Dedicated to the 110th Anniversary of General Designer A.G. Ivchenko

National Aerospace University “KhAI”
National Technical University “KhPI”
SE “Ivchenko-Progress”
PJSC “AVTRAMAT”

XVIII INTERNATIONAL CONGRESS OF PROPULSION ENGINEERING

September 14-19, 2013

Invitation and Program

Kharkov – Rybachye – Ukraine
DEAR COLLEAGUE,

Standing Program Committee invites you to participate in the work of XVIII-th International Congress of Propulsion Engineering.

The Congress goals are an exchange of scientific and engineering information, determination of perspectives for creation and development of new equipment and technologies, discovery of new approaches for creation of engines of untraditional design and dimensions, establishment of business contacts and commercial connections.

Congress is held on September 14 to 19, 2012 in the Sporting and Health-Improving Camp “Ikar” (Rybachye settlement, Crimea Republic) of Zhukovsky National Aerospace University “KhAI”.

CONGRESS ORGANIZERS:
- Zhukovsky National Aerospace University “KhAI”;
- National Technical University “KhPI”;
- National Enterprise “Progress” Zaporozhye Machine Building Design Bureau Ivchenko;
- PJSC “AVTRAMAT”

Congress work languages: Ukrainian, Russian, English.

Telephones for contacts in Kharkov:
Alexander BELOGUB, Dr. of Eng., Academic Secretary +38 (057) 759-05-33, +38 (057) 759-06-16
Sergey YEPIFANOV, Dr. of Eng. +38 (057) 19-05-40, +38 (057) 788-43-41,
E-mail: kb_pist@avtramat.com
E-mail: aedlab@gmail.com

Time-limits:
Report at Plenary Meeting 25 min.
Report at Section Meeting 12 min.
Discussions note 5 min.

Facilities:
Computer with digital projector (Power Point is recommended).

Arrival of Congress Participants: September 14
Registration from 9:00 to 20:00
Work days: September 15-18
Departure of Participants: September 19

Information for Participants: 1) Arrival from your country to Simferopol (capital of Crimea) – by airplane, or from your country to Kiev (capital of Ukraine) or Kharkov – by airplane; from Kiev or Kharkov to Simferopol – by airplane or by train; 2) taxi from Simferopol airport or railway station to Rybachye or bus from Simferopol railway station to Rybachye.

Organization Committee asks Congress Participants:
- To book tickets for return way beforehand;
- To inform about the date and time of your arrival;
- To prepare stand reports (in the author’s format) taking into account possible changes in time-limits.
ORGANIZATIONAL PROGRAM COMMITTEE

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Vice-Chairmans – Pro-rector of National Technical University «KhPI», Dr. Eng., Prof. A.P. Marchenko; Chief Designer of “Ivchenko-Progress” State Enterprise PhD, Ass. Prof. I.F. Kravchenko;
Academic Secretary – Technical Director of PJSC «AVTRAMAT», Dr. Eng., Ass. Prof. A.V. Belogub

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- Dr. Eng., Prof. Vorobyov Yu.S. (IPMash NASU)
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- Dr. Eng., Prof. Yepifanov S.V. («KhAI» University, Ukraine)
- Dr. Eng., Prof. Yershov S.V. (IPMach NASU)

Workgroup:

Yepifanov Sergey V., Dr. Eng., Prof. +38(057) 719-05-40, 788-43-41, 788-47-78
Kulyk Tamara V. +38(057) 788-47-78, 719-05-40
Boyko Valeriy V. +38(057) 788-43-41, 719-05-40
Bozhnenko Tamara A. +38(057) 788-47-78, 788-43-41
Talda Kateryna G. +38(057) 759-05-33, 759-06-16

E-mail: aedlab@gmail.com
CONGRESS WORK PROGRAM

September 15
10 00 – 13 00

PLENARY MEETING

Chairmen: I.F. Kravchenko, Ph.D.
(SC “Ivchenko-Progress”, Zaporozhye);
V.S. Krivtsov, Dr. Eng. (KhAI, Kharkov);
A.P. Marchenko, Dr. Eng. (KhPI, Kharkov);
Yu.M. Matsevity, Dr. Eng.
(IPMash NAS Ukraine, Kharkov)

