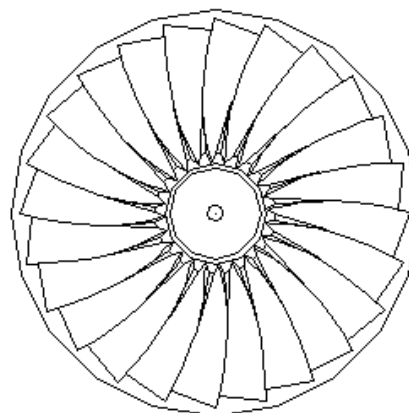
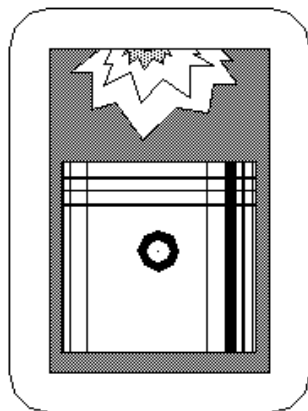


**National Aerospace University «KhAI»  
National Technical University «KhPI»  
State Enterprise « Ivchenko-Progress»  
Scientific and industrial company «FED»  
Petro Mohyla Black Sea State University  
Admiral Makarov National University of Shipbuilding**



**XIX**

**INTERNATIONAL CONGRESS OF  
PROPULSION ENGINEERING**  
*dedicated to 100 anniversary of Chief Designer  
V.A. Lotarev*

**September 14 – 19, 2014**

**Invite letter and program**

**Kharkiv – Mykolaiv – Koblevo – Ukraine**

## WELCOME!

The 2014 Organizing Committee would like to cordially invite you to attend the XIX International Congress of Propulsion Engineering.

The Congress focuses scientific-technical communications, the determination of perspective ways to create and develop new equipment and technologies, finding new opportunities for designing the engines of non-standard schemes and sizes, making business and finding new commercial contacts.

Congress is to be hold at the «VIPOTEL» hotel & «Black Sea» hotel in Koblevo, Mykolaiv Oblast, Ukraine, September 14 – 19, 2014

### Organizing Committee:

- National Aerospace University «KhAI»;
- National Technical University «KhPI»;
- State Enterprise « Ivchenko-Progress»;
- Scientific and industrial company «FED»;
- Petro Mohyla Black Sea State University;
- Admiral Makarov National University of Shipbuilding.

**Languages of the Congress:** Ukrainian, Russian, English.

### Contact persons in Kharkiv, Ukraine:

ALEXANDER BELOGUB

Dr. Eng., Academic Secretary

SERGIY YEPIFANOV

Dr. Eng., Prof.

**E-mail:** a\_belogub@mail.ru.

(057) 788-42-03, 788-43-41

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(057) 788-43-41, 788-47-78

### Regulations:

Report to the plenary session 25 min.

Report to the session 12 min.

Discussion 5 min.

### Available technical facilities:

- PC with projector (Power Point presentations preferred).

**Arrival day:** September 14

**Registration from 9<sup>00</sup> to 20<sup>00</sup>**

**Conference dates:** September 15-18

**Departure day:** September 19

**How to get to the place of event:** Shuttle busses Odessa (railway station) – Koblevo, Mykolaiv (railway station) – Koblevo, Odessa (airport) – Koblevo.

### Organizing Committee strongly recommends to:

- by return tickets beforehand;
- inform the Committee about day and time you plan to arrive to the Congress;
- prepare the poster presentation because of possible changes in sessions schedule (Authors may choose the most convenient format of the poster presentation).

## CHAIRS/COMMITTEE OF THE CONGRESS

**Conference Chair** – Rector of National Aerospace University “KhAI”,  
Dr.Eng., Prof. **V.S. Krivtsov**

**Vice chair** – Rector of Petro Mohyla Black Sea State University  
Dr.Eng., Prof. **L.P. Klimenko**

Chairman – Chief designer of State Enterprise « Ivchenko-Progress», PhD, Assoc. Prof. **I.F. Kravchenko**;

Vice rector of National Technical University «KhPI»,  
Dr.Eng., Prof. **A.P. Marchenko**

**Academic Secretary** – Prof. of National Aerospace University “KhAI”,  
Dr.Eng. **O.V. Belogub**

### Committee:

- PhD Alyokhin S.A. (KhKBD Diesel Engines Design Bureau, Ukraine)
- Dr.Eng., Prof. Ambrozik Andg. (Polytechnica Sventokshyska, Poland)
- Dr.Eng., Prof. Bezruchko K.V. (KhAI University, Ukraine)
- Dr.Eng., Prof. Belogub O.V. (KhAI University, Ukraine)
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- Dr.Eng., Prof. Yepifanov S.V. (KhAI University, Ukraine)
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- Dr.Eng., Prof. Ivaschenko N.A. (MSTU, Russian Federation)
- Dr.Eng., Prof. Kolotnikov M.Y. (“DZHI and RUS” Ltd., Russian Federation)
- Dr.Eng., Prof. Kulik N.S. (NAU, Ukraine)
- NASU Academ. Matsevity Y.M. (IPMash NASU)
- Dr.Eng., Prof. Nozhnitsky Y.A. (CIAM, Russian Federation)
- Dr.Eng., Prof. Parsadanov, I.V. (NTU “KhPI”, Ukraine)
- NASU Cor.Mem. Pilipenko O.V. (Inst. of Technical Mechanics NASU and NCAU, Ukraine)
- RAS., Academ. Petukhov A.N. (CIAM, Russian Federation)
- RAS., Academ. Popov G.A. (“RIAME MAI”, Russian Federation)
- Dr.Eng., Prof. Pylev V.A. (NTU “KhPI”, Ukraine)
- Dr.Eng., Prof. Simbirsky D.F. (KhAI University, Ukraine)
- Dr.Eng., Prof. Stokov A.P. (IPMash NASU, Ukraine )
- Dr.Eng., Prof. Timoshevskiy B.G. ( Admiral Makarov NUS, Ukraine)
- PhD, Assoc. Prof. Fedorchenko D.G. (JSC Kuznetsov, Russian Federation)
- NASU Academ. Halatov A.A. (IET ANSU, Ukraine)
- Dr.Eng., Prof. Chaynov N.D. (MSTU, Russian Federation)

### Stuff Support:

Yepifanov Sergiy V., Dr.Eng., Prof. (057) 788-45-25, (057) 788-43-41, 788-47-78  
Kulyk Tamara V. (057) 788-47-78, (057) 788-45-25  
Boyko Valeriya V. (057) 788-45-25, (057) 788-43-41  
Bozhenenko Tamara A. (057) 788-47-78, (057) 788-43-41  
Talda Kateryna G. (057) 759-05-33

**E-mail: [aedlab@gmail.com](mailto:aedlab@gmail.com)**

# PROGRAM OF CONGRESS

**September 15**

**10<sup>00</sup> – 13<sup>00</sup>**

## PLENARY SESSION

Session Chair: **V.S. Krivtsov, Dr.Eng.** (KhAI, Kharkiv);  
**L.P. Klimenko, Dr.Eng.** (BSSU, Mykolaiv);  
**I.F. Kravchenko, PhD** (SE «Ivchenko-Progress», Zaporizhia);  
**A.P. Marchenko, Dr.Eng.** (NTU «KhPI», Kharkiv)

Academic Secretary: **O.V. Belogub, Dr.Eng.** (KhAI, Kharkiv)

