ISJAEE

TOPICS OF INTERNATIONAL SCIENTIFIC JOURNAL
FOR ALTERNATIVE ENERGY AND ECOLOGY

I. RENEWABLE ENERGY

1. Solar energy

A.Steinfield (Switzerland, Zurich, ETH-Swiss Federal Institute) (IEB)
G.I. Isakov (Azerbaijan, Baku, Institute of Physics of NAS of Azerbaijan) (DECH)
I.G. Khidirov (Uzbekistan, Tashkent, Institute of Nuclear Physics of NAS of Uzbekistan) (IEB)
S.Geruny (Armenia, Yerevan, Yerevan State University) (IEB)
S.M. Raza (Pakistan, Quetta, University Of Balochistan) (IEB)
S.Z. Ilyas (Pakistan, Quetta, University Of Balochistan) (IEB)
A.M. Pendjiev (Turkmenistan, Ashkhabat-32, Tutkmenian Polytechnic Institute) (IEB)
V.F. Gremenok (Belorussia, Minsk, Joined Institute of Solid State and Semi-conductor Physics) (IEAB)
V.A. Butuzov (Russia, Krasnodar, "Yuzhgeoteplo")

1-1-0-0 History of solar energy

1-2-0-0 Solar-hydrogen energy
T.N. Veziroglu (USA, Miami, IAHE, UNIDO-ICHET) (HECH)
1-2-1-0 Materials for solar-hydrogen energy

1-3-0-0 Solar power plants
1-3-1-0 Silicone solar thermal electric plants
1-3-2-0 Space solar stations
1-3-3-0 Photoelectric cell
1-3-4-0 Photovoltaic effect in semiconductor structures. Photoelectric modules

1-4-0-0 Ground solar stations
1-4-1-0 Solar collectors

1-5-0-0 Solar cities
1-5-1-0 Solar buildings
1-5-2-0 Solar refrigerators
1-5-3-0 Solar water-lifting systems
1-5-4-0 Solar energy units

1-6-0-0 Solar transport

1-7-0-0 Solar radiation concentrators

2. Wind energy

I.Z. Boguslavskiy (Russia, Moscow, DBREPE RAS) (IEB)
V.L. Okulov (Russia, Novosibirsk, SB RAS)
G.A.M. van Kuik (Netherlands, Delft, Wind Energy Research Institute)

2-1-0-0 Wind Energy and Architecture

2-2-0-0 Wind Energy and Ecology

2-3-0-0 Unique Wind Energy Solutions

2-4-0-0 Sail-Driven Wind Energy

2-5-0-0 Hybrid Wind Turbines

2-6-0-0 History of Wind Energy

2-7-0-0 Combined Wind and Hydrogen Energy

2-8-0-0 Electric Power Generators for Wind Energy

2-9-0-0 New Designs of Vertical-Axis Wind Turbines

2-10-0-0 Horizontal-Axis Wind Turbines

2-11-0-0 Savonius Vertical-Axis Wind turbines

2-12-0-0 Darrieus Vertical-Axis Wind Turbines

2-13-0-0 Combined Wind and Solar Power Plants

2-14-0-0 Future of Wind Energy

2-15-0-0 Balloon-Based Wind Energy

2-16-0-0 Wind Energy Materials

2-17-0-0 Computer Simulations of the Time Profile of Dynamic Wind Velocity Component

2-18-0-0 Integrated Modeling of Vertical-Axis Wind Turbines

2-19-0-0 Energy Conversion in Wind Turbines

2-20-0-0 Wind Energy Applications. Engineering, Economy, Ecology

3. Marine hydroenergetics

3-1-0-0 History of energy of tides
A.L. Gusev (Russia, Sarov, STC "TATA")
3-2-0-0 Sea waves energy
S.P. Kapitza (Russia, Moscow, IPP RAS)
3-3-0-0 Sea tide energy

4. Geothermal energy

V.A. Butuzov (Russia, Krasnodar, "Yuzhgeoteplo")

4-1-0-0 History of geothermal energy

4-2-0-0 Basic research into geothermal energy

4-3-0-0 Problems of geothermal energy assimilation

4-4-0-0 Role of modeling and monitoring in geothermal energy assimilation. Appraisal of geothermal resources

4-5-0-0 Geothermal plants
4-5-1-0 Geothermal power plants
4-5-2-0 Geothermal heat plants

4-6-0-0 Efficiency and reliability of geothermal heat and power plants. Major ways to improve the efficiency of geothermal heat and power plants

4-7-0-0 Geothermal resources of world countries and prospects of their development