Secretary: A.V. Belogub, Dr. Eng. (PJSC “AVTRAMAT”, Kharkov)

1. I.F. KRAVCHENKO (Zaporozhye). 110 YEARS FROM GENERAL DESIGNER A.G. IVCHENKO BIRTHDAY
2. A.V. GAYDACHUK (Kharkov). REMARKABLE DATES AND EVENTS OF PROPULSION ENGINEERING
4. V.T. SHEPEL (Rybinsk). PROBLEMS OF GTE CERTIFICATION TESTS
5. YU. VOROBOYOV (Kharkiv). KHAI-ERA –INTEGRATE THE NATIONAL AEROSPACE UNIVERSITY (KHAI) INTO ERA. REVIEW OF PROJECT.

Evening Meeting of Section
GENERAL PROBLEMS OF PROPULSION ENGINEERING

September 15, 14:00 – 19:00

Chairmen: V.P. Ischiuk, Ph.D. (SE “ANTONOV”, Kiev); V.V. Loginov, Dr. Eng (KhAFU, Kharkov); V.P. Parafeynik, Dr. Eng. (SKB TKM, Sumy)

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

1. M.A. KIRICHKO, A.V. YELANSKY, I.F KRAVCHENKO. (Zaporozhye). DEVELOPING A SMALL-SIZE FAMILY OF GAS TURBINE ENGINE BASED ON SINGLE CORE

2. V.V. GRIGORIEV, A.V. YELANSKYI, A.I. POPUGA (Zaporozhye). PROMISING SCHEMES OF AIRCRAFT ENGINES WITH HIGH FUEL EFFICIENCY


4. V.I. RODITELEV, V.G. NESTERENKO (Moscow). CONSTRUCTIVE WAY TO LOWER LIFE CYCLE COST OF MODERN AND ADVANCED AIR PROPULSION ENGINE

5. Y. GIRKA, I. GANGAN, Yu. KRASHANITSA (Kharkov). AERODYNAMIC CHARACTERISTIC OF ENGINE BASED AT COANDA EFFECT

6. A.N. SOROCHKIN, V.V. LOGINOV, A.V. YELANSKYI (Kharkov, Zaporozhye). ANALYSIS OF WAYS TO CARRY OUT MODERNIZATION OF ATTACK AIRCRAFT SU-25 IN ORDER TO IMPROVE ITS OPERATING PERFORMANCE


8. V.V. LOGINOV (Kharkov). MUTUAL RELATIONSHIP BETWEEN GENERATIONS FIGHTER AIRCRAFT, AIRCRAFT WEAPONS AND THE LEVEL OF SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT AIRCRAFT ENGINES

9. V.V. VOITENKO V.V. LOGINOV (Kharkov). LIFE CYCLE ASSESSMENT ENGINE PROPULSION SYSTEM OF THE AIRCRAFT FOR MILITARY PURPOSES
10. S.A. ALYOKHIN, G.K. POPOV (Kharkov). AUXILIARY POWER UNITS OF VEHICLES AND PROSPECTS OF THEIR DEVELOPMENT

11. V.N. GOLOSCHAPOV, YU.P. ANTIPTSEV, O.V. KOTULSKAYA, T.N. PARAMONOVA (Kharkov). THE DEVELOPMENT OF PEAK POWER ON BASE OF OPERATING UNITS OF TPS

12. V.G. NESTERENKO, N.N. SIROTIN, A.A. AGULNIK, Y.A. RAVIKOVITCH (Moscow). COMPREHENSIVE TRAINING OF UNIVERSITY STUDENTS IN «AIRCRAFT ENGINES AND POWER PLANTS»

13. V.P. MOGILNIKOV, A.V. IONOY (Zhukovsky). AIR QUALITY FLIGHT RESEARCH METHODS, BLEED AIR FROM ENGINES FOR AIRCRAFT AIR SYSTEM

14. V.P. MOGILNIKOV, A.V. IONOY (Zhukovsky). EQUIPMENT FOR AIR SAMPLING FROM ENGINE

15. Y.P. VASILEV, M.V. PAVLOVA, V.T. SHEPEL (Moscow, Rybinsk). METHOD OF FIRE CERTIFICATION TEST OF AIRCRAFT ENGINEPIPES

16. N.V. OSADCHII, A.A. SERGEEV, V.T. SHEPEL (Rybinsk). THE ASSURANCE OF CERTIFICATION REQUIREMENTS SHOWN TO THE TURBOFAN ENGINE FAN CASE