1. **I.F. KRAVCHENKO** (Zaporizhia). **New concepts in designing the engines for trainer and military aircrafts.**
2. **V.E. MAKAROV, V.A. SHORSTOV, T.V. BUYUKLI** (Moscow). **Solving problems of aeroelasticity for propeller blades of turbofans with high bypass ratio.**
3. **V.M. MERKULOV.** (Zaporizhia). **Academician V.A. Lotarev – Chief designer of Ukrainian aircraft engines. Dedicated to 100 anniversary.**
4. **I.V. PARSADANOV** (Kharkiv). **Kharkiv Diesels for agricultural purposes. Dedicated to 100 anniversary of LSDBE chief designer I.A. Koval.**

## Evening Meeting of Section

### GENERAL PROBLEMS OF PROPULSION ENGINEERING

**September 15, 14<sup>00</sup> – 19<sup>00</sup>**

Chairmen: **V.V. Loginov, Dr. Eng** (KhAFU, Kharkov);  
**V.P. Parafeynik, Dr. Eng.** (SKB TKM, Sumy);  
**A.A. Tamargazin, Dr. Eng.** (NAU, Kiev)

Secretary: **S.M. Stepanenko, Ph.D.** (SC “Ivchenko-Progress”, Zaporozhye)

1. **I.F. KRAVCHENKO** (Zaporozhe). **Structural synthesis of fuel system for trainer-combat airplane.**

2. V.V. LOGINOV, V.V. VOITENKO (Kharkov). **Complex method of parametric cast of countenance forming for aircraft power plant.**
3. V.V. LOGINOV, A.N. SOROCHKIN (Kharkov). **Method to estimate the aerial destruction means influence on the aircraft power plant performances.**
4. V.V. LOGINOV, V.V. VOITENKO (Kharkov). **Influence of aircraft power plant maintenance and repairing strategies on efficiency of military aircraft specific tasks execution.**
5. E.Yu. ILENKO (Kharkov). **Approaching estimation of influence of aerodynamic pilotless aircrafts arrangement on radio-location noticeableness.**
6. E.Yu. ILENKO (Kharkov). **Influence of UAVs aerodynamic configuration on radar visibility.**
7. V.V. LOGINOV, E.A. UKRAINETC, I.F. KRAVCHENKO, A.V. YELANSKIY (Kharkov, Zaporozhye). **Comparative analysis of aircraft diesel and gas turbine engines in the system of the light regional aircraft.**
8. A.I. POPUGA, V.V. KOLYADA, A.V. ELANSKY (ZAPOROZHE). **Shaping a reasonable appearance of engine - engine nacelle - aircraft pylon system using computational modeling.**
9. E. MENIAILOV, K. UGRYUMOVA, A. TRONCHUCK, S CHERNYSH (Kharkov). **Formation of technical systems image under uncertainty of the initial data based on artificial intelligence methods.**
10. E. LITOSH, V. DOROSH (Nikolayev). **Conception of application and improvement of hermetic compressor units of ship fir-conditioning and refrigerating equipment.**
11. V.I. RYABKOV, D.V. TINYAKOV (Kharkov). **Dependence of aircraft power plant fuel efficiency on the lifting surface geometrical parameters.**
12. N.I. RADCHENKO, E.V. MAKAROVA (Nikolayev). **Ways of reduction of anthropogenic influence of gas boilers autoclave enterprises production of building materials**
13. A.N. TRUNOV (Nikolayev). **Programming technology effectiveness evaluating.**
14. A.A. TAMARGAZIN, I.I. LINNIK, T.Y. KRAMARENKO, M.V. OLEG (Kiev). **Models and methods for the efficiency analysis of the aircraft engines maintenance logistics.**

15. A.A. ATANASOVA, O.I. VOLOSHYNA, S.M. STEPANENKO (Zaporozhye). **Certification of aeronautical equipment developers.**
16. D.V. BAHTIAROV, V.F. BIRULIN, S.M. STEPANENKO, V.G. KHARCHENKO (Zaporozhye). **Practical aspects of adapting qms of aeronautical equipment development organization to EN 9103 standard.**
17. A.B. TOMASHEVSKIY, G.V. SNIZHNOI, V.V. TULIS (Zaporozhe). **Influence of certification on aviation enterprise products competitiveness.**
18. V.A. DZENZERSKY, S.V. TARASOV, S.V. BURYLOV, Yu.A. ZHULAY, V.Yu. SKOSAR (Dnepropetrovsk). **An industrial energy park for a high-tech branch.**
19. A.P. GOZHYYI, I.A. KALININA, N.Yu. ANDREEVA (Nikolaev). **Resource allocation dynamic planning in the autonomous energetic system.**
20. V.D. PETRENKO (Kharkov). **Adaptive method of forming tasks for student's developmental testing of technical high schools.**
21. I.V. GRYZDO, S.V. ROSSOKHA, I.V. SHOSTAK (Kharkov). **Parallel computing in texts authorship recognition.**
22. I.V. GRYZDO, S.V. ROSSOKHA, I.V. SHOSTAK (Kharkov). **Development of software texts authorship recognition using parallel computing.**
23. I.V. SHOSTAK, M.A. DANOVA (Kharkov). **Approach to complex automation of national foresight projects.**

### **Evening Meeting of Section**

### **DESIGN AND STRENGTH**

**September 15, 14<sup>00</sup> – 19<sup>00</sup>**

Chairmen: **D.F. Simbirskiy, Dr. Eng.** (KhAI, Kharkov);  
**A.A. Khalatov, Dr. Eng.** (IPS, Kiev);  
**M.G. Shulzhenko Dr. Eng.** (IPMach, Kharkov);

Secretary: **R.P. Pridorozhniy, PhD.**  
(SC "Ivchenko-Progress", Zaporozhye)

1. Ye.F. PAROVAY, S.V. FALALEEV (Samara). **Optimization research of segment hydrodynamic bearing characteristics: dependency on shaft eccentricity.**

2. V.I. NAZIN (Kharkov). **Theory of the double-type hydrostatodynamic bearing with elastic positioning of the disc working surface.**
3. V.I. NAZIN (Kharkov). **Test-bed, pilot plant and method of experimental researches of the double-type hydrostatodynamic bearings.**
4. V.I. NAZIN (Kharkov). **About applicability of Newton-Rafson method for pressure determination in the double-type hydrostatodynamic bearings.**
5. A.A. KHALATOV, M.V. BEZLIUDNA, Yu.J. DASHEVSKYY, S.D. SEVERIN, A.S. KOVALENKO (Kiev, Nikolayev). **Numerical simulation of film cooling behinds holes arranged in spherical dimples.**
6. A.A. KHALATOV, N.A. PANCHENKO, I.I. BORISOV, Yu.J. DASHEVSKYY (Kiev, Nikolayev). **Unevenness of double jet film cooling.**
7. A.R. LEPESHKIN, A.N. CTADNIKOV, E.S. RUDENOK (Moskva). **Method for investigation of thermal conductivity and heat transfer in the materials in the field of vibration accelerations**
8. V.G. NESTERENKO, V.V. NESTERENKO, A.A. MATUSHKIN, S.A. MASLAKOV, A. ASADOLLAHI, A. REVANT REDDI (Moskva, Teheran). **Studies and analysis of the effectiveness of air cooling systems of GTE high pressure turbine blades.**
9. V.G. ZARENBIN, N.I. MISCHENKO, V.V. BOGOMOLOV (Dnepropetrovsk, Gorlovka). **Calculation of temperatures at a plural contact in the conditions of the transient friction modes.**
10. A.R. LEPESHKIN, P.A. VAGANOV (Moskva). **Method for calculation of stress-deformation state and strength of GTE aviation working blades in view of in view of conditions of breakage on the different sections at the containment casing tests.**
11. A.O. SHKLOVETS, A.V. URLAPKIN, K.V. BOYAROV (Samara). **Strength lapping of bladed disks of modernized gas pumping unit NK-36ST**
12. V.A. TRUSHIN, A.Yu. CHECHULIN (Ufa). **Methodology of account the rotor thermostressed state influence on small-size centripetal turbine transient behavior.**
13. A.V. LOS (Kiev). **Fatigue life of the joint subassemblies of hinge assemblies at skew-symmetrical loading.**
14. A.V. LOS (Kiev). **Criteria of effective application of antifriction coatings in movable ultimate and skew loaded aircraft units.**