5. Energy of biomass

S.A. Markov (USA, Greencastle, DePauw University) (IEB)
A.L. Gusev (Russia, Sarov, STC "TATA")

5-1-0-0 Biogas plants

5-2-0-0 Thermochemical gas generators

5-3-0-0 Energy of biomass and ecology

6. Small hydroenergetics

S.Shatvoryan (Armenia, Yerevan, Energy Strategy Center) (IEB)

6-1-0-0 Equipment for small and micro hydro-power plants (HPP)

6-2-0-0 Derivation micro hydro-power plants

7. Unconventional sources of renewed energy

V.A. Khusnutdinov (Russia, Moscow, RAO UES of Russia) (IEB)
A.L. Gusev (Russia, Sarov, STC "TATA")

7-1-0-0 Application of ice in energy. Glacial power stations

7-2-0-0 Application of cold of permafrost for thermostatic control of domestic and process structures
7-3-0-0 Physical and chemical properties of ice

7-4-0-0 Thermal properties of ice

7-5-0-0 Thermodynamic basis for production and application of ice

7-6-0-0 Equipment for ice testing

7-7-0-0 Facilities for ice production

7-8-0-0 Methods and machinery for ice emergent break up for safety depth devices and over-land vehicles undergoing disaster

7-9-0-0 Binary ice in science and technique

7-10-0-0 Application of ice for construction of engineering and technical, and architecture structures

7-11-0-0 Ice dynamics and strength. Embrittlement dynamics. Experimental methods of ice breaking up dynamic mechanics

7-12-0-0 Numerical and combined numerical and experimental methods of ice breaking up dynamic mechanics

7-13-0-0 Techniques for removing ice from water reservoirs

7-14-0-0 Cold storage and application

7-15-0-0 Transport of icebergs and production of fresh water

7-16-0-0 Thermogradient energy

8. RES based power complexes

II. NONRENEWABLE ENERGY

9. Atomic energy

Yu.A. Trutnev, Acad. RAS (Russia, Sarov, RFNC-VNIIEF) (HECH)
A.Ya. Stolyarevskiy (Russia, Moscow, RRC "Kurchatov Institute") (IEB)
A.G. Chudin (Russia, Moscow, Federal Agency for Nuclear Energy) (IEAB)
V.A. Afanas'ev (Russia, Sarov, RFNC-VNIIEF) (IEB)
M.A. Prelas (USA, Columbia, University of Missouri) (IEB)

9-1-0-0 Atomic-hydrogen energy
N.N. Ponomaryov-Stepnoy, Acad. RAS (Russia, Moscow, RRC "Kurchatov Institute") (SEB)
A.Ya. Stolyarevskiy (Russia, Moscow, RRC "Kurchatov Institute") (IEB)
V.N. Fateev (Russia, Moscow, RRC "Kurchatov Institute") (IEB)
A.L. Gusev (Russia, Sarov, STC "TATA")

9-1-1-0 History of atomic-hydrogen energy
N.N. Ponomaryov-Stepnoy, Acad. RAS (Russia, Moscow, RRC "Kurchatov Institute") (SEB)
A.Ya. Stolyarevskiy (Russia, Moscow, RRC "Kurchatov Institute") (IEB)
A.L. Gusev (Russia, Sarov, STC "TATA")

9-1-2-0 High-temperature gas reactors (HTGR) for hydrogen production via high-temperature processes

9-1-3-0 Fast reactors with sodium cooling (SC) to produce mid-temperature heat, and synthesis gas and hydrogen

9-1-4-0 Fast reactors with lead cooling as reactors of future generation to produce high-temperature heat
G.L. Khorasanov (Obninsk, SSC of the RF – Institute for Physics and Power Engineering Named After A.I. Leypunsky) (IEB)

9-2-0-0 Atomic energy for vehicles
M.A. Kazaryan (Russia, Moscow, P.N. Lebedev FIAN) (IEB)
I.V. Shamanin (Russia, Tomsk, Tomsk Polytechnical Univ.) (IEB)

9-2-1-0 Radionuclide heat sources

9-2-2-0 Radionuclide thermoelectric generators

9-2-3-0 Thermo- and radiation-stimulated phase transformation in alloys incorporated (carbides, nitrides, nitrides-hydrides, carbohydrides and hydrides of transition metals, high-temperature, super-conducting materials, intermetallic composition)

