

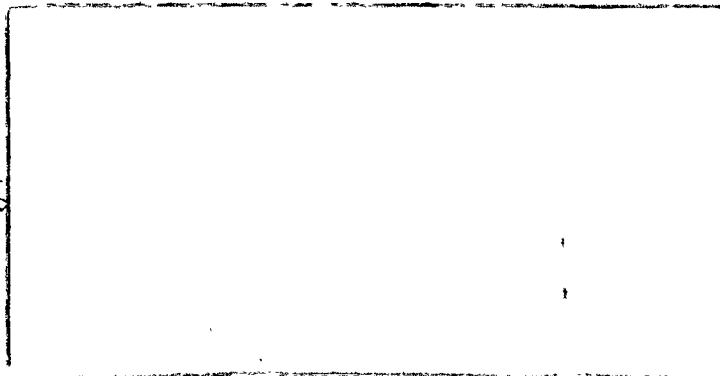
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BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 23, January - March 1976

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This is the Soviet Laser Bibliography for the first quarter of 1976 and is No. 23 in the 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; computer technology; holography; laser-induced chemical reactions; instrumentation and measurements; beam-target interaction; and plasma generation and diagnostics.		

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Introduction

This bibliography has been compiled by the staff of Informatics 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 first quarter of 1976, 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 have abbreviated frequently cited source names; a source abbreviation list and an author index are included. Unless indicated by a parenthesized (RZh, KL) notation, all cited sources are available at Informatics Inc. The numbers in parentheses following the authors' names in the text refer to the Cumulative Affiliations List which includes all author affiliations from 1969 to the present.

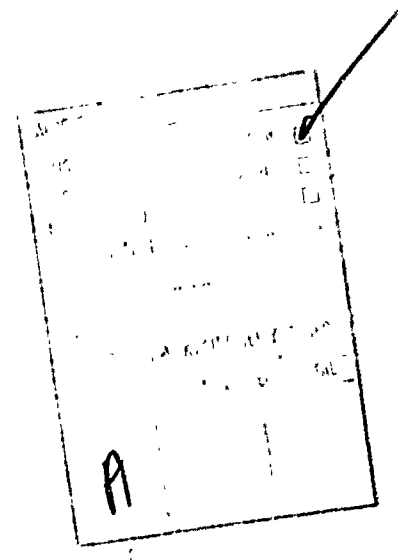


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I. BASIC RESEARCH

A. SOLID STATE LASERS

1. Crystal: Ruby

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D. CHEMICAL LASERS

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IV. SOURCE ABBREVIATIONS

BAPS	-	Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques
DAN Arm	-	Akademiya nauk Armyanskoy SSR. Doklady
DAN SSSR	-	Akademiya nauk SSSR. Doklady
DAN Tadzh	-	Akademiya nauk Tadzhikskoy SSR. Doklady
DAN Ukr	-	Akademiya nauk Ukrayins'koyi RSR. Dopovidi
DBAN	-	Bulgarska akademiya na naukite. Doklady
EOM	-	Elektronnaya obrabotka materialov
FAiO	-	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	-	Fizika gorenija i vzryva
FiKhOM	-	Fizika i khimiya obrabotka materialov
FTP	-	Fizika i tekhnika poluprovodnikov
FTT	-	Fizika tverdogo tela
IAN B	-	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IT	-	Izmeritel'naya tekhnika
IVUZ Fiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Geol	-	Izvestiya vysshikh uchebnykh zavedeniy. Geologiya i razvedka
IVUZ Mash	-	Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye
IVUZ Priboro	-	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr	-	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
KE	-	Kvantovaya elektronika
KhVE	-	Khimiya vysokikh energiy
KL	-	Knizhnaya letopis'
KLDV	-	Knizhnaya letopis'. Dopolnitel'nyy vypusk