15. A.V. LOS (Kiev). **Effect of skew-symmetrical loading on bending stresses in joint subassemblies of hinge assemblies of airplanes.**
16. V.P. GOLUB (Kiev). **On the solution of the fatigue problems under the biaxial combined loading based on the classical fracture criteria.**
17. D.V. PAVLENKO, G.I. PEJCHEV, V.Ju. KOCJUBA, Ja.Ju. BEJGEL'ZIMER, E.V. KONDRATJUK, D.V. TKACH, S.D. ZILICHIHIS, M.O. GREBENNIKOV, S.O. ULANOV (Zaporozhye, Donetsk). **Operating characteristics improvement of the high-pressure compressor blades made of alloy ЭП718-ИД.**
18. R.P. PRIDOROZHNY, A.V. SHEREMET'YEV, A.P. ZINKOVSKII (Zaporozhye, Kiev). **Numerical estimation of influence of azimuthal crystallographic orientation on strength of single-crystal cooled turbine blades.**
19. A.V. SHEREMET'BEV, R.P. PRIDOROZHNYIY, T.I. PRIBORA (Zaporozhye). **Strength and reliability ensuring of high bypass ratio turbofans**
20. A.N. NEFYODOV (Sumy). **Analysis of radial forces acting rotor of centrifugal compressor of gas-compressor unit with gas turbine drive.**
21. A.S. DANOV (Kharkov). **Research of static and fatigue characteristics of D16AT alloy joints made by VT-16 titanic rivets with restrictive elements at constrained pressing.**
22. T.F. MEDVEDOVSKAYA, I.E. RZHEVSKAYA, K.L. MEDVEDYEVA, V.N. EFIMENKO, O.N. ZELENSKAYA (Kharkov). **Life time of the reversible hydro machine head cover and power pin.**
23. S. VOROBIOV, N. OVCHAROVA, T. BERLIZOVA, S. KULISHOV, A. SKRITSKY (Kharkov, Nikolayev). **Features of temperature and thermoelastic state of GTE monocrystalline cooled blade.**



# September 16

## Morning Meeting of Section

### PISTON COMBUSTION ENGINES

September 16, 9<sup>00</sup> – 13<sup>00</sup>

Chairmen: **A.V. Grytsyuk, Dr. Eng.** (HKBD, Kharkov);  
**V.A. Zhukov, Dr. Eng.** (AMSUMIS, S-t Petersburg)  
**A.P. Marchenko, Dr. Eng.** (KhPI, Kharkov);  
Secretary: **V.V. Pylyov, (NTU «KhPI», Kharkov)**

1. **S.A. ALYOHIN, V.P. GERASIMENKO (Kharkov). Design concept of transport diesel engine.**
2. **F.A. CHAMIDULIN, V.A. SHCHUKIN, F.M. VALIEV, O.V. DUNAY (Kazan). Some space - time characteristics of burning diesel fuel.**
3. **O.K. BEZJUKOV, O.I. YASHENKO (Tutayev, S- Peterburg). Analysis of gas-piston engine's outlook.**
4. **A.V. GRYTSYUK, A.A. OVCHINNIKOV (Kharkov). Selection and background of additional criterion to form an external characteristic of automotive diesel.**
5. **A. MARCHENKO, A. OSETROV, S. KRAVCHENKO (Kharkov). Study and mathematical simulation of the combustion process in the engine with pre-chamber ignition.**
6. **A.A. SIROTA, Yu.G. SHCHERBAK (Nikolayev). Profitability of ship mean-speed diesel with application of small additives of hydrogen to the diesel fuel, working according to the screw characteristics.**
7. **D.S. MINCHEV, U.L. MOSHENTSEV, A.V. NAGIRNYI (Nikolayev). Improvement in the main diesel engines supercharging system for the high-speed hydroplane vessel.**
8. **B.G. TIMOSHEVSKY, M.R. TKACH, A.Y. PROSKURIN, A.S. MITROFANOV, A.S. POZNANSKY (Nikolayev). Performance of two stroke and four cylinder engine with dimension 7,2/6 at work on petrol with additives of synthesis gas.**
9. **F. ABRAMCHUK, O. VRUBLEVSKIY, S. PODLISHCHUK (Kharkov). Ways to improve the effectiveness of ICE as power unit for car HADI-34**

10. B.G. TIMOSHEVSKY, M.R. TKACH, A.Y. PROSKURIN, A.S. MITROFANOV, A.S. POZNANSKY (Nikolayev). **Enhancement the efficiency of exhaust gases thermochemical heat utilization system in 2 cylinder 4-stroke engine of the dimension 7,2/6 which running on ethanol.**
11. M.R. TKACH, B.G. TYMOCHEVSKYY, S.M. DOTSENKO, J.N. HALYNKIN (Nikolayev). **Influence of the energy recuperation on low-grade heat recovery in the metal-hydride installation of continuous operation.**
12. A.A. LISOVAL, M.Ye. NYZHNYK, Yu.A. SVISTUN (Kiev). **Operating characteristics research of gas engine running on the fuels with different content of carbon dioxide.**
13. V.S. VERBOVSKY, I.V. GRITSUK, D.S. ADROV, Z.I. KRASNOKUTSKAYA (Kiev, Donetzk, Kharkov). **Main features of the start process in gas engine when using a thermal battery with phase transitions.**
14. Yu.F. GUTAREVICH, I.V. GRYTSUK (Kiev). **Research of combined heating system in transport vehicle engine when using a thermal battery with phase transitions.**
15. A.P. MARCHENKO, V.V. PYLYOV (Kharkov). **The character of coated piston combustion chamber surface temperature state in the regions of presence of the fuel film.**
16. A. PROKHORENKO (Kharkov). **Mathematical description of combined diesel engine with common rail system as the controlled object.**
17. A.A. PROKHORENKO, I.G. POZHIDAEV (Kharkov). **Mathematical modeling and experiment-calculated research of the common-rail fuel delivery system adjustment in diesel.**
18. A. VRUBLEVSKIY, A. DZYUBENKO, M. LIPINSKIY, A. KUZMENKO, S. PODLESCHUK (Kharkov). **Determination of flow rate in gas engine with electronic control of fuel delivery system.**
19. S.V. LOZNIA, S.O. PUSTOVYI (KIEV). **Hardware and software tools for design and optimization spark ignition internal combustion engine.**
20. N.V. PANASENKO, V.I. PELEPEYCHENKO, N.I. SERGIENKO (Kharkov). **Control principles of diesel generators of a locomotive two-diesel power station in processes of load redistribution between them.**

