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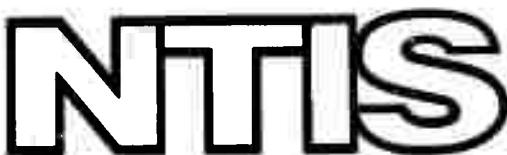
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13. ABSTRACT <p>This report includes bibliographic lists on major contractual subjects that were completed in August, 1972. The major topics are: laser technology, effects of strong explosions, geosciences, and particle beams. A section on material science has been included as the optional fifth topic, as well as a section on items of miscellaneous interest.</p> <p>To avoid duplication in reporting, only laser entries concerning high-power effects have been included, since all current laser material will appear routinely in the quarterly bibliographies.</p> <p>An index identifying source abbreviations is appended.</p>		

INTRODUCTION

This report includes bibliographic lists on major contractual subjects that were completed in August, 1972. The major topics are: laser technology, effects of strong explosions, geosciences, and particle beams. A section on material science has been included as the optional fifth topic, as well as a section on items of miscellaneous interest.

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1. Laser Technology

A. Recent Selections

i. Beam-Target Effects

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A. Recent Selections

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SUBJECT: SCIENTIFIC DISCOVERY IN HYDROBIONICS

SOURCE: Presnyakov, A. Secrets of "living torpedoes." Sovetskaya Rossiya, 19 September 1972, p. 4, cols. 2-6.

On 18 September 1972, Soviet researchers S. V. Pershin, A. G. Tomilin, and A. S. Sokolov were awarded certificates by the Committee on Inventions and Discoveries of USSR Council of Ministers. According to press, these researchers have discovered the previously unknown ability of cetaceans to regulate the flexibility of their flippers. Visual and photographic observations under natural and artificial conditions, coupled with x-ray and microscopic examination of cetacean propulsion organs, revealed a complex mechanism for regulating flipper flexibility, based on a highly branched and specialized vascular network and tegumental (skin) tissues. It is stated that this discovery should have a significant impact on hydrobionics, specifically, the development of novel propulsion systems for vessels.

SUBJECT: SOVIETS STUDY SEA OF OKHOTSK AS TIDAL POWER SOURCE

SOURCE: Using the energy of the sea. Vechernyaya Moskva, 13 September 1972, p. 3, col. 10.

A group of specialists, including personnel from the Gidroproyekt Institute imeni S. Ya. Zhuk, is presently on Kamchatka studying the possible use of tides in the Sea of Okhotsk as a source of electric power. The Sea of Okhotsk has the largest tidal swing in the

USSR, with values of 12 meters at Penzhinskaya Guba in the north and 8 meters near the Shantarskiye Islands in the south. According to the preliminary estimates of the specialists, Penzhinskaya Guba alone is capable of generating about 20 million kilowatts.

SOURCE ABBREVIATIONS

AiT	-	Avtomatika i telemekhanika
APP	-	Acta physica polonica
DAN ArmSSR	-	Akademiya nauk Armyanskoy SSR. Doklady
DAN AzSSR	-	Akademiya nauk Azerbaydzhanskoy SSR. Doklady
DAN BSSR	-	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	-	Akademiya nauk SSSR. Doklady
DAN TadSSR	-	Akademiya nauk Tadzhikskoy SSR. Doklady
DAN UkrSSR	-	Akademiya nauk Ukrainskoy SSR. Dopovidi
DAN UzbSSR	-	Akademiya nauk Uzbekskoy SSR. Doklady
DBAN	-	Bulgarska akademiya na naukite. Doklady
EOM	-	Elektronnaya obrabotka materialov
FAiO	-	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	-	Fizika goreniya i vzryva
FiKhOM	-	Fizika i khimiya obrabotka materialov
F-KhMM	-	Fiziko-khimicheskaya mekhanika materialov
FMiM	-	Fizika metallov i metallovedeniye
FTP	-	Fizika i tekhnika poluprovodnikov
FTT	-	Fizika tverdogo tela
FZh	-	Fiziologicheskiy zhurnal
GiA	-	Geomagnetizm i aeronomiya
GiK	-	Geodeziya i kartografiya
IAN Arm	-	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN Az	-	Akademiya nauk Azerbaydzhanskoy SSR. Izvestiya. Seriya fiziko-tehnicheskikh i matematicheskikh nauk

IAN B	-	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Biol	-	Akademiya nauk SSSR. Izvestiya. Seriya biologicheskaya
IAN Energ	-	Akademiya nauk SSSR. Izvestiya. Energetika i transport
IAN Est	-	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika matematika
IAN Fiz	-	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Fizika zemli	-	Akademiya nauk SSSR. Izvestiya. Fizika zemli
IAN Kh	-	Akademiya nauk SSSR. Izvestiya. Seriya khimicheskaya
IAN Lat	-	Akademiya nauk Latviyskoy SSR. Izvestiya
IAN Met	-	Akademiya nauk SSSR. Izvestiya. Metallo
IAN Mold	-	Akademiya nauk Moldavskoy SSR. Izvestiya. Seriya fiziko-tehnicheskikh i matematicheskikh nauk
IAN SO SSSR	-	Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya
IAN Tadzh	-	Akademiya nauk Tadzhiksoy SSR. Izvestiya. Otdeleniye fiziko-matematicheskikh i geologo-khimicheskikh nauk
IAN TK	-	Akademiya nauk SSSR. Izvestiya. Tekhnicheskaya kibernetika
IAN Turk	-	Akademiya nauk Turkmeneskoy SSR. Izvestiya. Seriya fiziko-tehnicheskikh, khimicheskikh, i geologicheskikh nauk
IAN Uzb	-	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IBAN	-	Bulgarska akademiya na naukite. Fizicheski institut. Izvestiya na fizicheskaya institut s ANEB
I-FZh	-	Inzhenerno-fizicheskiy zhurnal