17. G.V. SNIZHNOI, A.B. TOMASHEVSKIY, V.S. TEROSHINA (Zaporozhye). CERTIFICATION AND QUALITY OF AIRCRAFT ENTERPRISE

18. S.M. STEPANENKO (Zaporozhye). ITEMS OF PROJECT MANAGEMENT STANDARTIZATION ACCORDING TO APU-21 AVIATION REGULATIONS

19. S.M. STEPANENKO, A.A. TEVS, V.G. KHARCHENKO (Zaporozhye). ESTIMATION OF QMS PROCESSES EFFECTIVENESS OF COMPANIES INVOLVED IN DESIGN OF AVIATION PRODUCTS

20. M.A. DANOV A (Kharkov). METHODS OF SELECTION PRIORITIES FOR FORECASTING THE SCIENTIFIC AND TECHNICAL DEVELOPMENT OF LARGE-SCALE OBJECTS ON THE BASIS OF TECHNOLOGY FORESIGHT

21. M.A. DANOV A (Kharkov). SYNTHESIS MODEL SELECTION OF PRIORITIES FOR PREDICTING THE SCIENTIFIC AND TECHNICAL DEVELOPMENT USING TECHNOLOGY FORESIGHT

22. I.B. TURKIN S.N. STARIKOV I.V. SHOSTAK (Kharkov). THE TECHNOLOGY OF STANDARD PROFILE FORMATION WHICH SERVES TO CERTIFICATE THE SOFTWARE SYSTEMS
23. A.S. DANOV (Kharkov). INFORMATION - ENERGY APPROACH TO PROJECTION PROBLEM


25. I.I. BUTENKO (Kharkov). METHOD MACHINE PROCESSING LANGUAGE UNITS IN THE CLASS «LANGUAGE SOFTWARE STANDARDS»

Evening Meeting of Section

DESIGN AND STRENGTH

September 15, 14 00 – 19 00

Chairmen: A.L. Mihaylov, Dr.Eng. (JSC “Saturn”, Rybynsk)
A.N. Petuhov, Dr. Eng. (CIAM, Moscow);
D.F. Simbirskiy, Dr. Eng. (“KhAI”, Kharkov)

Secretary: A. Mihalkin (SC “Ivchenko-Progress”, Zaporozhye)

1. A. MIHALKIN (Zaporozhye). THE FAN BLADES OF PERSPECTIVE TURBOJETS

2. A.V. SALNIKOV (Moscow). GAS-TURBINE ENGINE IMPELLER UNIT’S DESIGN-STRESS MULTICRITERION OPTIMIZATION

3. Ye.F. PAROVAY (Samara). GTE FREE TURBINE WITH SLIDE BEARINGS

4. Ye.F. PAROVAY, F.V. PAROVAY (Samara). HYDRODYNAMIC BEARING WITH MR ELASTIC SUSPENSION OF SEGMENTS

5. V.F. SHATOKHIN, S.D. TSIMMERMAN (Kaluga). EFFECTS OF TURBOGENERATOR PROTECTION SYSTEM SPEED CAPABILITIES ON THE DEVELOPMENT OF THE ROTOR ROLL OVER THE STATOR

6. V.I. NAZIN (Kharkov). THEORY OF DOUBLE RADIAL BEARING IN GIDROSTATODINAMICHESKOGO STATIONARY EXTERNAL LOAD

7. V.I. NAZIN (Kharkov). MATHEMATICAL MODEL DOUBLE ANGULAR CONTACT HYDROSTATIC BEARINGS

8. V.M. ANANYEV, D.V. KALININ, E.V. KOZHARINOV (Moscow). IMPROVING METHODS OF TURBOFAN GEARBOX DESIGN

9. D.V. KALININ, V.M. ANANYEV, E.V. KOZHARINOV (Moscow). EXPERIMENT-CALCULATED STRESS ANALYSIS OF STRESS RAISERS IN ROTOR SHAFT OF HELICOPTERS
10. N.S. SYCHEVA, S.A. RODYUK (Moscow). NEW APPROACH FOR DESIGNING AND TESTING AN OIL TANK OF A HIGHLY MANUVERING AIR VEHICLE ENGINE