21. A.F. GOLOVCHUK, Y.I. GABRIEL (Kiev, Lviv). **Universal electronic governor for tractor's diesel.**
22. A. MARCHENKO, ALI ADEL HAMZAH, O-MAR ADEL HAMZAH, D. SAMOILENKO (Kharkov). **Waste heat recovery systems for internal combustion engines: classification and benefits.**
23. I.V. PARSADANOV, I.V. RYKOVA, A.N. MAKLAKOV (Kharkov). **Complex estimation of the effectiveness of exhaust gas recirculation in diesel.**
24. M.R. TKACH, B.G. TYMOCHEVSKYY, S.M. DOTSENKO, J.N. HALYNKIN . (Nikolayev). **Low grade heat recovery from ICE 9G80 ME by the metal-hydride installation of continuous operation.**
25. I.P. VASYLIEV (Lugansk). **Increase efficiency of exhaust gases purification in diesel engine.**
26. A. POLIVJANCHUK, Yu. SHEHOVTZOV, L. ZAIGRAYEV (Lugansk). **Prediction of the state of particulate filter at the different operation modes of diesel engine.**
27. A.N. KONDRATENKO, A.P. STROKOV, S.A. VAMBOL, V. M. SEMIKIN (Kharkov). **Regeneration of diesel particulate matter filters.**
28. A.N. KONDRATENKO, A.P. STROKOV, S.A. VAMBOL, A.N. AVRAMENKO (Kharkov). **Regeneration of diesel particulate matter filter with bulk of natural zeolite.**

### **Morning Meeting of Section**

## **ENGINES AND POWER PLANTS FOR SPACE ROCKET ENGINEERING**

**September 16, 9<sup>00</sup> – 13<sup>00</sup>**

Chairmen: **N.M. Dron', Dr. Eng.** (DNU, Dnepropetrovsk);  
**A.V. Loyan, PhD.** (KhAI, Kharkov)  
 Secretary: **S.Yu. Nesterenko** (KhAI, Kharkov)

1. V.A. ZADONTSEV (Dnipropetrovsk). **Chelomey and engines. Dedicated to 100 anniversary of Chief designer, academician V.N. Chelomey (1914-1984).**

2. N.M. DRON', P.G. HOROLSKY, L.G. DUBOVIK (Dnepropetrovsk). **To one way of space objects withdrawal from low Earth orbits.**
3. M.P. SALO, G.M. IVANITSKI, A.G. NALOTA, A.V. SICHEVOJ (Dnepropetrovsk). **Fuel performance improvement method for LPS of space stages.**
4. N. MASLIANY, A. CHERKUN, A. KHITKO (Dnepropetrovsk). **Estimation of potential of the stationary plasma thruster bunch.**
5. S.A. OGHIIENKO (Kharkov). **Regularities of plasma conductivity in the stationary plasma thruster discharge interval.**
6. O.I. TSAGLOV, S.Yu. NESTERENKO, A.V. LOYAN (Kharkov). **Mechanisms of plasma acceleration in helicon plasma thruster.**
7. A.N. KHAUSTOVA (Kharkov). **Calibration of fiber-optic spectrometer for optical emission spectroscopy method of electric propulsion.**
8. Yu.A. ZHULAY (Dnepropetrovsk). **Refinement of linear mathematical model of cavitation generator of fluid pressure oscillation.**
9. V.Yu. SKOSAR (Dnepropetrovsk). **Possible mechanisms of energy emission in cavitation devices.**
10. N.V. KHORIAK, A.D. NYKOLAYEV, S.I. DOLGOPOLOV (Dnepropetrovsk). **Influence of damping factor of liquid propellant oscillations in tanks on longitudinal vibration of launch vehicle.**
11. V.I. KONOKH, I.I. KALINICHENKO, I.N. GORDIETS, A.V. SHPAK (Dnepropetrovsk). **Influence of pneumo-pump design parameters on its output characteristics at change of orbital liquid propulsion system operating modes.**
12. I.G. BAKHMET (Beijing). **Influence of design parameters on the static characteristic of LRE flow controller.**
13. V.S. REVA, V.P. FROLOV, K.N. ZEMLYANYI (Dnepropetrovsk). **Providing of electric power backup and trouble-free operation of power supply systems intended for the space launch system ground complex.**
14. S.V. SHIRINSKY (Kharkov). **Creation of mathematical models of discharge characteristics of electrochemical accumulators of various types by means of equivalent circuits.**

## Evening Meeting of Section

### THEORY AND OPERATION PROCESSES

September 16, 9<sup>00</sup> – 13<sup>00</sup>

Chairmen: **B.D. Bileka, Dr. Eng.** (ITTPh, Kiev);  
**B.G. Timoshevsky, Dr. Eng.** (NUSh, Nikolayev)  
**M.R. Tkach, Dr. Eng.** (NUSh, Nikolayev)  
Secretary: **I.I. Petukhov, Ph.D.** (KhAI, Kharkov)

1. **A.M. TERESHIN, A.F. CHEVAGIN (Zhukovsky). Researches air inlets high-speed ramjet.**
2. **A.M. TERESHIN (Zhukovsky). Hypersonic ramjet with detonation burning.**
3. **B.D. BILEKA, L.K. GARKUSHA (Kiev). Steam-gas plant with transannular fuel preparation.**
4. **V.P. SOTNIKOV (Yenakijeve) Thermodynamic multi-process of gas compression considering pressure losses due to interim cooling.**
5. **M.R. TKACH, B.G. TYMOCHEVSKYY, S.M. DOTSENKO, J.N. HALYNKIN (Nikolayev, Pervomaysk). Efficiency of heat recovery by metal-hydride installation of continuous operation.**
6. **E. BELOUSOV (Kherson). Waste of fuel separation utilization in ship power plants fuel balance.**
7. **A.V. SMIRNOV, V.P. PARAFEYNIK, S.A. PRILIPKO (Sumy). Methods of thermodynamic analysis of turbo blower stations with aircraft GTEs.**
8. **A.Y. LYSYTSIA, D.A. NEMCHENKO, I.I. PETUKHOV, F.G. SOROGIN (Kharkov, Zaporozhye). On efficiency of GTU cyclic air indirect evaporative cooling.**
9. **A.I. GRETSKOV, V.A. GRIGORYEV, A.O. ZAGREBELNIY, V.M. RAD'KO (Samara) Aerodynamic characteristics estimation of helicopter in the problem of selection parameter values of work gas turbine engine with a free turbine.**
10. **Yu.A. ULITENKO., A.V. YELANSKY, I.F. KRAVCHENKO (Zaporozhye). Upgrading of bypass turbofan engine with afterburner by water injection into air intake duct.**
11. **B.S. MAMEDOV (Zaporozhye). The integrated theory of continuous flow propulsion. New destination and operational principle of "zero" low pressure compressor stage.**
12. **B.S. MAMEDOV (Zaporozhe). The integrated theory of continuous flow propulsion. The reasons of turbo-jet unstable opera-**

- tion during takeoff in hot conditions.**
13. **B.S. MAMEDOV (Zaporozhe). The integrated theory of continuous flow propulsion. Formulation of thrust and flying (thrust) efficiency of turbo jet engines.**
  14. **O.V. KISLOV (Kharkov). Two-parameter characteristics of the GTE gas generator**
  15. **O.V. KISLOV (Kharkov). Peculiarities of converted GTE free turbine operational mode selection.**
  16. **L.G. BOYKO, E.L. KARPENKO, O.V. KISLOV, N.V. PIZHANKOVA (Kharkov). Gas turbine engine operational performances numerical calculation technique based on modelling of gas-dynamic processes in rows of blades.**
  17. **V.A. SHKABURA (Kharkov). Researching of turbine zone and compressor zone of turbo-compressor with common impeller for gas turbine engines.**
  18. **Yu.P. KUKHTIN, V.M. LAPOTKO, A.V. ELANSKY (Zaporozhye). Conjugated numerical modeling of internal and external aerodynamics of engine-airframe system.**
  19. **V.M. LAPOTKO, YU.P. KUKHTIN, G.I. SLYNKO (ZAPOROZHYE). CONJUGATED GAS-DYNAMIC MODEL OF TURBOFAN ENGINE BYPASS AIR DUCT AND NACELLE EXTERIOR.**
  20. **V. KOTKIN (Kharkov). Error estimation approach of numerical computational method of body external resistance in unbounded subsonic airflow.**
  21. **I.P. KVAS, K.S. YEPIFANOV (Kharkov). Friction pressure in evaporator of the spacecraft thermoregulation system two-phase heat loop.**
  22. **E.S. GORACHKIN, G.M. POPOV, V.N. MATVEEV (Samara). Workflow modeling of three stage low pressure compressor of gas turbine engine.**
  23. **V.P. GERASIMENKO, M.Y. SHELKOVSKY, S.A. DMITRIEV (Kharkov, Nikolayev). Aerodynamic improvement of axial compressor.**
  24. **A.V. KOTOV, M.A. SHAROVSKY, M.Y. SHELKOVSKY (Nikolayev). Aerodynamic improvement of radial vaned diffuser of compressor centrifugal stage.**
  25. **M.Y. SHELKOVSKY (Nikolayev). Aerodynamic improvement of axial ten-stage compressor of stationary GTE.**

