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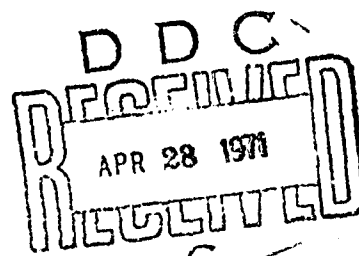
BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

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This bibliography of Soviet publications on lasers covers the period 1969-1970. Approximately 1500 articles are cited. This output is clear evidence of increased attention to advanced advanced development in such areas as holography, beam-target interactions, high-temperature plasma generation and chemical lasers.			

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Introduction

This bibliography has been compiled by the staff of Informatics Tisco, Inc. in response to a continuing contractual assignment to monitor current Soviet-bloc developments in the quantum electronics field. In view of the increasing volume of Soviet publication on this subject, we have decided to limit source coverage primarily to the approximately 30 periodicals which are known to yield the broadest and most advanced information on laser technology. The sheer bulk of data retrieved from the periodic literature alone can be seen to warrant such a limitation. It is our further intent to publish a companion bibliography covering laser developments in recent nonperiodic literature, including irregular serials, monographs, conference proceedings, and the like. In general, input from the popular or semi-popular press has been omitted, since their treatment is usually too broad or trivial to be useful in the present task.

The coverage has been concentrated on the 1969-1970 interval primarily because to the writer's knowledge, no similar effort in comprehensive exploitation of Soviet laser technology has been made during this period; and secondly, because the publication rate of Soviet research and development on lasers has shown a sharp and continuing increase in the last two years. This output is clear evidence of increased attention to advanced developments in such areas as holography, beam-target interactions, high-temperature plasma generation, chemical lasers, and other subjects of current importance in laser research.

For convenience, the entries have been divided into the two main sections of basic research and applications. Within each section they have been further segregated in a manner felt to be most useful to those interested in particular aspects of the state-of-the-art. It will also be noted that a considerable portion of the entries are not specifically identified with lasers; however, such material has been included because of its possible pertinence to laser technology in the broad sense. Examples of such peripheral subjects include experimental and theoretical optics, propagation of optical beams in various media, and detection and measurement of optical signals. Practical applications of lasers as industrial, laboratory or biomedical tools have been included for completeness when found in the cited literature, but no exhaustive attempt has been made to cover the latter subjects, since they are also considered as secondary to the main purpose.

For convenience in retrieval, the bibliographic style used by the Library of Congress has been adhered to where feasible.

Finally, acknowledgement is due to the private consultant effort of Mr. Yuri Ksander, who supplied a substantial number of the bibliographic entries and also is responsible for organizing the material in the detailed manner presented herein.

SOVIET LASER BIBLIOGRAPHY, 1969-1970

TABLE OF CONTENTS

INTRODUCTION	ii
------------------------	----

I. BASIC RESEARCH

A. Solid State Lasers

1. Crystal

a. Ruby	1
b. Transition Ion Activated: Fluorides	7
c. Transition Ion Activated: Tungstates	9
d. Transition Ion Activated: Niobates	10
e. Transition Ion Activated: Miscellaneous	10
f. REAG	10
g. YIG, Yttrium Aluminates.	11
h. Mixed Fluoride, Mixed Yttrifluoride	12

2. Semiconductor: Simple Junction

a. GaAs	13
b. GaP	16
c. GaSe	16
d. InAs	16
e. InSb	16
f. InP	17
g. CdS	17
h. CdSe	17
i. CdTe	18
j. ZnTe	18
k. ZnS	18
l. PbS	18
m. PbSe	19

3. Semiconductor: Mixed Junction

a. $Zn_xCd_{1-x}Se$	19
b. $Zn_xCd_{1-x}Te$	19
c. GaP_xAs_{1-x}	19

4. Semiconductor: Comp Site Junction	
a. $\text{ZnS}_x\text{-CdS}_{1-x}$	19
b. $\text{CdS}_x\text{-CdSe}_{1-x}$	20
5. Semiconductor: Heterojunction	
a. AlAs-GaAs	20
b. $\text{AlGa}_{1-x}\text{As-GaAs}$	20
6. Semiconductor: Bulk Materials	21
7. Semiconductor: Theory	
a. Injection Laser	21
b. Electron-beam Pumped Laser	23
c. Optically-pumped Laser	23
8. Semiconductor: Imaging	26
9. Glass	26
10. Traveling Medium	31
11. Solid State Laser Design	32
B. Liquid Lasers	
1. Dyes	
a. Rhodamine	37
b. Polymethine	38
c. Phthalimide	38
d. Coumarin	39
e. Cyanine	39
f. Other Organic Scintillator Solutions and Luminophors	39
g. General Theory	41
2. Chelates	44
3. Uranyl Compounds	45
4. Acids	
a. $\text{POCl}_3\text{-SnCl}_4\text{:Nd}^{3+}$	45
b. Other	47