10. Explosion energy

V.E. Fortov, Acad. RAS (Russia, Moscow, Institute of thermal physics of extremal state RAS) (SEB)
A.L. Mikhailov (Russia, Sarov, Institute of Experimental Gasdynamics and Physics of Explosion RFNC-VNIIEF) (IEB)
N.N. Gerdyukov (Russia, Sarov, Institute of Experimental Gasdynamics and Physics of Explosion RFNC-VNIIEF) (IEB)
A.A. Sterzer (Russia, Novosibirsk, MATEM Co. Ltd) (IEB)
V.N. German (Russia, Sarov, Institute of Experimental Gasdynamics and Physics of Explosion RFNC-VNIIEF) (IEB)

10-1-0-0 Explosion technologies

10-2-0-0 Computer simulation of problems for explosion energy
M.A. Syrunin (Russia, Sarov, IEB RFNC-VNIIEF)

10-2-1-0 Setting up problems for explosion energy

10-2-2-0 Mobile Lagrangian and Euler grids

10-3-0-0 Explosion deuterium energy

10-4-0-0 Explosion energy for syntheses of new materials

10-4-1-0 Materials synthesis and sticking by the explosion

10-4-2-0 Shock-wave sticking

10-4-3-0 Computer modelling of processes of material shock-wave sticking

10-5-0-0 Explosives

10-6-0-0 Blasting chambers
A.A. Sterzer (Russia, Novosibirsk, MATEM Co. Ltd) (IEB)

10-7-0-0 Extremal state of matter. Detonation. Shock waves

10-8-0-0 Energy materials and physics of detonation

10-9-0-0 Equations of the state and phase transition

III. THERMONUCLEAR ENERGY

11. Thermonuclear energy

V.N. Lobanov (Russia, Sarov, RFNC-VNIIEF) (IEB)

11-1-0-0 Investigations on the controlled thermonuclear fusion

11-2-0-0 X-ray thermonuclear fusion

11-3-0-0 Beam fusion

11-4-0-0 Inertial fusion

11-5-0-0 Isotope effect

11-6-0-0 Cryogenic tritium targets

11-7-0-0 High-pressure targets designed for research of nuon catalysis processes in nuclear fusion

11-8-0-0 International project of thermonuclear fusion reactor, ITER

11-9-0-0 Radiological protection and nuclear security

11-10-0-0 Production of radioisotopes and application
M.A. Kazaryan (Russia, Moscow, FIAN Lebedev Institute of Physics of RAS) (IEB)

11-11-0-0 Fuel cycle and ecology

11-12-0-0 Design, construction and maintenance of nuclear research and power reactors

11-13-0-0 Production of components and materials required for application in nuclear reactors and fuel cycles thereof

11-14-0-0 TOKAMAK systems

11-15-0-0 Auxiliary magnetocumulative systems

IV. HYDROGEN ECONOMY

12. Hydrogen economy

F.Karaosmanoglu (Turkey, Istanbul, Istanbul Technical Univ.) (IEB)
Z.Sen (Turkey, Istanbul, Istanbul Technical University) (IEB)
A.L. Gusev (Russia, Sarov, STC "TATA")

12-1-0-0 History of hydrogen economy
T.N. Veziroglu (USA, Miami, IAHE, UNIDO-ICHET) (HECH)
A.G. Galeev (Russia, Sergiev Posad, JSC "NIIHIMMASH") (IEB)

12-2-0-0 Safety of hydrogen energy
A.G. Galeev (Russia, Sergiev Posad, JSC "NIIHIMMASH") (IEB)
J.Kleperis (Latvia, Riga, University of Latvia) (IEB)
L.F. Belovodskiy (Russia, Sarov, RFNC-VNIIEF) (IEAB)

12-2-1-0 Hydrogen recombinators
A.L. Gusev (Russia, Sarov, STC "TATA")
12-2-2-0 Systems of inert gas blowing off
12-2-3-0 Ensuring of the safe operation of cryogenic systems
12-2-4-0 Safe application of hydrogen on board the vehicle

12-3-0-0 Gas analytical systems and hydrogen sensors
J.Kleperis (Latvia, Riga, University of Latvia) (IEB)
A.M. Polyansky (Russia, S.-Petersburg, "Electronic & Beam Technologies Ltd.") (IEB)
V.M. Aroutiounian, Academician NAS of Armenia (Armenia, Yerevan, Yerevan State University) (SEB)
J.Schoonman (Netherlands, Delft, Delft University of Technology) (IEAB)
L.I. Trakhtenberg (Russia, Moscow, N. N. Semenov Institute of Chemical Physics RAS) (IEB)

12-4-0-0 Hydrogen storage
J.Kleperis (Latvia, Riga, University of Latvia) (IEB)
O.N. Srivastava (India, Varanasi, Banaras Hindu University) (IEB)
S.M. Aldoshin, Acad. RAS (Russia, Chernogolovka, IPCP RAS) (SEB)
B.P. Tarasov (Russia, Chernogolovka, IPCP RAS) (IEB)

12-4-1-0 Hydrogen storage in carbon nanosystems
O.N. Efimov (Russia, Chernogolovka, IPCP RAS) (IEB)
B.K. Gupta (India, Varanasi, Banaras Hindu University) (IEB)
A.V. Vakhroushev (Russia, Izhevsk, Institute of Applied Mechanics of Ural branch of RAS) (IEB)
12-4-2-0 Hydrogen storage in an incapsulated gaseous state: in microspheres, in foam metals, in zeolites and others
V.S. Kogan (Ukraine, Khar'kov, NSC Kharkov Institute of Physics and Technology) (IEB)
A.F. Chabak (Russia, Moscow, Academy of perspective technologies) (IEB)
E. F. Medvedev (Russia, Sarov, RFNC-VNIIEF) (IEB)
12-4-3-0 Hydrogen storage in gaseous state under pressure
A.S Koroteev, Academician RAS (Russia, Moscow, Keldysh Research Center) (SEB)
12-4-3-1 Hydrogen storage in gaseous state in large reservoirs
12-4-3-2 Hydrogen storage in gaseous state in tank
12-4-4-0 Hydrogen storage in liquid state
A.M. Arkharov (Russia, Moscow, Bauman Moscow State Technical University) (IEB)
A.M. Domashenko (Russia, Balashikha, "Cryogenmash") (IEB)
V.I. Kupriyanov (Russia, Balashikha, JSC "Cryogenmash") (IEB)
A.A. Makarov (Russia, Sergiev Posad, JSC "NIIHIMMASH") (IEB)
G.G. Shevyakov (Russia, Balashikha, JSC "Cryogenmash") (IEB)
V.S. Travkin (USA, Los Angeles, University of California) (IEB)
V.S. Kogan (Ukraine, Khar'kov, NSC Kharkov Institute of Physics and Technology) (IEB)
I.F. Kuz'menko (Russia, Balashikha, JSC "Cryogenmash") (IEAB)
A.G. Galeev (Russia, Sergiev Posad, JSC "NIIHIMMASH") (IEB)
12-4-4-1 Hydrogen storage in cryogenic liquid state in large reservoirs
12-4-4-2 Hydrogen storage in cryogenic liquid state on board the vehicles
B.A. Sokolov (Russia, Korolyov, S.P. Korolyov Energia RSC) (IEB)
12-4-5-0 Hydrogen storage in chemically-bonded state in liquid media
12-4-6-0 Hydrogen storage in solid phase state in metal hydride systems
M.D. Hampton (USA, Orlando, Univ. of Central Florida) (DECH)
B.P. Tarasov (Russia, Chernogolovka, IPCP RAS) (IEB)
S.P. Gabuda (Russia, Novosibirsk, IIC SO RAS) (IEB)
V.L. Kozhevnikov (Russia, Ekaterinburg, ISSC Ural Branch of RAS) (IEB)
12-4-7-0 Hydrogen storage in combined systems
12-4-8-0 Hydrogen storage in adsorbed state in cryogenic adsorbents
12-4-9-0 Novel methods of hydrogen storage

12-5-0-0 Hydrogen production methods
I.F. Kuz'menko (Russia, Balashikha, JSC "Cryogenmash") (IEAB)
V.V. Lunin, Acad. RAS (Russia, Moscow, M.V. Lomonosov MSU)

12-5-1-0 Radiolysis
M.A. Prelas (USA, Columbia, University of Missouri-Columbia) (IEB)
12-5-2-0 Electrolysis
12-5-3-0 Hydrogen production via thermochemical dissociation of water
12-5-4-0 Hydrogen production by ammonia decomposition
V.A. Kirillov (Russia, Novosibirsk, Boreskov Institute of Catalysis) (IEB)
12-5-5-0 Method of catalytic conversion (reforming) of gaseous and liquid hydrocarbons
12-5-6-0 Hydrogen production by partial oxidation of hydrocarbons
12-5-7-0 High-temperature process for hydrogen production
12-5-8-0 Hydrates
S.P. Gabuda (Russia, Novosibirsk, IIC SO RAS) (IEB)
12-5-9-0 Hydrogen production on board of the vehicle from organic fuels
12-5-10-0 On board hydrogen production via reaction of interaction of water and metals (aluminium, magnesium etc.)
12-5-10-1 Mechanic and electric methods of removal of oxide layer during reaction
12-5-10-2 Chemical methods of removal of oxide layer during reaction
12-5-10-3 Ultrasonic methods of removal of oxide layer during reaction
12-5-10-4 Methods of increase of specific surface of metals
1-5-10-5 Thermal and pressure methods of intensification of hydrogen production
12-5-10-6 Devices for on board hydrogen production via reaction of interaction of water and metals
12-5-10-7 Devices for hydrogen production via reaction of interaction of water and metals for domestic apllications
12-5-10-8 Devices for hydrogen production via reaction of interaction of water and metals for commercial apllications

