientific Research Institute of Physico-Technical and Radiotechnical Measurements, Moscow
VNIIGBol
VNII glaznykh bolezney
All-Union Scientific Research Institute of Eye Diseases, Moscow

VNIIOFI
VNII optiko-fizicheskikh izmereniy
All-Union Scientific Research Institute of Optophysical Measurements, Moscow
YaPI
Yaroslavskiy politekhnicheskiy institut
Yaroslav Polytechnic Institute
YeGU
Yerevanskiy gos universitet
Yerevan State University
ZILVTUZ
Vyssheye teknicheskoye uchebnoye zavedeniye Moskovskogo avtomobil'nogo zavoda im. I.A. Likhacheva
Higher Technical School at Moscow Automobile Plant imeni I.A. Likhachev

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KOLESNIKOV N I 24
KOLK YU V 53
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MARUNKOV A G 53
MASLOV V A 40
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MATROSOV V N 1
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MATVEYEV A N 56
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MELISHCHUK M V 63
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