## Evening Meeting of Section

### DESIGN AND STRENGTH

September 16, 14<sup>00</sup> – 19<sup>00</sup>

Chairmen: **Yu.S. Vorobyov, Dr. Eng.** (IPMash, Kharkov);  
**A.P. Zinkoskiy, Dr. Eng.** (IPS, Kiev);  
**A.V. Sheremetev, PhD.**  
(SC “Ivchenko-Progress”, Zaporozhye);  
Secretary: **A.A. Brunak** (KhAI, Kharkov)

1. O.P. UMANSKYI, O.M. POLIARUS, M.S. UKRAINETZ, O.U. STELMAH, O.V. KUSHCHEV (Kiev). **Investigation of titania, chromia and zirconia wear mechanisms under high temperature friction.**
2. A. UMANSKYI, M. STOROZHENKO, A. TARENTJEV, V. AKOPIAN (Kiev). **Plasma-sprayed coatings of TiB<sub>2</sub>-(Fe-Mo) system.**
3. E. PUHACHEVSKA (Kiev). **Operational characteristics of electric-spark coatings on the base of refractory borides.**
4. Ju.M. KOBZAR (Kiev). **Structural model of brittle fracture materials under compression in long-term creep.**
5. A.V. PLASHCHYNSKA (Kiev). **Analysis of the stress ratio effect on the kinetics of fatigue crack growth**
6. V.E. PANARIN, S.M. ZAKHAROV, O.A. SHMATKO, V.M. KISEL, A.E. TARENTIEV (Kiev). **Plasma coating by the eutectic alloy of quasi-threefold system Fe-TiB<sub>2</sub>-CrB<sub>2</sub>**
7. G.V. SNIZHNOI (Zaporozhe). **Influence of austenitic matrix magnetic state on mechanical properties of steel AISI 321**
8. K.V. VAKULENKO, I.V. BIBLIK, I.B. KAZAK (Kharkov). **Surface damageability during the cavitation erosion of steel 20X13 with coatings.**
9. I.V. BIBLIK (Kharkov). **Computer simulation of residual defectiveness growth during operation of design elements.**
10. D.F. SIMBIRSKIY, A.A. BRUNAK (Kharkov). **The impact of holds in loading cycle on low cycle fatigue resistance of ЖС-6КП alloy.**
11. D.F. SIMBIRSKIY, A.A. BRUNAK. (Kharkov). **ЖС-6КП alloy sensitivity to repetition of continuous static loadings at high temperatures.**
12. Yu.B. NAZARENKO (Moskow). **Avoidance of resonance with**

- rotor's critical revolution frequency in case of elliptic trajectory of bearing shaft axis revolution on support bearing.
13. Yu.B. NAZARENKO, S.A. RODYUK (Moscow). **Parametric resonance low pressure turbine rotor with the appearance of a gap on the landing girdle sock and shaft LPT.**
  14. G.V. LAZUTKIN, K.V. BOYAROV (Samara). **Development of algorithm design unloading and shockproof devices metal rubber dampers.**
  15. A.I. ERMAKOV, A.V. URLAPKIN (Samara). **Research of influence of vibration connectedness of blades to eigenmode of mistuned blade disk.**
  16. V.N. MEL'NICK, V.V. KARACHUN, G.V. BOIKO (Kiev). **The impedance plate in the operational acoustic field of the apparatus**
  17. S.M. KABANNIK, A.L. STEL'MAKH, A.P. ZINKOVSKII (Kiev). **Algorithm for implementing the express-evaluation method to predict the stability of compressor blading against subsonic flutter.**
  18. D.D. ROGALEV (Zaporozhye). **A new method for verification frequency response of dynamic strain amplifier used in strength test.**
  19. Y.A. GUSEV, A.V. BELOGUB, KAMBIZ KAHRAI. (Kharkov). **Deformation transfer analysis in the high-temperature film resistive-strain sensor.**
  20. D.V. DOVGAN, I.Y. GUK (Nikolayev). **Effect of retaining pressure to the natural frequencies of GTE blades.**
  21. A.N. GORBENKO (Kerch). **Influence of inertial anisotropy on the forced oscillations of unbalanced gyroscopic rotor.**
  22. M.G. SHULZHENKO, P.P. GONTAROVSKYI, T.V. PROTASOVA (Kharkov). **Calculation method for transient process in 3D axisymmetric constructions under impulse loading.**
  23. M.G. SHULZHENKO, B.P. ZAJTSEV, A.V. ASAJENOK (Kharkov). **Numerical simulation of dynamic response of structure under impulse impact**
  24. Yu.S. VOROBIOV, M.A. CHUGAY (Kharkov). **Features of vibrations of compressor blade with damages.**
  25. Yu.S. VOROBIEV, N.Iu. OVCHAROVA, P.N. KULAKOV, S.B. KULISHOV, A.N. SKRICKIY (Kharkov, Nikolayev). **Forced vibrations of compressor stages of gas turbine engine in the flow.**
  26. E. MARTSENYUK, A. POTAPOV (Kharkov). **Manufacturing of large capacity polymeric organic glasses.**



# September 17

## Morning Meeting of Section

### AUTOMATIC CONTROL SYSTEMS AND DIAGNOSTICS

September 17, 9<sup>00</sup> – 13<sup>00</sup>

Chairmen: **R.A. Varbanets, Dr. Eng.**; (ONSU, Odessa);  
**S.A. Dmitriev, Dr. Eng.** (NAU, Kiev);  
**S.V. Yepifanov, Dr. Eng.** (KhAI, Kharkov)  
Secretary: **M.V. Shevchenko** (KhAI, Kharkov)

1. **V.I. GOPTAREV      A.P. SHEVTSOV      O.V. DEREVENETS  
V.N. SUSHKOV.** (Voronezh). **New generation of noncontact torque metering units БИКМ М-106М for power units technical state diagnostics.**
2. **A.N. MARKUSHIN, A.V. BAKLANOV** (Kazan). **Test results of measurements of carbon dioxide concentration in the jets of swirl burners.**
3. **Y.P. LESCHENKO** (Kiev). **Robot measurement of geometric parameters by intelligent measuring systems.**
4. **A.G. BURYACHENKO, K.M. SYDYAK, V.V. KONDRATYUK  
V.A. KACHURA** (Odessa, Zaporozhe). **Attestation of software for indirect measurements in gas-turbine engine testing.**
5. **S.V. BABENKO, I.I. KOSTYAN** (Sumy). **Peculiarities of I&C facilities arranging in GTE shelter.**
6. **V.V. UMINSKIY** (Zhitomir). **Algorithm of autonomous mobile robot coordinates optimal estimating based on the differential transformation.**
7. **G.G. KULIKOV, G.I. POGORELOV, B.I. BADAMSHIN,  
A.I. ABDULNAGIMOV** (Ufa). **Method of two-shaft gas turbine neural network model constructing providing structural adequacy.**
8. **O.S. YAKUSHENKO, P.V. KOROLYOV, V.E. MILTSOV,  
O.I. CHUMAK, V.M. OHMAKEVICH** (Kiev). **Identification of aircraft gas turbine engine mathematical model by operational data.**
9. **V.V. PANIN, S.V. ENCPEV, S.O. TAKU** (Kiev). **Synthesizing the neural network model of aircraft engine hydromechnical ACS.**
10. **V.F. MIRGOROD, V.V. DANILOV** (Odessa). **Computable realization of state space mathematical models in Hammershtein form.**