12-5-10-9 Physico-mathematical model of processes of hydrogen production
12-5-10-10 Novel lines of development of method for on-board application
12-5-11-0 Hydrogen production from deep-sea hydrogen sulphide
I.M. Neklyudov (Ukraine, Khar'kov, Khar'kov Physical Technical Institute) (IEB)
N.A. Azarenkov (Ukraine, Khar'kov, Khar'kov Physical Technical Institute) (IEB)
V.I. Tkachenko (Ukraine, Khar'kov, Khar'kov Physical Technical Institute) (IEB)
12-5-12-0 Novel hydrogen production methods

12-6-0-0 Hydrogen transport
A.G. Galeev (Russia, Sergiev Posad, JSC "NIIHIMMASH") (IEB)
12-6-1-0 Transport of liquid cryogenic products by pipelines
A.M. Domashenko (Russia, Balashikha, JSC "Cryogenmash") (IEB)
12-6-2-0 Cooling of cryogenic system mains
12-6-3-0 Transient processes in cryogenic systems

12-7-0-0 Fuel cells
B.A. Sokolov (Russia, Korolyov, S.P. Korolyov Energia RSC) (IEB)
Yu.N. Shalimov (Russia, Voronezh, VSTU) (IEB)
V.P. Pakhomov (Russia, Moscow, RRC "Kurchatov Institute") (IEB)
12-7-1-0 Research and production of fuel cells
12-7-1-1 Membanes for fuel cells
12-7-1-2 Computer simulation of fuel cell operation
12-7-2-0 Fuel cells application
12-7-2-1 Power supply on fuel cells with methanol conversion for portable devices
12-7-3-0 Fuel cells with hydrogenous fuel pre-processing

12-8-0-0 Structural materials
P.G. Berezhko (Russia, Sarov, RFNC-VNIIEF) (IEB)
A.M. Polyansky (Russia, S.-Petersburg, "Electronic & Beam Technologies Ltd.") (IEB)
V.M. Chertov (Russia, Moscow) (IEB)
Yu.N. Shalimov (Russia, Voronezh, VSTU) (IEB)
P.Saint-Gregoire (France, University de Toulon et du Var) (DECH)
F.A. Lewis (Great Britain, Belfast, The Queen's University of Belfast) (SEB)
A.T. Ponomarenko (Russia, Moscow, Enikolopov Institute of Synthetic Polymer Materials of RAS) (IEAB)
L.V. Spivak (Russia, Perm', Perm' State University) (IEAB)
M.V. Gol'tsova (Ukraine, Donetsk, Donetsk STU) (IEAB)
N.M. Vlasov (Russia, Podol'sk, SRI SIA "Luch") (IEB)
I.I. Fedik (Russia, Podol'sk, SRI SIA "Luch") (IEB)
12-8-1-0 Hydrogen in metals and alloys
V.A. Gol'tsov (Ukraine, Donetsk, DonSTU) (IEB)
L.F. Gol'tsova (Ukraine, Donetsk, DonSTU) (IEB)
12-8-2-0 Hydrogen degradation
12-8-3-0 Structural materials hydrogenation systems
12-8-4-0 Static and dynamic strength of structural materials
N.N. Gerdyukov (Russia, Sarov, Institute of Experimental Gasdynamics and Physics of Explosion RFNC-VNIIEF) (IEB)
12-8-5-0 Gasars. Application of gasars in marine and air fleet, motor-car construction
12-8-6-0 Electrical furnaces for thermovacuum processes
E.N. Marmer (Moscow, VNIIETO)
12-8-7-0 New structural materials for renewable energy structures

12-9-0-0 Synthesis-gas production methods
A.Ya. Stolyarevskiy (Russia, Moscow, RRC "Kurchatov Institute") (IEB)
12-9-1-0 Adiabatic conversion of the natural gas