C. Gas Lasers	
1. Simple Mixtures	
a. He-Ne	48
b. He-Xe	54
2. Molecular Beam	
a. CO ₂ Mixtures	54
b. Submillimeter: D ₂ O, D ₂ O+D ₂ , D ₂ O+He, H ₂ O, HCN	58
c. Noble Gas	58
d. Atmospheric Air	59
e. Metal Vapor	59
f. Argon, Krypton Ion	60
g. Gasdynamic	62
3. Ring Lasers	63
4. General Theory	67
D. Chemical Lasers	
1. H ₂ +F ₂	71
2. HN ₃ +CO ₂	71
3. H ₂ +Cl ₂	72
4. CO, CO ₂	72
5. Photodissociative	72
6. Miscellaneous	74
E. Hybrid Medium Lasers	75
F. X-Ray Lasers	76
G. Fiber Optics Lasers	77
H. Components and Accessories	
1. Resonators	
a. Design and Performance	78
b. Mode Kinetics	83
2. Mirrors	85
3. Q-Switches	86
4. Pumping Sources	91

5.	Polarizers	93
6.	Deflectors	94
7.	Filters	94
8.	Diffraction Gratings	95
9.	Detectors	95
10.	Heads, etc.	97
11.	Coupling	97
12.	Focusing	97
J.	Nonlinear Optics	
1.	Frequency Conversion	98
2.	Parametric Processes	103
3.	Stimulated Scattering Effects	
a.	Raman	104
b.	Brillouin	109
c.	Entropy	110
d.	Rayleigh	111
e.	Molecular	111
f.	"Concentration"	112
g.	Scattering from Liquid Surfaces	112
h.	Theory	112
4.	Self-Focusing and Self-Trapping	113
5.	Gas Breakdown	116
6.	Birefringence	118
7.	General Theory	119
K.	Spectroscopy of Laser Materials	123
L.	Coherence	128
M.	Ultrashort Pulse Generation	129
N.	Laser Amplifier Systems	131
O.	Crystal Growing	133
P.	General Laser Theory	134

II. LASER APPLICATIONS

A. Astrophysics	138
B. Biomedicine	139
C. Chemistry	141
D. Communications and Environment	
1. Beam Propagation in the Atmosphere	142
2. Beam Propagation in Water	146
3. Systems	147
4. Theory of Scattering, Turbulence and Radiative Transfer	149
E. Computer Technology	154
F. Holography	155
G. Instrumentation and Measurements	
1. Measurement of Laser Parameters	164
2. Laser Standards	165
3. Miscellaneous Measurement Applications	167
H. Materials Processing	
1. Nonlinear Surface Processes	174
2. Beam-Target Interaction Studies	
a. Metals	174
b. Polymers	178
c. Other Dielectrics	179
d. Semiconductors	181
e. Miscellaneous Studies	182
J. Plasma Generation, Heating and Diagnostics	186

III. MAJOR SOURCES REVIEWED	191
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I. BASIC RESEARCH

A. SOLID STATE LASERS

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a. Ruby

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2. Semiconductor: Simple Junction

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3. Semiconductor: Mixed Junction

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b. $Zn_xCd_{1-x}Te$

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c. GaP_xAs_{1-x}

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4. Semiconductor: Composite Junction

a. ZnS_x-CdS_{1-x}

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b. CdS_x-CdSe_{1-x}

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5. Semiconductor: Heterojunction

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B. LIQUID LASERS

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3. Uranyl Compounds

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4. Acids

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D. CHEMICAL LASERS

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J. NONLINEAR OPTICS

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K. SPECTROSCOPY OF LASER MATERIALS

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G. INSTRUMENTATION AND MEASUREMENTS

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III. MAJOR SOURCES REVIEWED

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Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana

Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya

Biofizika

Eksperimental'naya khirurgiya i anesteziologiya

Fizika goreniya i vzryva

Fizika i khimiya obrabotki materialov

Fizika i tekhnika poluprovodnikov

Fizika tverdogo tela

Izvestiya vysshikh uchebnykh zavedeniy. Fizika

Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye

Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika

Izvestiya vysshikh uchebnykh zavedeniy. Radiotekhnika

Geo-magnetizm i aeronomiya

Kinetika i kataliz

Kristallografiya

Mekhanika polimerov

Mekhanika tverdogo tela

Moskovskiy universitet. Vestnik. Seriya III. Fizika, astronomiya

Neorganicheskiye materialy

Oftal'mologicheskiy zhurnal

Optiko-mekhanicheskaya promyshlennost'

Optika i spektroskopiya

Prikladnaya matematika i mekhanika

Pribory i tekhnika eksperimenta

Problemy peredachi informatsii

Radiotekhnika i elektronika

Teplofizika vysokikh temperatur

Ukrainskiy fizicheskiy zhurnal

Uspekhi fizicheskikh nauk

Vestnik oftal'mologii

Zhurnal eksperimental'noy i teoreticheskoy fiziki

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Zhurnal nauchnoy i prikladnoy fotografii i kinematografii

Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki

Zhurnal prikladnoy spektroskopii

Zhurnal tekhnicheskoy fiziki

Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki