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# BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 5

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13. ABSTRACT

This report covers the third quarter of 1971 with the major yield of information coming from the approximately 30 periodicals known to report the most advanced and interesting findings in Soviet laser technology. This as well as the previous four reports covers the following topics: (1) laser research -- solid state, liquid, gas and chemical lasers; UV; components; nonlinear optics; spectroscopy of laser materials; short pulse generation; crystal growing; and general theory; (2) laser applications -- biological effects, communications, computer technology, holography, instrumentation, materials processing, and plasma generation.

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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. Of all material reviewed, the major yield has been from the approximately 30 periodicals which are known to report the most advanced and interesting findings in Soviet laser technology.

The period covered is the third quarter of 1971, and includes all significant laser-related articles received by us during that interval. The structure and selection criteria are basically those used in the preceding reports.

For convenience we generally have abbreviated source names; a source abbreviation list and an author index are included. Unless indicated by a parenthesized Reference Journal (RZh) notation, all cited sources are available at Informatics Tisco, Inc.

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# I. BASIC RESEARCH

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## IV. SOURCE ABBREVIATIONS

| | | |
|---|---|---|
| AiT | - | Avtomatika i telemekhanika |
| APP | - | Acta Physica Polonica |
| DAN ArmSSR | - | Akademiya nauk Armyanskoy SSR. Doklady |
| DAN BSSR | - | Akademiya nauk Belorusskoy SSR. Doklady |
| DAN SSSR | - | Akademiya nauk SSSR. Doklady |
| DAN Uzb | - | Akademiya nauk Uzbekskoy SSR. Doklady |
| Dokl 1 | - | Doklady Yubileynoy nauchno-tekhnicheskoy konferentsii. Fakultet avtomaticheskikh sistem. Tomskiy politekhnicheskiy institut. Tomsk, 1970. |
| FAiO | - | Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana |
| FiKhOM | - | Fizika i khimiya obrabotki materialov |
| FTP | - | Fizika i tekhnika poluprovodnikov |
| FTT | - | Fizika tverdogo tela |
| GiK | - | Geodeziya i kartografiya |
| IAN Arm | - | Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika |
| IAN B | - | Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk |
| IAN Est | - | Akademiya nauk Estonskoy SSR. Izvestiya. Fizika, matematika |

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|---|---|---|
| IAN Fiz | - | Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya |
| IAN Turk | - | Akademiya nauk Turkmenskoy SSR. Izvestiya. Seriya fiziko-teknicheskikh, khimicheskikh i geologicheskikh nauk |
| I-FZh | - | Inzhenerno-fizicheskiy zhurnal |
| ILEI | - | Izvestiya Leningradskogo elektro - tekhnicheskogo instituta |
| IT | - | Izmeritel'naya tekhnika |
| IVUZ Fiz | - | Izvestiya vysshikh uchebnykh zavedeniy. Fizika |
| IVUZ Geod | - | Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka |
| IVUZ Geol | - | Izvestiya vysshikh uchebnykh zavedeniy. Geologiya i razvedka |
| IVUZ Priboro | - | Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye |
| IVUZ Radioelektr | - | Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika |
| IVUZ Radiofiz | - | Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika |
| KhVE | - | Khimiya vysokikh energiy |
| KiK | - | Kinetika i kataliz |
| Kristall | - | Kristallografiya |
| KSpF | - | Kratkiye soobshcheniya po fizike |
| MiTOM | - | Metallovedeniye i termicheskaya obrabotka materialov |

| | | |
|---|---|---|
| NM | - | Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy |
| OiS | - | Optika i spektroskopiya |
| OMP | - | Optiko-mekhanicheskaya promyshlennost' |
| Otkr izobr | - | Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki |
| PF | - | Postepy fizyki |
| PSS | - | Physica Status Solidi |
| PTE | - | Pribory i tekhnika eksperimenta |
| Radiotekh | - | Radiotekhnika |
| RiE | - | Radiotekhnika i elektronika |
| RZhElektr | - | Referativnyy zhurnal. Elektronika i yeye primeneniye |
| RZhF | - | Referativnyy zhurnal. Fizika |
| RZhGeod | - | Referativnyy zhurnal. Geodeziya i aeros"yemka |
| RZhGeofiz | - | Referativnyy zhurnal. Geofizika |
| RZhMetrolog | - | Referativnyy zhurnal. Metrologiya i izmeritel'naya tekhnika |
| RZhRadiot | - | Referativnyy zhurnal. Radiotekhnika |
| Sb 1 | - | Sbornik rabot aspirantov. Tomskiy institut radioelektronnoy i elektronnoy tekhniki |
| Sb 2 | - | Kvantovaya elektronika. Sbornik statey. Moskva, Sovetskoye radio. |
| Sb 3 | - | Eksitony v poluprovodnikakh. Moskva, Izd-vo nauka, 1971. |