12-10-0-0 Hydrogen fuel vehicles and engines
T.Gaertig (Germany, Berlin) (IEB)
A.L. Dmitriev (Russia, S.-Petersburg, RSC "Applied Chemistry") (IEB)
A.M. Domashenko (Russia, Balashikha, JSC "Cryogenmash") (IEB)
B.A. Sokolov (Russia, Korolyov, S.P. Korolyov Energia RSC) (IEB)
A.Yu. Ramenskiy (Russia, Moscow, Audit-Premier) (IEAB)
V.S. Sokolov (Russia, S.Petersburg) (IEAB)
12-11-0-0 Hydrogen filling stations
12-12-0-0 Hydrogen for providing buildings, structures and houses with energy. Micro hydrogen power plants based on fuel cells

V. STRUCTURAL MATERIALS

13. Nanostructures

A.M. Lipanov, Acad. RAS (Russia, Izhevsk, Institute of Applied Mechanics UB RAS) (IEB)
Yu.M. Shul'ga (Russia, Chernogolovka, JSC "Cryogenmash") (IEB)
V.I. Kodolov (Russia, Izhevsk, BRHE Centre of Chemical Physics and Mesoscopy) (IEAB)
Yu.S. Nechaev (Russia, Moscow, Bardin Research Institute of the Ferrous-Metals Industry) (IEAB)
B.P. Tarasov (Chernogolovka, IPCP RAS) (IEAB)
Yu.D. Tretiakov, Acad. RAS (Russia, Moscow, FMS MSU) (SEB)
13-1-0-0 Nanosystems: synthesis, properties, and application
E.A. Goodilin, Member Corresp. RAS (Russia, Moscow, FMS MSU) (SEB)
V.V. Kyrsheva (Russia, Sarov, STC "TATA")
13-2-0-0 Fullerene structures and carbon nanomaterials for heat insulation
13-3-0-0 Fullerene structures and carbon nanomaterials for hydrogen sensors
M.V. Vorobiova (Russia, Moscow, GIREDMET) (IEAB)
V.M. Aroutiounian, Acad. NAS of Armenia (Armenia, Yerevan, Yerevan State University) (SEB)
13-4-0-0 Computer simulation of synthesis of carbon nanomaterials with specified properties
13-5-0-0 Carbon nanostructures for vehicles

VI. THERMODYNAMIC BASICS OF AEE

14. Thermodynamic analysis in renewable energy

V.A. Khusnutdinov (Russia, Moscow, RAO UES of Russia) (IEB)
A.L. Gusev (Russia, Sarov, STC "TATA")
14-1-0-0 Thermodynamic analysis of basic energy generation processes in alternative energy
14-2-0-0 Exergetic analysis of basic energy generation processes in alternative energy

VII. ENVIRONMENTAL ASPECTS OF ENERGY

15. Basic problems of energy and renewable energy

15-1-0-0 Electric energy storage
15-2-0-0 Superconductive materials. Superconductivity. Superconductivity of energy

15-3-0-0 New cycles and schemes for thermotransformers

15-4-0-0 Problems of megapolise illumination

16. Application of helium and special materials in vehicles

Yu.A. Ryjov, Acad. RAS (Russia, Moscow, International Univ. of Engineering) (SEB)

16-1-0-0 Airships to transfer large-sized cargoes

16-2-0-0 Airships to control states of emergency in megapolises: car inspection, fire safety, terrorism combat, technical and ecological state control of industrial buildings and structures. Energy control (heat leak control in buildings on a city's scale)

16-3-0-0 Fire fighting airships, counteracting, and police airships

17. Energy and ecology

O.L. Figovsky (Israel, Israel Research Center Polymate) (IEB)
M.V. Vorobiova (Russia, Moscow, GIREDMET) (IEB)
A.L. Gusev (Russia, Sarov, STC "TATA")

17-1-0-0 Greenhouse gas effect

17-2-0-0 Ecological problems of industrial megapolises

17-3-0-0 Ecology of air atmosphere and space

17-4-0-0 Ecology of water resources

17-5-0-0 Problems of unhealthy atmospheric emissions by heat-electric generating plants

17-6-0-0 Problems of groung pollution by energy carriers

17-7-0-0 Ecological tourism and ecological resorts

17-8-0-0 Problems of factory and domestic waste utilization

18. Energy efficiency methods and facilities for agressive gas mixture separation and purification

A.L. Gusev (Russia, Sarov, STC "TATA")
M.A. Kazaryan (Russia, Moscow, P.N. Lebedev FIAN) (IEB)
A.A. Bobrova (Russia, Sarov, RFNC-VNIIEF)

19. Ecology and power resources of deserts

20. Water, its properties. Water preparation, application

21. Vibration and acoustic effects of energy facilities on the environment

VIII. LEGISLATIVE BASIS, MASS MEDIA, STATE SUPPORT

22. Legislative basis

P.B. Shelishch (Russia, Moscow, RF State Duma, President of National Association of Hydrogen Energy) (IEAB)

22-1-0-0 Legislation basis for renewable energy in Russia

22-2-0-0 Legislation assurance for innovation development of hydrogen energy

22-3-0-0 Legislation basis for renewable energy in CIS

22-4-0-0 Legislation basis for ecology

IX. PERSONNEL MANAGEMENT AND EDUCATION

23. Education and scientific research centres

B.F. Reutov (Russia, Moscow, Federal Agency for Education and Sciences of RF) (IEB)
A.V. Chuvikovskiy (Russia, Sarov, RFNC-VNIIEF) (IEB)
Yu.P. Shcherbak (Russia, Sarov, Sarov Physicotechnical Institute) (IEB)
J.-P. Contzen (Belgium, von Karman Institute for Fluid Dynamics) (IEB)

23-1-0-0 Educational activities in the field of alternative energy and ecology

23-1-1-0 Educational activity within school program

23-1-2-0 Educational activity in institutes of higher education

23-2-0-0 Hydrogen trading estates and science and research cities

23-3-0-0 Young people in alternative energy and ecology science and technology

X. ECONOMIC ASPECTS OF AEE

24. Economical aspects

24-1-0-0 Investment attractiveness of various countries and companies in renewable energy

24-2-0-0 Resources of conventional energy sources in exporting countries and world resources

24-3-0-0 National scientific and technological programmes of the development of hydrogen economy

24-4-0-0 Economical analisys in renewable energy
V.A. Khusnutdinov (Russia, Moscow, RAO UES of Russia) (IEB)

24-5-0-0 Business-planning in renewable energy

XI. INNOVATION SOLUTIONS, TECHNOLOGIES, FACILITIES AND THEIR INNOVATION

25. Nanotechnology for renewable energy

A.L. Gusev (Russia, Sarov, STC "TATA")
V.V. Kursheva (Russia, Sarov, STC "TATA")
O.N. Efimov (Russia, Sarov, STC "TATA")

25-1-0-0 nanotechnology in the metal oxide synthesis and solid oxide fuel cells production

25-2-0-0 Nanotechnology in cell framework manufacturing for medical purposes

25-3-0-0 Radiation-chemical nanotechnology in production of new types fluoropolymer composite materials

26. Innovative solutions in alternative energy and ecology

A.L. Gusev (Russia, Sarov, STC "TATA")

27. Information technologies (IT)

XII. ENVIRONMENTAL VEHICLES

28. Cryogenic and pneumatic vehicles

A.L. Gusev (Russia, Sarov, STC "TATA")

28-1-0-0 Cryogenic nitrogen transport

28-2-0-0 Inert gas-based cryogenic vehicles for hazardous structures: fire engines, air port auxiliary vehicles, fuel and lubricant storage, vehicles in dangerously explosive chemical production

28-3-0-0 Pneumatic vehicles

29. On-board energy accumulators

29-1-0-0 Thermal energy accumulators
A.L. Gusev (Russia, Sarov, STC "TATA")
- **29-1-1-0 Temperature above 273 K**
- **29-1-2-0 Temperature below 273 K**
- **29-1-3-0 Temperature below 77 K**

29-2-0-0 Flywheel energy accumulators

29-3-0-0 Electrical energy accumulators

29-4-0-0 Spring energy accumulators

29-5-0-0 Compressed-air energy accumulators

29-6-0-0 Chemical energy accumulators

30. Multy mode vehicles

A.L. Gusev (Russia, Sarov, STC "TATA")
O.B. Baklitskaya (Russia, Sarov, STC "TATA")
M.A. Kazaryan (Russia, Sarov, STC "TATA")

31. External and onboard vehicle energy recovery systems

A.L. Gusev (Russia, Sarov, STC "TATA")

32. Lithium-ion current sources and supercapacitor

XIII. RECOVERY TECHNIQUES FOR AEE

33. Juvenile hydrogen in geotectonics and geochemistry processes

S.V. Digonskiy (Russia, Ekaterinburg, FGUP "Urangeologo-razvedka") (IEB)
V.L. Syvorotkin (Russia, Moscow, M. V. Lomonosov MSU) (IEB)

33-1-0-0 Role of hydrogen in chemical composition of the universe

33-2-0-0 Diving forces in the evolution of Earth and planets

33-3-0-0 Hydrogen in the Earth's core

33-4-0-0 Geology and geochemistry of natural gases in deep fault areas

33-5-0-0 Transport of juvenile hydrogen through the Earth stratum and formation of electrically charged zones

