BIBLIOGRAPHY OF SOVIET DEVELOPMENTS IN MAGNETOHYDRODYNAMICS
NO. 1, JANUARY-DECEMBER, 1975

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INTRODUCTION

This bibliography has been compiled by Informatics Inc. in response to an ARPA contractual requirement to monitor current Soviet developments in the field of magnetohydrodynamics. The period covered is 1975, and includes all known references to MHD topics in open-source Soviet bloc material published or cited in that year.

In so broadly-based a topic as MHD, many different disciplines provide pertinent input. Thus in addition to publications expressly devoted to MHD, there is a large body of articles from journals on high temperature combustion, fluid dynamics, refractory materials, plasma physics, magnetics, etc. which apply to various aspects of magnetohydrodynamics. For the present purpose the selections have been generally limited to those relevant to MHD power generation, although a much broader inclusion could be justified. The bibliography nevertheless indicates a wide range of sources; in addition to the regular serial journals there were over 60 publications of the collection, proceedings or monograph type appearing in 1975 alone in the USSR on MHD. Regrettably, many of this type of special publication are often unobtainable outside the USSR, owing to the Soviet practice of frequently publishing them in very small numbers.

For the sake of consistency, the topic breakdown used is the same as that of the comprehensive ERDA bibliography on magnetohydrodynamics,* published in 1975, with the exception that we have not included electrohydrodynamics as a topic. Again, with an enlarged coverage a more detailed topic breakdown than the six assigned categories herein would probably be more useful in future coverage of the Soviet MHD material. Russian sources are generally

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abbreviated for simplicity; the full titles are listed at the end of the bibliography. A parenthesized entry (RZh, KL, etc.) stands for a secondary source in which the citation appears; all other cited sources are available in the Informatics Library. Russian authors publishing in U.S. journals have generally been omitted.

In summary, while not an exhaustive treatment of the subject, this collection is offered as a reasonably comprehensive listing of significant Soviet MHD publications in 1975.
1. MHD General


4. Electromechanics, automation and applied magnetogasdynamics. Moscow, 1974, 158 p. (RZhMekh, 1/75, 1B82).

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61. Ivanov, V. V. **Inductive MHD machine**. Author's Certificate USSR, no. 430473, published Nov. 2, 1974. (RZhElektrotekhenerg, 8/75, 8F21P)

62. Ivanov, V. V. **Transverse edge effect in a two-channel linear induction pump**. MG, no. 4, 1975, 105-109.


64. Kim, K. I. **Analytical scheme for a binary power plant with a liquid metal MHD generator**. VAN UkrSSR, no. 6, 1974, 72-79. (RZhElektrotekhenerg, 1/75, 1F58)
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82. Levental', G. B., et al. Technical and economical factors for an MHD plant working at peak load. IN: Sb 33, no. 6, 1975, 3-16. (RZhElektrotekhenerg, 12/75, 12F7)


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92. Ovsyannikov, A. M. Study of combined flows in radial nozzles of MHD generators. IN: Sb 24, v. 23, 1974, 103-125. (RZhMekh, 8/75, 8E46)


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7. SOURCE ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AE</td>
<td>Atomnaya energiya</td>
</tr>
<tr>
<td>AN SSSR PM</td>
<td>Akademiya nauk SSSR. Institut prikladnoy matematiki. Moscow.</td>
</tr>
<tr>
<td>DAN SSSR</td>
<td>Akademiya nauk SSSR. Doklady</td>
</tr>
<tr>
<td>FGiV</td>
<td>Fizika goreniya i vzryva</td>
</tr>
<tr>
<td>GAO</td>
<td>Glavnaya Astronomicheskaya Observatorija, Pulkovo.</td>
</tr>
<tr>
<td>IAN Arm</td>
<td>Akademiya nauk Armyanskaya SSR. Izvestiya Mekhanika.</td>
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<tr>
<td>IAN SO SSSR</td>
<td>Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya</td>
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<tr>
<td>IVUZ Avia</td>
<td>Izvestiya vysshikh uchebnikh zavedeniy. Aviatsionnaya tehnika</td>
</tr>
<tr>
<td>IV'Z Elektromekh</td>
<td>Izvestiya vysshikh uchebnikh zavedeniy. Elektromekhanika.</td>
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<td>KL</td>
<td>Knizhnaya letopis'</td>
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<tr>
<td>KLDV</td>
<td>Knizhnaya letopis' - Dopolnitel'nuyy vypusk.</td>
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<tr>
<td>LZhS</td>
<td>Letopis' zhurnal'nykh statey</td>
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<tr>
<td>MG</td>
<td>Magnitnaya gidrodynamika</td>
</tr>
<tr>
<td>MZhiG</td>
<td>Akademiya nauk SSSR. Izvestiya. Mekhanika zhidkosti i gaza.</td>
</tr>
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<td>PM</td>
<td>Prikladnaya mekhanika</td>
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<tr>
<td>PMM</td>
<td>Prikladnaya matematika i mekhanika</td>
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<tr>
<td>Por. Metal</td>
<td>Poroshkovaya metallurgiya</td>
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<td>RBL</td>
<td>Russian Book List</td>
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<td>RZhElektrotekhenerg</td>
<td>Referatívnyy zhurnal. Elektrotekhnika i energetika, 21F</td>
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Sb 1 - Sbornik. Materialy Vses. shkoly po differents. uravneniyam s beskonech. chisлом nezavisimykh peremennykh i po dinamichesk. sistemam s beskonech. chisлом stepeney svobody. Dilizhan, AN Arm SSR.