11. Ie.O. KONONYKHIN (Kharkov). **Optimization of turboshaft acceleration control algorithm.**
12. S.V. ENCHEV M.O. OLALI, N.V. OLALI (Kiev). **Assessing the quality of ACS of aircraft engines for identifying its technical state purposes.**
13. LYUDMILA N. POKYDKO (Kiev). **Positioning control algorithms synthesis for deflectors control systems.**
14. V.V. LYUBCHENKO (Kiev). **Data visualization in automated control systems.**
15. V.V. KOROBKO, O.V. KOROBKO, G.V. KONDRATENKO (Mykolayiv). **Fuzzy logic control system of "engine-heat pump" type thermoacoustic thermal machine.**
16. V.V. KOROBKO, A.A. MOSKOVKO (Mykolayiv) **Features of thermoacoustic engine starting with low-temperature thermal energy sources**
17. M.A. TARASENKO, A.I. TARASENKO (Mykolayiv). **Comparative analysis of partial modes for single-shaft and multi-shaft turbine engine with changing ambient temperature.**
18. V.F. MIRGOROD , I.M. GVOZDEVA (Odessa). **Optimal control of piece-linear dynamic systems.**
19. G.S. RANCHENKO, A.G. BURYACHENKO, V.M. GRUDINKIN, N.L. GOLUBEV, V.V. DANILOV (Odessa). **Engine AI-450m regulator – results of development and qualification for category A.**
20. A.V. KULALAYEV, V.V. KULALAEV (Kharkov). **Synthesis of control systems of information channels spatial location while optic-electronic counteraction to tracking and homing systems.**

### **Morning Meeting of Section**

### **PISTON COMBUSTION ENGINES**

**September 17, 9<sup>00</sup> – 13<sup>00</sup>**

Chairmen: **F.I. Abramchuk, Dr. Eng.** (KhNARU, Kharkov);  
**Yu.F. Gutarevich, Dr. of Eng.** (NTU, Kiev);  
**I.V. Parsadanov, Dr. Eng.** (NTU «KhPI», Kharkov);  
 Secretary: **A.A. Zotov** (Vector-ATTRACTION , Kharkov)

1. M.V. VED', N.D. SAKHNENKO, D.S. ANDROSHCHUK, T.P. YAROSHOK (Kharkov). **Active catalytic coating formation on the working surface of combustion chambers of ICE.**

2. V. PYL'OV, O. KLYMENKO, S. OBOZNYJ (Kharkov). **Experimental study of influence of piston thermal state regulation for diesel engine parameters.**
3. A.V. TRINEV, A.P. MOGILNIY, O.M. KULISH (Kharkov). **Simulation of unsteady heat-stress state of exhaust valve in high-speed diesel engine under transient conditions.**
4. V.A. PYL'OV, A.V. BELOGUB, I.A. NESTERENKO, R.R. ARYAN, A.Y. FEDOROV, V.A. KHYZHNIAK (Kharkov). **Improvement of methods of analysis thermostressed state piston.**
5. A.V. BILOGUB, V.A. PYL'OV, A.A. ZOTOV, E.A. GLIBKO (Kharkov). **The ways of modernization in piston-cylinder units of ASh-62 reciprocating engine.**
6. N.M. LUKOV, O.N. ROMASHKOVA, A.S. KOSMODAMIANSKY; G.F. KASHNIKOV (Moskva, Kolomna). **The method of calculation of dynamic characteristics and parameters in locomotive power plant as object of shaft's speed adjustment.**
7. S.A. ALYOHIN, A.N. KOVALENKO, A.N. KOSOVTSSEV, S.V. LYKOV (Kharkov). **Frictionless bearings of the piston head of a connecting rod in high-power two-stroke engines**
8. A.I. YAMANIN, V.A. ZHUKOV (Yaroslavl, S-T Petersburg). **Numerical simulation of vibro-activity of the piston engines with prolonged expansion of working medium.**
9. R. A. VARBANETS, Y. N. KUCHERENKO, V.I.KYRNATS (Odesa). **Analysis of the possibility of vibro diagnostics of marine diesel engines.**
10. A.I. TARASENKO (Nikolayev). **Operation of marine propulsive system with low-speed diesel in ice navigation conditions.**
11. A.I. TARASENKO A.A. TARASENKO (Nikolayev). **Selection of the calculating torsion scheme for the propulsive system on a low speed marine diesel.**
12. V.P. SAVCHUK (Herson). **The analysis of reliability of cylinder liners of engines of the company MAN B&W series S70 and S80MC.**
13. E.K. POSVYATENKO, S.N. LYTVYN, V.G. GONCHAROV (Pervomaysk). **Operation resource increasing in the cylinder-piston group of gas engines.**
14. V.D. ZONOV (Kharkov). **Mathematical model of running-in criterion in the piston-cylinder unit of locomotive diesels engine**

- during factory testing.
15. V.D. ZONOV (Kharkov). **Method of complex estimation of critical condition in high-precision surfaces of fuel system of locomotive diesel engine.**
  16. N.A. TKACHUK, O.V. VERETELNIK, A.V. GRABOWSKI, S.A. KRAVCHENKO, S.Yu. BELIK (Kharkov). **Increase strength and performance characteristics of tribomechanical elements in machine-building designs on the basis of combined methods of hardening of the surface layers.**
  17. N.A. TKACHUK, O.V. VERETELNIK, A.V. GRABOWSKI, S.A. KRAVCHENKO, S.Yu. BELIK (Kharkov). **Numerical simulation of contact interaction in engine parts that was manufactured using combined technology.**
  18. E.M. TAUSENEV, K.V. KOH, A.E. SVISTULA (Barnaul). **Investigation variants within heat insulation of diesel's fuel lines.**
  19. A.B. BOGAEVSKIY, A.V. OSICHEV, M.S. VOYTENKO (Kharkov). **Evaluation of energy consumption during the start of diesel locomotive and battery charging.**
  20. S.A. ALYOHIN, A.V. GRITSUK, F.I. ABRAMCHUK, A.N. VRUBLEVSKIY, A.A. MOTORA, V.P. STRUKOV (Kharkov). **Adaptation of the domestic automobile diesel engine 4DTNA-1 to the engine compartment of the modern wagon.**
  21. L. KLYMEKO, P. REVNYUK, O. PRYSHCHEPOV V. ANDREEV, S. SOLOVYOV (Nikolayev). **Strengthening of units in ICE by ion-plasma and laser technologies**
  22. D.E. OKSEN, E.I. OKSEN (Gorlovka). **A study of the influence of crank-rod pair's technical condition on vibration characteristics of the engine housing.**
  23. P.S. PENZEV, V.I. ALYOKHIN, A.V. GRITSUK, O.V. AKIMOV. (Kharkov). **Engineering modeling of technological processes in the production of cast engine block 4DTNA-1**
  24. V.V. SHPAKOVSKYY (Kharkov). **Resource prolongation of the internal combustion engine by installation of pistons with corundum layer.**
  25. N.I. MISHCHENKO, V.G. ZARENBIN, T.N. KOLESNIKOVA, Y.V. YURCHENKO, V.S. SHLYAHOV, V.L. SUPRUN, D.V. KASIANENKO (Gorlovka, Dnepropetrovsk). **Some results of comparative research of characteristics in non-connecting rod and classical engines.**