33-6-0-0 Natural synthesis of carbon-based substances

33-7-0-0 Deep degasifying of the Earth, global disasters and anomalous phenomena

XIV. CATALYSIS FOR AEE

34. Catalysis for renewable energy

Z.R. Ismagilov (Russia, Novosibirsk, Boreskov Institute of Catalysis) (IEB)
S.M. Aldoshin, Acad. RAS (Russia, Chernogolovka, IPCP RAS) (SEB)
V.N. Parmon, Acad. RAS (Russia, Novosibirsk, Boreskov Institute of Catalysis of SD RAS) (SEB)
V.A. Kirillov (Russia, Novosibirsk, Boreskov Institute of Catalysis of SD RAS) (IEB)
O.N. Efimov (Russia, Chernogolovka, IPCP RAS) (IEB)
N.N. Vershinin (Russia, Chernogolovka, IPCP RAS)

34-1-0-0 Catalytic methods for synthesis of alternative fuel

34-2-0-0 Catalysis in combined schemes «energy generation and production of useful products from natural gas»

34-3-0-0 Catalysis in generation of working fluid in gas turbines as an effective alternative flare generation method

34-4-0-0 Catalysis of fuel cells

34-5-0-0 Catalysis in processes of production of synthesis gas and hydrogen

34-6-0-0 Catalytic methods of hydrogen treatment

34-7-0-0 Catalysis in treating of power reactor waste gases

34-8-0-0 Catalysis in process water treatment systems

34-9-0-0 Photocatalytic and electrocatalytic methods for hydrogen production

34-10-0-0 Development and study of material properties to form catalytic layers in fuel cells

34-11-0-0 On mechanism of catalytic action. Effect of metal nature and degree of oxidation thereof on catalytic activity

34-12-0-0 Nanocomposites for application as catalysts. Effect of dimension factor on catalytic activity

34-13-0-0 Alternative catalysts with no platinum

34-14-0-0 Problems of catalyst poisoning

34-15-0-0 Catalyst carriers: design, synthesis, and properties
A.Ya. Vul' (Russia, St. Petersburg, Ioffe Institute)

34-16-0-0 Catalytic layers for fuel cells in planar design

34-17-0-0 Sol-gel process for production of catalysts and catalyst carriers

34-18-0-0 Catalytic conversion of fuel and technologies in the process of membrane production of hydrogen fuel compositions and ultra-pure hydrogen

XV. ENERGY SAVING

35. Energy-saving technologies, materials, systems, and instruments

А.Л. Гусев (Россия, Саров, НТЦ «ТАТА»)

XVI. PROBLEMS OF OIL-AND-GAS COMPLEX

36. Problems of oil, gas, and coal industry

А.Л. Гусев (Россия, Саров, НТЦ «ТАТА»)

36-1-0-0 Problem definition for scientists and engineers to form a Task Order for research and R&D works taking into account ecological aspect

37. Oil and gas pipelines and ecology

XVII. OPTICAL PHENOMENA AND FACILITIES

38. Optical phenomena and facilities

XVIII. GAS-TURBINE TECHNOLOGIES

39. Gas-turbine technologies

XIX. ENVIRONMENTALLY CONSCIOUS FACTORIES

XX. ISSUES OF AGRICULTURE

40-1-0-0 Environmental technology manufacturing of wood products without the synthetic resin binder

XXI. EARTH SCIENCES

XXII. INFORMATION FOR AEE

41. Information

A.I. Salikov (Russia, Moscow, CNIIATOMINFORM) (IEAB)
E.M. Tararaeva (Russia, Moscow, CNIIATOMINFORM) (IEAB)
E.A. Goodilin, Member Corresponding RAS (Russia, Moscow, FMS MSU) (SEB)
I.V. Lobanova (Russia, Sarov, STC "TATA")

41-1-0-0 Review of periodicals
41-2-0-0 Review of leading internet-resources
41-3-0-0 Prominent scientists' biographies
41-4-0-0 Scientific funds and scientific projects
41-5-0-0 International scientific conferences
41-6-0-0 Advertising matters of investment companies and manufacturers
41-7-0-0 Review of new scientific books
41-8-0-0 Intellectual property
41-9-0-0 Encyclopedia of renewable energy. Terms and definitions
41-10-0-0 Opinions, letters in publishing office, short articles
41-11-0-0 Messages of members of Scientific editorial board
41-12-0-0 Energetic companies
41-13-00 News of Editorial board
41-14-0-0 Scientific organizations
41-15-0-0 News

SEB — Scientific Editorial Board
IEB — International Editorial Board
IEAB — International Editorial Advisory Board
EB — Experts Board
IRB — International Reviewers Board