KSpF	-	Kratkiye soobshcheniya po fizike
LC	-	Received at Library of Congress
LZhS	-	Letopis' zhurnal'nykh statey
NM	-	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	-	Optika i spektroskopiya
OMP	-	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	-	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PTE	-	Pribory i tekhnika eksperimenta
RiE	-	Radiotekhnika i elektronika
RZhF	-	Referativnyy zhurnal. Fizika
RZhFoto	-	Referativnyy zhurnal. Fotokinotekhnika
RZhGeofiz	-	Referativnyy zhurnal. Geofizika
RZhKh	-	Referativnyy zhurnal. Khimiya
RZhMekh	-	Referativnyy zhurnal. Mekhanika
RZhMetal	-	Referativnyy zhurnal. Metallurgiya
RZhRadiot	-	Referativnyy zhurnal. Radiotekhnika
Sb1	-	Sbornik. Kvantovaya i fizicheskaya elektronika. Minsk, 1975.
Sb2	-	Vsesoyuznaya konferentsiya "Lazery na osnove slozhnykh organicheskikh soyedineniy," 1975. Materialy. Minsk, 1975.
Sb3	-	Monokrystally i tekhnika, no. 12, Khar'kov, 1975.
Sb4	-	Spektroskopiya kristallov. Moskva, Nauka, 1975.
Sb5	-	Regional'naya shkola-seminar po funktsional'noy mikroelektronike. Ist. Tezisy. Gor'kiy, 1975.
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- Sb21 - Svoystva veshchestv i stroyeniye molekul, no. 2, Kalinin, 1975.
- Sb22 - Problemy fiziki optiki i metrologii. Moskva, 1975.
- Sb23 - Morskiye gidrofizicheskiye issledovaniya, no. 1(68), Sevastopol', 1975.
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| Tr5 | - | Tsentral'nyy aerogidrodinamicheskiy institut. Ucheniyye zapiski, v. 6, no. 3, 1975. |
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Tr11	-	Nauchno-issledovatel'skiy fiziko-khimicheskoy institut. Sbornik nauchnykh trudov, no. 6, 1975.
Tr12	-	Moskovskiy fiziko-tekhnicheskoy institut. Trudy. Seriya Obshchestvennaya i molekulyarnaya fizika, no. 7, 1975.
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Tr22	-	Tsentral'nyy nauchno-issledovatel'skiy institut svyazi. Sbornik nauchnykh trudov, no. 1, 1975.
Tr23	-	Moskovskiy energeticheskoy institut. Trudy, no. 261, 1975.
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TVT	-	Teplofizika vysokikh temperatur
UFN	-	Uspekhi fizicheskikh nauk
UFZh	-	Ukrainskiy fizicheskiy zhurnal
ZhETF	-	Zhurnal eksperimental'noy i teoreticheskoy fiziki.
ZhETF P	-	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	-	Zhurnal fizicheskoy khimii
ZhNiPfiK	-	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhPMTF	-	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	-	Zhurnal prikladnoy fiziki
ZhTF	-	Zhurnal tekhnicheskoy fiziki
ZhTF P	-	Pis'ma v Zhurnal tekhnicheskoy fiziki