IiR	-	Izobretatel' i ratsionalizator
ILEI	-	Leningradskiy elektrotekhnicheskiy institut. Izvestiya
IT	-	Izmeritel'naya tekhnika
IVUZ Avia	-	Izvestiya vysshikh uchebnykh zavedeniy. Aviationsnaya tekhnika
IVUZ Cher	-	Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya
IVUZ Energ	-	Izvestiya vysshikh uchebnykh zavedeniy. Energetika
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 Gorn	-	Izvestiya vysshikh uchebnykh zavedeniy. Gornyy zhurnal
IVUZ Mash	-	Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye
IVUZ Priboro	-	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr	-	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
IVUZ Stroi	-	Izvestiya vysshikh uchebnykh zavedeniy. Stroitel'stvo i arkhitektura
KhVE	-	Khimiya vysokikh energiy
KiK	-	Kinetika i kataliz
KL	-	Knizhnaya letopis'
Kristall	-	Kristallografiya
KSpF	-	Kratkiye soobshcheniya po fizike

LZhS	-	<i>Letopis' zhurnal'nykh statey</i>
MiTOM	-	<i>Metallovedeniye i termicheskaya obrabotka materialov</i>
MP	-	<i>Mekhanika polimerov</i>
MTT	-	<i>Akademiya nauk SSSR. Izvestiya. Mekhanika tverdogo tela</i>
MZhiG	-	<i>Akademiya nauk SSSR. Izvestiya. Mekhanika zhidkosti i gaza</i>
NK	-	<i>Novyye knigi</i>
NM	-	<i>Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy</i>
NTO SSSR	-	<i>Nauchno-tehnicheskiye obshchestva SSSR</i>
OiS	-	<i>Optika i spektroskopiya</i>
OMP	-	<i>Optiko-mekhanicheskaya promyshlennost'</i>
Otkr izobr	-	<i>Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki</i>
PF	-	<i>Postupy fizyki</i>
Phys abs	-	<i>Physics abstracts</i>
PM	-	<i>Prikladnaya mekanika</i>
PMM	-	<i>Prikladnaya matematika i mekanika</i>
PSS	-	<i>Physica status solidi</i>
PSU	-	<i>Pribory i sistemy upravleniya</i>
PTE	-	<i>Pribory i tekhnika eksperimenta</i>
Radiotekh	-	<i>Radiotekhnika</i>
RiE	-	<i>Radiotekhnika i elektronika</i>
RZhAvtom	-	<i>Referativnyy zhurnal. Avtomatika, telemekhanika i vychislitel'naya tekhnika</i>
RZhElektr	-	<i>Referativnyy zhurnal. Elektronika i yeye primeneniye</i>

RZhF	-	Referativnyy zhurnal. Fizika
RZhFoto	-	Referativnyy zhurnal. Fotokinotehnika
RZhGeod	-	Referativnyy zhurnal. Geodeziya i aerofotogrammika
RZhGeofiz	-	Referativnyy zhurnal. Geofizika
RZhInf	-	Referativnyy zhurnal. Informatics
RZhKh	-	Referativnyy zhurnal. Khimiya
RZhMekh	-	Referativnyy zhurnal. Mekhanika
RZhMetrolog	-	Referativnyy zhurnal. Metrologiya i izmeritel'naya tekhnika
RZhRadiot	-	Referativnyy zhurnal. Radiotekhnika
SovSciRev	-	Soviet science review
TiEKh	-	Teoreticheskaya i eksperimental'naya khimiya
TKiT	-	Tekhnika kino i televideniya
TMF	-	Teoreticheskaya i matematicheskaya fizika
TVT	-	Teplofizika vysokikh temperatur
UFN	-	Uspekhi fizicheskikh nauk
UFZh	-	Ukrainskiy fizicheskiy zhurnal
UMS	-	Ustalost' metallov i splavov
UNF	-	Uspekhi nauchnoy fotografii
VAN	-	Akademiya nauk SSSR. Vestnik
VAN BSSR	-	Akademiya nauk Belorusskoy SSR. Vestnik
VAN KazSSR	-	Akademiya nauk Kazakhskoy SSR. Vestnik
VBU	-	Belorusskiy universitet. Vestnik
VNDKh SSSR	-	VNDKh SSSR. Informatsionnyy byulleten'
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
ZhFKh	-	Zhurnal fizicheskoy khimii
ZhNiPFIK	-	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhNKh	-	Zhurnal neorganicheskoy khimii
ZhPK	-	Zhurnal prikladnoy khimii
ZhPMTF	-	Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki
ZhPS	-	Zhurnal prikladnoy spektroskopii
ZhTF	-	Zhurnal tekhnicheskoy fiziki
ZhVMMF	-	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki
ZL	-	Zavodskaya laboratoriya