11. M.A. SHCHERBAKOV (Moscow). EXPERIMENTAL AND NUMERICAL DETERMINATION OF THERMAL STATE OF TURBINE BLADE


13. I.F. KRAVCHENKO, A.V. SHEREMETEV, A.V. YAKOVENKO (Zaporozhe). DEVELOPMENT MANAGEMENT METHOD IMPROVEMENT FOR CTF ENGINE


17. A.O. SHKLOVETS, G.M. POPOV, D.A. KOLMAKOVA (Samara). OPTIMIZATION OF THE COMPRESSOR STAGE BLADING OF GAS TURBINE ENGINE TO ENSURE THE DYNAMIC STRENGTH IN ROTOR BLADE ROW


19. V.P. GOLUB (Kiev). THE METHOD OF THE FATIGUE LIFE-TIME CALCULATION OF STRUCTURAL COMPONENTS UNDER BIAXIAL COMBINED LOADING

20. D.F. SIMBIRSKII, A.A. BRUNAK (Kharkov). MODEL ANALYSES OF HOLD IMPACT IN THE CYCLE ON THE MATERIAL RESISTANCE TO THE LOW-CYCLE FATIGUE USING LAWS OF REPEATED-STATIC LOADING
Evening Meeting of Section

ENGINES AND POWER PLANTS FOR SPACE ROCKET ENGINEERING

September 15, 16\(^{\text{th}}\) – 19\(^{\text{th}}\)

Chairmen: N.M. Dron, Dr. Eng. (DNU, Dnepropetrovsk);
            K.V. Bezruchko, Dr. Eng. (“KhAI”, Kharkov);
            O.V. Pilipenko, Dr. Eng. (ITM, Dnepropetrovsk)
Secretary: A.O. Davidov, Dr. Eng. (“KhAI”, Kharkov)

1. V.A. ZADONTSEV (Dnepropetrovsk). HERO OF SOCIALISTIC LABOR IVAN IVANOVYCH IVANOV (1918-1999) – THE FIRST CHIEF DESIGNER OF ENGINE DESIGN OFFICE KB-4 OF OKB-586/ YUZHNOSY DESIGN BUREAU

2. N.M. DRON, P.G. HOROLSKY, L.G. DUBOVIK (Dnepropetrovsk). FORECASTING OF CHARACTERISTICS OF THE SPECIALIZED SPACECRAFT FOR THE GATHERING SMALL SPACE DEBRIS

3. S.I. KUSHNIRENKO, V.Y. SHEVTSOV (Dnepropetrovsk). POSSIBILITY ANALYSIS OF USING DIFFERENT KINDS OF THE SPACECRAFT PROPULSION SYSTEMS FOR STRUGGLE AGAINST POLLUTION OF OUTER SPACE

4. V.I. KONOKH, I.I. KALINICHEVO, I.N. GORDIETS, I.Y. KUKSA, A.V. SHPAK (Dnepropetrovsk). CREATION OF HYDRAULIC POWER SYSTEM WITH A PNEUMATIC PISTON ACTUATOR FOR THRUST VECTOR CONTROL SYSTEMS

5. A.N. KOVALENKO, Y.V. BLISHUN (Dnepropetrovsk). METHODOLOGICAL FEATURES OF PREPARATION AND TESTING THE OPERABILITY OF HIGH-ALTITUDE LRE WITH FREE GAS INJECTION BLOWDOWN PROPULSION


7. E.V. MOISEEVA (Kharkov). THE USE OF GENETIC ALGORITHM TO DETERMINE THE OPTIMAL VARIANTS OF NOZZLES

8. R.U. KRIVSYN, I. B. BESKROVNIY, V.G. KOROLYOV (Dnepropetrovsk). DESIGN IMPROVEMENT FOR SPECIAL EQUIPMENT OF SOLID ROCKET MOTOR TEST