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4. Leningrad Physical-technical Institute im. Ioffe (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).
7. State Optical Institute im. Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im. Vavilova).
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12. Leningrad State University (Leningradskiy gos. universitet).
13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografiya, AN SSSR).
14. University of Friendship Among Nations im. Lumumba, Moscow (Universitet druzhby narodov im. Lumumby).
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16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
17. Institute of Mechanical Problems, 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 (Vsesoyuznyy nauchno-issled. institut fiziko-tekhnicheskikh i elektronnykh izmereniy).
21. Acoustics Institute, AN SSSR, Moscow (Akusticheskiy institut, AN SSSR).
22. Institute of metallurgy im. Baykov, Moscow (Institut metallurgii im. Baykova).
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24. Moscow Higher Technical College im. Bauman (Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana).
25. Moscow Scientific Research Institute of Instrument Manufacture (Moskovskiy nauchno-issled. institut instrumental'nogo proizvodstva).
26. Central Scientific Research Institute of the Ministry of Defense, Moscow (Tsentral'nyy nauchno-issled. institut Ministerstva oborony).
27. All Union Scientific Research Institute of Textile and Light Machinery, Moscow (VNII tekstil'nogo i legkogo mashinostroyeniya).
28. Leningrad Opticomechanical Society (Leningradskoye optiko-mekhanicheskoye obshchestvo).
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30. Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).
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36. Physicotechnical Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskii institut nizkikh temperatur AN UkrSSR).
37. Yerevan State University (Yerevanskii gos. universitet).
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61. Institute of Physics and Astronomy, AN EstSSR (Institut fiziki i astronomii AN EstSSR).
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64. Institute of Atmospheric Physics, AN SSSR (Institut fiziki atmosfery AN SSSR).
65. Institute of Problems of Physics, AN SSSR (Institut fizicheskikh problem AN SSSR).
66. Institute of Solid State Physics, AN SSSR (Institut fiziki tverdogo tela 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).
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77. Institute of Inorganic Chemistry, Siberian Branch AN SSSR (Institut neorganicheskoy khimii SOAN).
78. Institute of Atmospheric Optics, Siberian Branch AN SSSR (Institut optiki atmosfery SOAN).
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100. Institute of Oncology im. Petrov (Institut onkologii im. Petrova).
101. Ivanovo State Medical Institute (Ivanovskiy gos. meditsinskiy institut).
102. Ivanovo Chemicotechnological Institute (Ivanovskiy khimiko-tekhnologicheskii institut).
103. Ivanovo Pedagogical Institute (Ivanovskiy pedagogicheskii institut).
104. Kaunas Polytechnic Institute (Kaunasskiy politekhnicheskiy institut).
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106. Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut).
107. Khar'kov State Scientific Research Institute of Metrology (Khar'kovskiy gos. NII metrologii).
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110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut).
111. Leningrad Mining Institute (Leningradskiy gornyy institut).
112. Leningrad Institute of Soviet Trade (Leningradskiy institut Sovetskoy trgovli).
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115. L'vov Polytechnic Institute (L'vovskiy politekhnicheskiy institut).
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117. Moscow Mining Institute (Moskovskiy gornyy institut).
118. Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhicheskiy institut).
119. Moscow Institute of Electronic Engineering (Moskovskiy institut elektronnoy tekhniki).
120. Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography (Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii).
121. Moscow Institute of Chemical Machinery (Moskovskiy institut khimicheskogo mashinostroyeniya).
122. Scientific Research Institute of Physicochemistry im. Karpov (NI fiziko-khimicheskiy institut im. Karpova).
123. Novosibirsk Institute of Automation and Electrometallurgy (Novosibirskiy institut avtomatiki i elektrometallurgii).
124. Odessa Scientific Research Institute of Eye Diseases and Tissue Therapy (Odesskiy NII glaznykh i tkanevoy terapii).
125. Odessa Technological Institute of Refrigeration Industry (Odesskiy tekhnologicheskiy institut kholodil'noy promyshlennosti).
126. Omsk Polytechnic Institute (Omskiy politekhnicheskiy institut).
127. Rostov Civil Engineering Institute (Rostovskiy inzhenerno-stroitel'nyy institut).
128. Ryazan' Radiotechnical Institute (Ryazanskiy radiotekhnicheskiy institut).
129. Siberian State Scientific Research Institute of Metrology (Sibirskiy gos. NII metrologii).
130. Tadzhik State University (Tadzhikskiy gos. universitet).
131. Tartu State University (Tartuskiy gos. universitet).
132. Tomsk State University (Tomskiy gos. universitet).
133. Central Aerohydrodynamic Institute im. Zhukovskiy (Tsentral'nyy aerogidrodinamicheskiy institut im. Zhukovskogo).
134. Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya).
135. Central Scientific Research Institute of Communications (Tsentral'nyy NII svyazi).
136. Uzhgorod State University (Uzhgorodskiy gos. universitet).
137. Voronezh State University (Voronezhskiy gos. universitet).
138. Voronezh Polytechnic Institute (Voronezhskiy politekhnicheskiy institut).
139. All Union Electrotechnical Institute (Vsesoyuznyy elektrotekhnicheskiy institut).
140. All Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements (VNII fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy, VNIFTRI).
141. All Union Scientific Research Institute of Opticophysical Measurements (VNII optiko-fizicheskikh izmereniy).
142. All Union Scientific Research Institute for Synthesis of Mineral Ore (VNII sinteza mineral'nogo syr'ya).
143. All Union Scientific Research Institute of Synthetic Rubber (VNII sinteticheskogo kauchuka).
144. All Union Scientific Research Institute of Television and Radio Broadcasting (VNII televideniya i radioveshchaniya).
145. All Union Correspondence Electrotechnical Institute of Communications (Vsesoyuznyy zaochnyy elektrotekhnicheskiy institut svyazi).
146. Yerevan Physics Institute (Yerevanskiy fizicheskiy institut).