26. A.N. RADCHENKO, S.S. RYZKOV, N.I. RADCHENKO, A.V. OSTAPENKO (Nikolayev). **Improved cogeneration reciprocating gas engine module of trigeneration plant for integrated energy supply.**
27. A.P. MARCHENKO, A.V. GRITSUK, V.V. TATKOV, V.K. SAVICH, A.A. MOTORA, A.A. MYLNIKOV, A.S. ZHUKOV (Kharkov). **Implementation of high technologies from small-capacity diesels in the lubricating system of metallurgical equipment.**

### Evening Meeting of Section

### TECHNOLOGY

September 17, 14<sup>00</sup> – 19<sup>00</sup>

Chairmen: **A.I. Dolmatov, Dr. Eng.** (KhAI, Kharkov);  
**N.E. Kalinina, Dr. Eng.** (DGU, Dnepropetrovsk);  
**A.Ya. Kachan Dr. Eng.** (ZNTU, Zaporozhye)

Secretary: **I.O. Ternyuk** (KhAI, Kharkov)

1. V.F. MOZGOVOJ, V.A. PANASENKO K.B. BALUCHOK, M.K. BIRUK (Zaporozhye). **Unification of operating programs of processing turbine engine parts using CNC five-coordinate machine.**
2. , V.A. TITOV, V.F. MOZGOVOY, S.A. UGLANOV. **Technological aspects of quality parameters configuration for load-bearing surfaces of gas-turbine engine compressor shafts.**
3. S.N. PAHOLKA, A.Ya KACHAN, D.V. PAVLENKO (Zaporozhye) **Technology of conical thin-walled turbine engine parts shape formation by explosive stamping.**
4. N.F. SAVCHENKO, V.V. TRETAK, A.V. ONOPCHENKO, S.A. STADNIK (Kharkov, Zaporozhye). **Determining of material utilization factor in stamping and methods to increase its.**
5. T.V. TYKHOMYROVA, S.V. GAYDUK (Zaporozhye). **Research of influence of the tungsten to silicon relation on phase structure and characteristic temperatures of the cobalt alloy by CAL-PHAD method.**
6. A.A. KRAVETS, O.A. KOROGOD, E.I. GORDIENKO, V.G. PROCHAN (Zaporozhye). **Reception of the abradable extra heat resisting covering on turbine compressor spacers by HVOF (High Velocity Oxygen Fuel) method.**

7. Cs.A. BUKATYI (Rybinsk). **Phenomenon of materials and parts temperature characteristics nonlinearity and perspectives of its application in GTE parts manufacturing.**
8. N.E. KALININA, A.E. YUKHYMENKO, V.T. KALININ (Dnepropetrovsk). **An integrated modification of complex-doped heat resistant alloys.**
9. N.Y. KALINICHENKO, S.E. MARKOVICH (Kharkov). **The thermal model to estimate temperature fields in near-surface layers of parts that are machined by planetary grinding technology.**
10. A.A. KABATOV, A.P. HARITONYUK, Yu.V. CHERNIY (Kharkov). **Analysis and optimization of diamond smoothing technology for engine parts made of stainless steel.**
11. I.A. PETRIC, A.G. SELIVERSTOV, A.V. OVCHINNIKOV (Zaporozhye). **Properties improvement of welding joints of rotor parts made of titanium alloys.**
12. A. OVCHINNIKOV (Zaporozhye). **Aircraft engine parts made from titanium alloys repairing using welding methods with sub-microcrystal adding materials.**
13. A. A. KOLOS (Kharkov). **The ultrasound clearing in freon compositions.**
14. V.F. SOROKIN, I.O. TERNYUK (Kharkov). **Calculation of the productivity of the machining processes of gas turbine engine's compressor and turbine blisks.**
15. V.F. SOROKIN, V.V. KOMBAROV, I.A. TERNYUK (Kharkov). **Stabilization of contour feedrate for the spline interpolator CNC system by high-speed processing criterion.**
16. V.F. SOROKIN, N.V. MUHA (Kharkov). **Designing the control programs for multipurpose NC workstation tool to machine casings of aircraft engine accessories.**
17. V.V. TRETYAK, S.A. STADNIK, A.V. ONOPCHENKO, T.G. ZEYNIEV (Kharkov, Zaporozhye). **Algorithm of adjustment of parameters of the impulsive stamping of sheet details and its program realization taking into account the experimentally approved technology.**
18. V.V. TRETYAK, A.I. DOLMATOV, A.S. FEDOROVA, S.V. BREUS (Kharkov). **Development of educational program complex for computation of impulse volumetric stamping parameters.**

19. V.V. TRETAYAK (Kharkov). **Possibilities and realization of objective approach for decision of invention tasks using method of non-prototype designing in impulse technology.**
20. V.V. TRETAYAK, S.V. HUDYAKOV, V.D. SOTNIKOV, I.V. SKORCHENKO (Kharkov). **Features of of impulsive stamping technology planning using knowledge base.**
21. Yu.A. NEVESHKIN, V.V. TRETAYAK, S.V. GAJDUK, V.Yu. LADIMYRYCH (Kharkov) **Analysis of parameters of the stamping process for volumetric parts of aircraft engines using software DEFORM.**

### **Evening Meeting of Section**

### **THEORY AND OPERATION PROCESSES**

**September 17, 14<sup>00</sup> – 19<sup>00</sup>**

Chairmen: **A.V. Rusanov, Dr. Eng.** (IPMash, Kharkov);  
**V.I. Ryabkov, Dr. Eng.** (KhAI, Kharkov);  
**S.I. Serbin, Dr. Eng.** (NUSh, Nikolayev)

Secretary: **V.V. Voitenko** (KhUAF, Kharkov)

1. L. BOYKO, A. DYOMIN, Yu. MAXIMOV, Yu. AHTEMENKO, V. KALUGNAIA (Kharkov Zaporozhye). **GTE multistage axial compressor summary characteristic and flow features analysis.**
2. L. BOYKO, A. DYOMIN, Yu. MAXIMOV, Yu. AHTEMENKO (Kharkov Zaporozhye). **Flow calculation research of turboshaft driven GTE multistage axial compressor at partial-load modes.**
3. L. BOYKO, A. DYOMIN, H. KARPENKO, Yu. AHTEMENKO (Kharkov, Zaporozhye). **Method improvement of multistage axial compressor mass average parameters calculation.**
4. L. BOYKO, A. DYOMIN, S. DMITRIEV (Харьков). **Sub- trans- and supersonic flow cascades researching using «virtual test bench».**
5. L. BOYKO, K. FESENKO (Kharkov). **Centrifugal superchargers stages thermo-gas-dynamical parameters improvement.**
6. H. BARYSHEVA (Kharkov). **Calculation performance of the compressor centrifugal stage with axial-radial impeller for weight average parameters.**
7. L. BOYKO, H. BARYSHEVA, A. DEMIN, O. DRYNOV (Kharkov, Zaporozhye). **Flow investigation in aircraft engine axial-centrifugal compressor.**