9. S.A. OGHIEENKO (Kharkov). MICROWAVE RANGE RADIATION OF STATIONARY PLASMA THRUSTER AS RESULT OF TRANSFORMATION OF WAVES IN DISCHARGE INTERVAL PLASMA
10. A.V. LOYAN, E.P. SOLONYNKO (Kharkov). **V-A CHARACTERISTIC CALCULATION OF DIODE GAP IN A SINGLE IMPULSE DURING TESTS OF EMITTERS FOR ELECTRIC PROPULSION**

11. A.I. TSAGLOV, A.V. LOYAN, T.A. MAKSIMENKO, O.P. RYBALOV (Kharkov). **OUTER MAGNETIC FIELD CONFIGURATION OF LOW POWER HELICON PLASMA THRUSTER**

12. T.A. MAKSYMENKO, A.V. LOYAN, O.P. RYBALOV (Kharkov). **INVESTIGATIONS OF INTEGRAL CHARACTERISTICS OF SMALL SPT WITH DISCHARGE CHAMBER MADE OF BN COMPOSITIONS**

13. A.I. TSAGLOV, A.V. LOYAN, E.P. SOLONINKO (Kharkov). **REDUCTION OF TEST SAMPLE SURFACE TEMPERATURE NONUNIFORMITY DURING ELECTRIC PROPULSION CATHODE’S EMITTERS TESTING**

14. A.V. LOYAN, M.Y. TITOV, E.P. SOLONYNKO (Kharkov). **ELECTRIC FIELD HETEROGENEITY MINIMIZATION DURING TESTS OF EMITTERS IN ELECTRIC PROPULSION CATHODES**

15. A.V. LOYAN, M.U. TITOV, E.P. SOLONINKO (Kharkov). **SETTLEMENT WAY OF DETERMINATION OF EFFECTIVE HEAT CONDUCTIVITY OF METALLOPOROUS EMITTERS OF CATHODES OF ELECTRIC PROPULSION**

16. A.V. LOYAN, N.N. KOSHELEV, A.I. TSAGLOV, M.Yu. TITOV (Kharkov). **INVESTIGATION OF THERMAL FLUXES DISTRIBUTION IN THE CONSTRUCTION OF HEATERLESS HOLLOW CATHODE FOR ELECTRIC PROPULSION IN OPERATING CURRENT RANGE UP TO 50 A**

17. **September 16**

Morning Meeting of Section

PISTON COMBUSTION ENGINES

September 16, 9 00 – 13 00

Chairmen: **N.A. Ivaschenko, Dr. of Eng.** (Bauman MSTU, Russia); **A.P. Marchenko, Dr. Eng.** (KhPI, Kharkov); **I.V. Parsadanov, Dr. of Eng.** (KhPI, Kharkov, Kharkov);

Secretary: **D.V. Meshkov, Ph.D.** (NTU «KhPI», Kharkov)

1. A.V. GRITSYUK (Kharkov). **NEW INITIATIVE OF «SLOBOZHANSCHINNA» ON THE WAY OF REVIVAL OF DOMESTIC DIESEL ENGINE MANUFACTURING**

3. S.A. ALYOHIN, S.V. LYKOV, V.A. PYLYOV (Kharkov). ANALYSIS OF A TEMPERATURE CONDITION OF BUILT-UP PISTONS BODIES OF TWO-STROKE DIESEL ENGINES OF SPECIAL PURPOSE


5. V.G. ZARENBIN, N.I. MISHCHENKO, V.V. BOGOMOLOV (Gorlovka, Dnepropetrovsk). TO THE CALCULATION ON SEIZURE OF DETAILS OF ZPG EIC


7. V.S. VERBOVSKY, I.V. GRITSUK, D.S. ADROV, Z.I. KRASNOKUTSKAYA (Kyiv, Donetsk). INVESTIGATION OF PRE-START HEATING GAS ENGINE BASED ON THE USE OF THERMAL BATTERY HEAT STORAGE WITH MATERIALS HAVING PHASE TRANSITIONS


10. V.P. MATEYCHIK, V.P. VOLKOV, P.B. KOMOV, A.B. KOMOV, I.V. GRITSUK (Kyiv, Kharkiv, Donetsk) CONTROL PARAMETERS FOR THE WORKFLOW OF ENERGY-POWER UNIT OF A VEHICLE WITH ITS CAPABILITIES OF INFORMATION