147. Moscow Highway Institute (Moskovskiy avtodorozhnyy institut, MADI).
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149. Leningrad Shipbuilding Institute (Leningradskiy korablestroitel'nyy institut).
150. Dnepropetrovsk State University (Dnepropetrovskiy gos universitet).
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152. Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov, MISI).
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154. Marine Hydrophysical Institute, AN UkrSSR (Morskoy gidrofizicheskii institut AN UkrSSR).
155. North Ossetian State University (Severo-Osetinskii gos universitet).
156. Mountain Agricultural Institute (Gorskiy sel'skokhozyaystvennyy institut).
157. All Union Scientific Research, Planning and Design Institute of Electric Equipment, Khar'kov (VNI i proyektno-konstruktorskiy institut elektroapparatov).
158. Military Medical Academy, Leningrad (Voyenno-meditsinskaya akademiya).
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160. Scientific Research Institute of Hydrometeorological Instrument Manufacture (NII gidrometeorologicheskogo priborostroyeniya).
161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhnika, elektroniki i avtomatiki).
162. Moscow State Pedagogical Institute (Moskovskiy gos pedagogicheskii institut).
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164. Special Design Bureau for Analytical Instrument Manufacture, AN SSSR (Spetsial'noye konstruktorskoye byuro analiticheskogo priborostroyeniya AN SSSR).
165. Kazan' Command Engineering College (Kazanskoye vyssheye komandno-inzhenernoye uchilishche).
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167. Institute of Petrochemical Synthesis im. Topchiyev, AN SSSR, Moscow (Institut neftekhimicheskogo sinteza im Topchiyeva AN SSSR).
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170. Moscow Machine Tool Institute (Moskovskiy stankoinstrumental'nyy institut).
171. Leningrad Institute for the Advanced Training of Physicians (Leningradskiy institut usovershenstvovaniya vrachey).
172. Main Astronomical Observatory, AN UkrSSR (Glavnaya astronomicheskaya observatoriya AN UkrSSR).
173. Ul'yanovsk Polytechnic Institute (Ul'yanovskiy politekhnicheskii institut).
174. Scientific Research Institute of Organic Intermediates and Dyestuffs, Moscow (NII organicheskikh poluproduktov i krasiteley).
175. Arctic and Antarctic Scientific Research Institute, Leningrad (Arkticheskii i antarkticheskii NII).
176. Moscow Geological Prospecting Institut im. Ordzhonikidze (Moskovskiy geologorazvedochnyy institut im Ordzhonikidze).
177. Riga Institute for Civil Aviation Engineers (Rizhskiy institut inzhenerov grazhdanskoy aviatsii).
178. Moscow Institute of Chemical Technology im. Mendeleev (Moskovskiy khimiko-tekhnicheskii institut im Mendeleeva).
179. Moscow Institute of Fine Chemical Technology im. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii im Lomonosova).
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).

182. Kiev Communications College of Military Engineering (Kiyevskoye vysshaye voyennoye inzhenernoye uchilishche svyazi).
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185. Gor'kiy Polytechnic Institute (Gor'kovskiy politekhnicheskiy institut).
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188. All Union Scientific Research Institute of Single Crystals, Khar'kov (VNII monokristallov).
189. Novocherkassk Polytechnic Institute (Novocherkasskiy politekhnicheskiy institut).
190. Central Scientific Research Institute of the Maritime Fleet (Tsentr. nauchnyy NII morskogo flota).
191. Karaganda Polytechnic Institute (Karagandinskiy politekhnicheskiy institut).
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193. Institute of Theoretical and Applied Mechanics, Siberian Branch, AN SSSR, Novosibirsk (Institut teoreticheskoy i prikladnoy mekhaniki SOAN).
194. VIOGEM
195. Northwest Correspondence Polytechnic Institute (Severo-Zapadnyy zaочnyy politekhnicheskiy institut).
196. Institute of Organic Chemistry im. Zelinskiy, AN SSSR (Institut organicheskoy khimii im Zelinskogo AN SSSR).
197. Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).
198. Institute of Mineral Fuels, Moscow (Institut goryuchikh iskopayemykh).
199. Moscow Institute of Electronic Machinery (Moskovskiy institut elektronnoy mashinostroyeniya).
200. Khar'kov Aviation Institute (Khar'kovskiy aviatsionnyy institut).
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348. Volgograd State Pedagogical Institute im Serafimovich (Volgogradskiy gosudarstvennyy pedagogicheskiy institut im Serafimovicha).
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355. All-Union Correspondence Institute of Mechanical Engineering (Vsesoyuznyy zaochnyy mashinostroitel'nyy institut).
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