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| Sb 4 | - | Sbornik. Peredacha energii v kondensirovannykh sredakh. Yerevan, 1970. |
| Sb 5 | - | Elektronnaya tekhnika. Nauchno-tekhnicheskiy sbornik. Elektronika SVCh. |
| Sb 6 | - | Elektronnaya tekhnika. Nauchno-tekhnicheskiy sbornik. Gazorazryadnyye pribory. |
| Sb 7 | - | Sbornik. Radiofizika i kvantovaya elektronika. Tula, 1971. |
| Sb 8 | - | Sbornik. Issledovaniya po uprugosti i plastichnosti. Leningradskiy universitet, Leningrad |
| Sb 9 | - | Radiotekhnika. Respublikanskiy mezhvedomstvennyy nauchno-tekhnicheskiy sbornik. Khar'kov, Izd-vo Khar'kovskogo universiteta |
| Sb 10 | - | Sbornik. Poluprovodnikovaya elektronika. Uzhgorod, 1971. |
| Sb 11 | - | Puti razvitiya sovremennoy oncologii. Kiyev, Izd-vo zdorov'ya, 1970. |
| Sb 12 | - | Sbornik. Sovremennyye problemy fizicheskoy khimii. Moskva, Izd-vo Moskovskiy universitet. |
| Sb 13 | - | Sbornik. Radioelektronika v narodnom khozyaystve SSSR. Kuybyshev, 1971. |
| Sb 14 | - | Sbornik. Kolebaniya i volny v plasme. Minsk, Izd-vo nauka i tekhnika, 1971. |
| Sb 15 | - | Energoperenos v kanalakh. Minsk, 1970. |
| Sb 16 | - | Sbornik. Radiofizika i mikroelektronika. Voronezh, 1970. |

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| Sb 17 | - | Moskovskiy inzhenerno-fizicheskiy institut. Voprosy teplofiziki yadernykh reaktorov. Moskva, Atomizdat. |
| Sb 18 | - | Sbornik. Proyektirovaniye. Moskva |
| Sb 19 | - | Elektronnaya tekhnika. Nauchno-tekhnicheskiy sbornik. Radiokomponenty. |
| Sb 20 | - | Elektronnaya tekhnika. Nauchno-technicheskiy sbornik. Materialy. |
| Sb 21 | - | Poluprovodnikovaya tekhnika mikroelektronika. Kiyev, Naukova dumka. |
| Sb 22 | - | Sbornik. Kvantovaya elektronika i lazernaya spektroskopiya. Minsk, 1971. |
| TKiT | - | Tekhnika kino i televideniya |
| Tr 1 | - | Trudy Sibirskogo nauchno-issledovatel'skogo instituta metrologii |
| Tr 2 | - | Trudy akusticheskogo instituta. |
| Tr 3 | - | Trudy Gosudarstvennogo opticheskogo instituta |
| Tr 4 | - | Trudy XIII i XIV nauchnoy konferentsii aspirantov i mladshikh nauchnykh sotrudnikov Instituta istorii yestestvoznaniya i tekhniki AN SSSR. Sektsiya istorii tekhniki. Moskva, 1971. |
| Tr 5 | - | Nauchnyye trudy Leningradskogo instituta usovershenstvovaniya vrachey. |
| Tr 6 | - | Trudy Ul'yanovskogo politekhnicheskogo instituta. |
| Tr 7 | - | Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii. Trudy metrologicheskikh institutov SSSR, no. 114(174). Issledovaniya v oblasti opticheskikh izmereniy. Moskva, Izd-vo standartov, 1970. |

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| Tr 8 | - | Trudy nauchno-issledovatel'skogo instituta gidrometeorologicheskogo priborostroyeniya. |
| TVT | - | Teplofizika vysokikh temperatur |
| UFN | - | Uspekhi fizicheskikh nauk |
| UFZh | - | Ukrainskiy fizicheskiy zhurnal |
| VAN | - | Akademiya nauk SSSR. Vestnik |
| VBU | - | Belorusskiy universitet. Vestnik |
| VLU | - | Leningradskiy universitet. Vestnik. Fizika, khimiya |
| VMU | - | Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya |
| ZhETF | - | Zhurnal eksperimental'noy i teoreticheskoy fiziki |
| ZhETF P | - | Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki |
| ZhNiPFiK | - | Zhurnal nauchnoy i prikladnoy fotografii i kinematografii |
| ZhPMTF | - | Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki. |
| ZhPS | - | Zhurnal prikladnoy spektroskopii |
| ZhTF | - | Zhurnal tekhnicheskoy fiziki |

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