12. V.I. ALYOKHIN, A.V. BELOGUB, O.V. AKIMOV (Kharkov). FEATURES OF COMPUTER-INTEGRATED DESIGN OF AUTOMOTIVE PISTON ENGINES


15. V.A. PYLOV, A.V. BELOGBUB, D.K. OBOĐETS (Kharkov, Kiev). PREDICTING THE RESOURCE STRENGTH OF PISTON SMALL-ENGINE AIRCRAFT ENGINES


17. V.A. PYLYOV, I.A. NESTERENKO, S.N. BAKLANOV (Kharkov). PRELIMINARY ASSESSMENT OF STRENGTH RESOURCE TRACTOR DIESEL PISTONS WITH LOADS OF TECHNOLOGICAL CYCLE TIME

18. V.V. SHPAKOVSKY (Kharkov). INTRODUCTION OF PISTONS WITH CORUNDUM A LAYER AT REPAIR OF DIESEL ENGINES OF DIESEL LOCOMOTIVES CHME-3


21. A.V. HIMCHENKO, D.G. MISHIN, A.V. BUZOV (Gorlovka). REDUCING IRREGULARITY OF TORQUE OF MODULAR ENGINE WITH DISABLING CYLINDERS SYSTEM ON PARTIAL LOAD

22. A.I. TARASENKO (Nikolayev). TORSIONAL VIBRATIONS OF A BRANCHED NONSYMMETRICAL MARINE DIESEL PROPULSION COMPLEX
Morning Meeting of Section
DESIGN AND STRENGTH
September 16, 9:00 – 13:00

Chairmen: Ye.R. Golubovskiy, Dr. Eng. (CIAM, Moscow);
Yu.S. Vorobev, Dr. Eng. (IPMach NASU)
A.V. Sheremetyev, Ph.D.
(SE “Ivchenko-Progress”, Zaporozhye)

Secretary: A.A. Brunak (“KhAI”, Kharkov)

1. S.V. YEPIFANOV, N.A. RING, I.L. GLIKSON, S.I. SHANKIN
   (Kharkov, Zaporozhye). “RAIN” METHOD MODERNIZING FOR
   TURBINE ENGINE BASIC COMPONENTS LIFETIME MONI-
   TORING

2. C. MARAVILLA MODELS IMPROVING FOR MAINTENANCE
   MONITORING OF ROTOR BLADES THERMOSTRESSED
   STATE

3. S.V. ALEKHINA, A.O. KOSTIKOV, N.A. SAFONO
   (Kharkov). REGIONAL-STRUCTURAL IDENTIFICATION
   OF THE BOUNDARY CONDITIONS ON THE SUR-
   FACES OF TURBINE ELEMENTS

4. I.V. BIBLIK (Kharkov). RELIABILITY ASSESSMENT OF PER-
   FORMANCE BASED ON PROBABILISTIC SUMMATION OF
   FATIGUE DAMAGES

5. N.Yu. OVCHAROVA, Yu.S. VOROBIOV (Kharkov). INFLUENCE OF
   HIGH-RATE DEFORMATION ON THE GAS TURBINE CASE
   UNDER IMPACT LOADING

6. N.G. SHULZHENKO, P.P. GONTAROWSKY (Kharkov). REACTION
   OF SHELL ELEMENTS OF SPACE VEHICLES ON THE IM-
   PULSE ACTION

7. V.O. POVGORODNY (Kharkov). IDENTIFICATION OF THE PA-
   RAMETER’S OF THERMOELASTICITY TO THE NONHOMOGE-
   NEOUS STRESS CONDITION ON THE SOLUTION INVERSE
   PROBLEM OF THE THERMOELASTICITY

8. V.O. POVGORODNY (Kharkov). INVERSE PROBLEMS OF THE
   THERMOELASTIC’S STRESSES ON UNCONSTANT REGIMEN

9. V.O. POVGORODNY (Kharkov). THE EXPERIMENTAL AND
   ANALYTICAL SOLUTION OF INVERSE PROBLEM FOR PLATE
   WITH ELEMENT’S OF THE TURBINE
10. A.S. DANOV, S.A. DANOV (Kharkov). ANALYTICAL DECISION OF TASK ABOUT INTRINSIC PRESSURE IN CYLINDER DURING PERMANENT AXIAL DEFORMATION