Sb 2 - Preobrazovatel'n. i elektroizmerit. Tekhnika, Kiev.

Sb 3 - Teor. i prikl. mekh.

Sb 4 - Matematika i mekhanika, Alma-Ata.

Sb 5 - Sovrem. probl. teplovoy gravitats. konvektsii, Minsk.

Sb 6 - Uralsk. konf. po primeneniyu magnit. gidrodinam. v metallurgii, Perm.

Sb 7 - Raschet na prochnost' i zhestkoost' elementov s-kh mashin i tekhnol oborud. Rostov na Donu.

Sb 8 - Mosk. obl. ped. in-t, Moscow.

Sb 9 - Veses. konf. po primeneniyu magnit. gidrodinam. v metallurgii, Perm.

Sb 10 - Materialy Konf. molodykh uchenykh Mordovsk, un-t. Estestv. i tekhn. n. Saransk.

Sb 11 - Sovrem. probl. teplovoy gravitats. Minsk.

Sb 12 - VI Vses. konf. po generatoram nizkotemperatur. plazmy. Frunze.

Sb 13 - Elektroenerg. i magnit. gidrodinamika, Kiev.

Sb 14 - Fiz. aerodispersn. sistem.

Sb 15 - Chisl. metody mekh. splosh. sredy.

Sb 16 - Gidromekhanika. Moscow

Sb 17 - Protsessy i apparaty v magnitniy pole. Apatity.

54
| Sb 18 | - | Geofizicheskiye issledovaniya, Minsk. |
| Sb 19 | - | Dinamika i ustoychivost' mnogomern. sistem, Kiev. |
| Sb 20 | - | Raboty po mekhaniki sploshnoy sredi, Tula. |
| Sb 21 | - | Izbranyye problemy prikladnoy mekhaniki, Moscow. |
| Sb 22 | - | Elektronika i modelirovaniye, Kiev. |
| Sb 23 | - | Teploobmen. Moscow. |
| Sb 24 | - | Nauchnyy institut' vychislitel'nogo tsentra, Moskovskiy universitet, Moscow. |
| Sb 25 | - | Raspredelennoye upravleniye protsessami v sploshnikh sredakh, Kiev. |
| Sb 26 | - | Problemy tekhnicheskoj elektrodinamiki, Moscow. |
| Sb 27 | - | Aerofizicheskiye issledovaniya, Novosibirsk. |
| Sb 28 | - | 8th Rzh. soveshchaniya po magnit. gidrodinamike, Riga. |
| Sb 29 | - | Teplo. i massoobmen v khimicheskoy tekhnologii, Kazan'. |
| Sb 30 | - | Matematicheskaya fizika, Moscow. |
| Sb 31 | - | Kibernetika i vychislitel'naya tekhnika, Moscow. |
| Sb 32 | - | Energeticheskiy institut im. G. M. Krzhizhanovskogo, Moscow. |
| Sb 33 | - | Teplotekhnicheskiye problemy pryamogo preobrazovaniya energii, Kiev. |
| Sb 34 | - | Stroyeniye, svoystva i primeneniyte metallov, Moscow. |
Sb 35  -  Voprosy MGD preobrazovaniya energii. Kiev.
Sb 37  -  Energetika, Kuybyshev.
Sb 38  -  Voprosy gazotermodinamiki energoustanovok. Khar'kov.
Sb 39  -  Energetika, Voronezh.
Sb 40  -  Institut vysok. temperatur, AN SSSR, Moscow.
Sb 41  -  Magnitnogidrodinamicheskiye ustanovki. Moscow.
Sb 42  -  Fiz. i primenenye plazm uskoriteley, Minsk.
Sb 43  -  Teplofizika i termodinamika, Sverdlovsk.
Sb 44  -  Fiz. institut, AN SSSR, Moscow.
TVT   -  Teplofizika vysokikh temperatur
Tr 1  -  Trudy. Frunze politekhnicheskiy institut Frunze.
Tr 2  -  Tsentr. Aero-Gidrodinam. Institut, Moscow.
Tr 3  -  Yerevan un-t. Yestestv. nauk.
Tr 4  -  Molodoy nauch. robotnik, Yerevan.
Tr 5  -  Mosk. energ. in-ta., Moscow.
Tr 6  -  Mosk. fiz. -tekhn. in-ta, Moscow.
Tr 7  -  Inst. mekh., Mosk un-ta, Moscow.
Tr 8  -  Kazan'. Aviatsionnyy institut.
Tr 9  -  Matematicheskiy Institut, AN SSSR, Moscow.
Tr 10 -  Moskovskiy Aviatsionnyy Institut, Moscow.
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<th>Code</th>
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<td>Tr 11</td>
<td>Tallin Politekhnicheskiy Institut, Tallin.</td>
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<td>Tr 12</td>
<td>Azerb. nauch. -issled. institut energetiki, Baku.</td>
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<td>UFN</td>
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<td>Akademiya nauk Ukrainskoy SSR. Vestnik</td>
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<tr>
<td>VLU</td>
<td>Leningradskiy universitet. Vestnik</td>
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<tr>
<td>ZhETF</td>
<td>Zhurnal eksperimental'noy i teoreticheskoy fiziki.</td>
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<td>ZhETF P</td>
<td>Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki.</td>
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<tr>
<td>ZhPKh</td>
<td>Zhurnal prikladnoy khimii.</td>
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<td>ZhPMTF</td>
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