8. F. MOHAMMADSADEGHI (Kharkov). **Simulation of stalling and unsteady operating modes of axial compressor stage for pre-stall state detecting.**
9. M.L. ZHYVYRIKHIN, V.S. CHYGRYN (Kharkov). **Numerical simulation of centrifugal compressor stage off-design behavior.**
10. V.A. GRIGORIEV, D.S. KALABUHOV, V.M. RAD'KO (Samara). **Methods of gas turbine's characteristics generalization and representation.**
11. E.S. GORACHKIN, G.M. POPOV, V.N. MATVEEV (Samara). **Workflow modeling of gas turbine engine three stage low pressure compressor.**
12. O.V. KISLOV, N.V. PIZHANKOVA (Kharkov). **Axial turbine duct cooling influence on its gas-dynamic performances.**
13. A.V. RUSANOV, A.I. KOSIANOVA, D.Yu. KOSIANOV (Kharkov). **Research of stream flow structure in regulative compartment of the HPC of steam turbine K-325-23,5.**
14. M.Z. ABDULIN, O.A. SIRYI, A.M. ZHUCHENKO (Kiev). **Principles of working process organization of combustion chambers.**
15. I.F. KRAVCHENKO, V.N. ZHURAVLEV, S.A. BORZOV, A.V. PAPCHONKOV (Zaporozhye). **Mathematical models of energetic effectiveness for combustion chamber unit of gas turbine engine.**
16. S.I. SERBIN, N.A. GONCHAROVA (Nikolayev). **The features of the workflow of GTE combustor running on syngas with a different composition**
17. S.I. SERBIN, A.B. MOSTIPANENKO, A.V. KOZLOVSKY, V.V. VILKUL (Nikolayev). **Suppressing methods of the pulsation burning in gaseous fuels gas turbine combustion chamber.**
18. V.A. BOGUSLAEV, A.I. DOLMATOV, D.A. DOLMATOV, A.V. KUKURUDZA (Zaporozhye, Kharkov). **Propagation anisotropy of electromagnetic stimulation in the reacting moving domain.**
19. D.A. DOLMATOV, MASOUD HAJIVAND (Kharkov). **Numerical simulation of heterogeneous composition combustion at additional stimulation.**
20. D.A. DOLMATOV (Kharkov). **Generation, expansion and decay of anomalous exciting reaction in the stoichiometric butane-air flame.**
21. D.A. DOLMATOV A.V. KUKURUDZA MASOUD HAJIVAND K.V. FESENKO (Kharkiv). **The interaction of lean heterogeneous flames of different temperatures.**



22. D.A. DOLMATOV (Kharkiv). **The peculiarities of modeling the combustion of polyvariant split-up heavy hydrocarbons.**
23. MASOUD HAJIVAND (Kharkov). **Numerical simulation of effect of inlet-air velocity on the formation of oxides of nitrogen in a non-premixed methane-air combustion.**
24. A.N. RADCHENKO, RAMZI EL GERBI (Nikolayev). **Recuperative GTE intake air cooling by absorption and ejector waste heat recovery chillers.**
25. A.N. RADCHENKO, RAMZI EL GERBI (Nikolayev). **Recuperative GTE intake air two-stage cooling by cascade absorption-ejector waste heat recovery chiller.**
26. A.A. MORVA, E.I. TRUSHLYAKOV, F.A. CHEGRINZEV (Nikolayev). **Regulation of centrifugal compressor by the channel diffuser with the rotary disc.**
27. A.A. TROPINA, A.P. KUZMENKO, D.V. VILCHINSKY (Kharkov). **Ignition system on the basis of the nanosecond pulsed discharge.**

## September 18

### Morning Meeting of Section

#### AUTOMATIC CONTROL SYSTEMS AND DIAGNOSTICS

September 18, 9<sup>00</sup> – 13<sup>00</sup>

Chairmen: **V.P. Ischuk PhD.** (ANTONOV Co);  
**V.V. Panin, Dr. Eng.** (KSMAN, Kiev);  
**A.N. Reva, Dr. Eng.** (NAU, Kiev);  
 Secretary: **S.V. Loznya, PhD.** («Cortis» LLC, Kiev)

1. S.O. DMYTRIEV, V.I. BURLAKOV, O.V. POPOV, D.V. POPOV (Kiev) **Aircrafts and aircraft engines maintenance procedures formalization and optimal programs determination.**
2. O. YAKUSHENKO, P. VLASENKO (Kiev). **Using of improved maintenance quality rate for choosing the most optimal repairing companies.**
3. P.Sh. MUKHTAROV (Baku). **Basic dominants in making decisions by air traffic controller during estimating of utility-safety norm for air space echeloning.**

4. A.H. REVA, P.Sh. MUKHTAROV, B.M. MIRZAYEV  
V.I. VDOVICHENKO Sh.Sh. NASIROV (Baku, Kiev,  
Novosibirsk). **Steadiness of main dominant of making decisions  
by air traffic controller in risk conditions.**
5. O.M. REVA S.P. BORSUK, V.A. SHYLGIN (Kiev, Kirovograd).  
**Ultimate risk levels determination at norms of air space flight  
levels violation.**
6. I.M. USTIMENKO (Krasnoyarsk). **Information cybernetic model  
of organizational air navigation structures.**
7. A.S. GOLTSOV, A.V. SAVCHITS, O.V. ZUYEVA. (Volzhskiy).  
**Diagnostics of technical condition of the main spool and servo-  
motor opening of wicket gate hydrounit.**
8. P.Sh. ABDULLAYEV, A.J. MIRZOYEV (Baku). **Application of  
the Dempster-Shafer theory on fusion of the aviation gas tur-  
bine engines' health information.**
9. E.P. NECHIPORUK, A.V. POPOV (Kiev) . **Logical-linguistic ex-  
perimental model for complex systems diagnosing.**
10. Y.V. PEPA (Kiev). **Recognition of random signals based on spec-  
tral measures.**
11. V.F. MIRGOROD E.V. DERENG (Odessa, Kiev). **Confidential in-  
tervals assessment of trend components of temporary ranks.**
12. V.F. MIRGOROD E.V. DERENG (Odessa, Kiev). **Behavior prog-  
nosis of time series in problems of GTE technical state estima-  
tion.**
13. V.Ye. STRILETS, M.L. UGRYUMOV, I.A. TROFIMOVA,  
S.A. VAMBOL (Kharkov). **Turbine engine technical state diagno-  
sis problems solving methodology under uncertainty inputs.**
14. S.V. YEPIFANOV, B.A. SCHERBAN, A.V. TOVSTIK,  
T.V. KULIK, N.D. BAGAUTDINOV, Y.V. CHERKASOV (Khar-  
kov Zaporozhe). **Turbofan technical condition control by on-  
ground automated parametric diagnosing complex.**
15. A.V. PAPCHONKOV, S.A. BORZOV (Zaporozhye). **Adequacy  
analysis of traditional methods of gas turbine engine parts life-  
time diagnosing.**
16. R.Kh. MAKAYEVA, A.Kh. KARIMOV, A.M. TZAREVA,  
B.P. GAIFULLIN (Kazan). **Non-destructive testing of GTE tur-  
bine blades overheating using Holographic interferometry  
method.**

17. V.O. POVGORODNY (Kharkov). **System of the power equipment diagnostics**
18. V.N. ZHURAVLEV, A.V. PAPCHONKOV, S.A. BORZOV (Zaporozhye). **Methodical adequacy of Fourier model in the technical diagnostics of gas turbine engine reduction gears.**
19. V.V. PANIN, S.V. ENCHEV, S.S. TOVKACH (Kiev). **Wavelet-diagnostics of gas turbine engine elements vibration state.**
20. I.O. IGUMENTSEV, O.O. PROKOPENKO (Kharkov). **Charged gyroscope movement model.**

## **PLENARY MEETING**

**September 18, 18<sup>00</sup> – 19<sup>00</sup>**

- **Information of Sections Chairmen on the work results.**
- **Consideration of work results of the XIX-th International Congress of Propulsion Engineering.**
- **Approval of the Congress decision.**

**Close  
of the XIX -th International Congress of Propulsion Engineering.**