12. W.V. TERAUD (Moscow) STRETCHING OF THE CYLINDER SPECIMEN UNDER HIGH TEMPERATURE MEASURED BASED ON THE CAMERA

13. A.N. PETUHOV (MOSCOW) CHARACTERISTICS AND FEATURES LCF and HCF DEFORMABILITY and GRANULAR ALLOY WHEELS FOR GTE IF STRESS CONCENTRATION IN A WIDE RANGE OF TEMPERATURES

14. E.R. GOLUBOVSKIY, M.E. VOLKOV, N.M. EMMAUSSKIY (Moscow). ASSESSMENT OF SPEED OF DEVELOPMENT OF THE CRACK OF FATIGUE (SDCF) IN NICKEL ALLOYS FOR DISKS GTE


16. S.S. YUTSKEVYCH (Kiev). STUDY OF D16AT ALUMINUM ALLOY ALCLAD SURFACE MICROSTRAIN UNDER FATIGUE USING OPTICAL NONCONTACT PROFILER

17. M.V. KARUSKEVICH (Kiev). INSTRUMENTAL INDICATION OF SINGLE OVERLOADS AT THE STAGE OF THE FATIGUE CRACK PROPAGATION

18. A.V. PLASHCHYNSKA (Kiev). FATIGUE CRACK GROWTH IN A THIN FINITE PLATE WITH A STRESS CONCENTRATOR UNDER UNIAXIAL ASYMMETRICAL TENSION-COMPRESSION

19. A.R. LEPESHKIN, N.G. BYCHKOV, P.A. VAGANOV (Moscow) NEW METHOD OF CALCULATION OF STRESS STATE OF CERAMIC THERMAL BARRIER COATINGS OF COLUMNAR STRUCTURE IN THE FIELD OF CENTRIFUGAL

20. V.I. CUBICH, L.I. IVSCHENKO, YU.V. MILMAN, V.M. KYSIL, M.O. IEFIMOV, N.P. KORZOVA, K.E. GRINKEVYCH, YU.I. YEVDOKIMENKO (Kiev, Zaporozhye). USING OF QUASICRYSTALLINE COATING FOR INCREASE OF HEAT-RESISTANT OF PISTON ALUMINUM ALLOY
21. O.P. UMANSKYI, O.A. TERENTJEV, M.S. STOROZHENKO, V.M. KYSIL, Y.I. YEVDOKIMENKO, V.T. VARCHENKO (Kiev). EFFECT OF TITANIUM DIBORIDE ADDITIVES ON THE STRUCTURE AND PROPERTIES OF HVAF-COATINGS OF (Ni-Cr-Si-B) – TiB₂ SYSTEM

22. O. UMANSKYI, O. POLIARUS, M. UKRAINETS, A. DOVGAL, L. KAPITANCHUK, V. SUBBOTIN (Kiev). THE STRUCTURE AND PROPERTIES INVESTIGATIONS OF COMPOSITE MATERIALS AND COATINGS BASED ON NiAl-TiB₂ SYSTEMS

Morning Meeting of Section

ENGINEERS AND POWER PLANTS FOR SPACE ROCKET ENGINEERING

September 16, 9 00 – 13 00

Chairmen: A.V. Gaydaychuk, Dr. Eng. (“KhAI”, Kharkov);
A.V. Loyan, Ph.D. (“KhAI”, Kharkov)

Secretary: T.A. Maksimenko (“KhAI”, Kharkov)

1. S.Yu. NESTERENKO, Sh. ROSHANPOUR. (Kharkov). PARTICLES VELOCITY DISTRIBUTION FUNCTION MOMENTS EQUATIONS SET IN RARIFIED MEDIUM OF INDUCTIVE SOURCES OF PLASMA, ELECTRONS AND IONS

2. S.Yu. NESTERENKO, Sh. ROSHANPOUR. (Kharkov). PECULIARITIES OF ELECTRONS REFLECTION FROM POTENTIAL BARRIER AND THEIR GAS DYNAMICS CHARACTERISTICS FLOWS ON THE BORDERS OF ELECTRIC PROPULSION THRUSTERS PLASMA


5. S.V. SINCHENKO, S.V. SHIRINSKY (Kharkov). CREATION OF MATHEMATICAL MODELS OF DISCHARGE CHARACTERISTICS OF ELECTROCHEMICAL ACCUMULATORS OF VARIOUS TYPES BY MEANS OF EQUIVALENT CIRCUITS

8. A.S. DANOV (Kharkov). FUNDAMENTAL ENERGY LEVELS OF MATTER
9. A.S. DANOV (Kharkov). VECTOR NATURE OF COMMON FIELD OF INTERACTION
10. A.S. DANOV (Kharkov). QUANTIZATION ENERGY OF ELASTIC AND PLASTIC MEDIUMS
11. V.I. RYABKOV, N.G. TOLMACHEV (Kharkov). HAVE THE HIGGS BOSON BEEN DISCOVERED?
12. V.I. RYABKOV, N.G. TOLMACHEV (Kharkov). ENERGETIC CONDITIONS OF "COLD" FUSION SEMANTIC INTEGRITY OF LANGUAGE OF STANDARDS OF THE SOFTWARE
13. Yu.A. SYSOIEV (Kharkov). CONDUCTING FILM GENERATION ON THE NON-CONDUCTOR SURFACE OF STARTING INJECTOR OF PLASMA SOURCES
15. R.O. BILONENKO (Kharkov). THE USE OF ALUMINUM IN CHEMICAL CURRENT SOURCE TO GENERATE HYDROGEN

September 16

Morning Meeting of Section

THEORY AND OPERATION PROCESSES

September 16, 9\textsuperscript{00} – 13\textsuperscript{00}

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. V.A. SHCHIPAKOV (Moscow). DESIGN AND EXPERIMENTAL ANALYSIS OF THE TURBOCOMPRESSOR UNIT WITH PULSATING GAS DYNAMIC RESONATORS
2. B.D. BILEKA, V.J. KABKOV, R.V. SERGIENKO (Kiev). ABOUT USING PROPANE IN THE POWER THERMODYNAMIC CYCLE WITH ISOTHERMAL COMPRESSION OF WORKING MEDIUM IN POWER UNIT WHICH UTILIZE WASTE HEAT

3. V.T. MATVIINKO, V.A. OCHERETUANIJ, G.V. GOROBETC (Sevastopol). POWER BOOST GAS TURBINE ENGINES COMPLETE CYCLES, HEAT RECOVERY

4. S.S. RYZKOV, A.N. RADCHENKO, S.G. FORDUY (Nikolayev). APPROACHES OF ENCREASING EFFICIENCY OF TRIGENERATION PLANTS FOR INTEGRATED ENERGY SUPPLY

5. D.V. KONOVALOV, S.A. DZHURINSKAYA (Nikolayev). HEAT RECOVERY CHILLER FOR AIR CONDITIONING SYSTEM SHIPS

6. B.Sh. MAMEDOV (Zaporozhye). SINGLE THEORY OF MOVERS. TURBO-JET ENGINES THERMODYNAMIC CYCLE IN COORDINATE P-V, T-S CALCULATION

7. V.P. SOTNIKOV (Yenakiyevo). THERMODYNAMIC ASPECT OF THE GAS MULTI-PROCESS COMPRESSION WITH INTER-COOING

8. M.A. TARASENKO, A.I. TARASENKO (Nikolayev). EXTRANEOUS TEMPERATURE EFFECT ON THE PARAMETERS OF AIR MODES FOR PARTIAL GTE POWER

9. R. ZELENSKYI, S. YEPIFANOV, A. GORLOV (Kharkov). SPECIFICS OF TURBINE ENGINE DYNAMICS SIMULATION


11. A.V. SMIRNOV, V..A. LEVASHOV, N.S. SCHERBAKOV, S.A. ZHUKOV (Sumy). DETERMINATION OF HYDRAULIC RESISTANCE SNAIL EXHAUST DUCT GTE DU80L1 PUMPING UNIT GPA-25SD/100-1, 44M


13. O.V. KISLOV (Kharkov). ESTIMATION OF GAS TURBINE ENGINE GAS GENERATOR EFFICIENCY

14. O.V. KISLOV (Kharkov). THE GAS TURBINE ENGINE GAS GENERATOR CHARACTERISTICS
15. O.V. KISLOV (Kharkov). FEATURES OF OPERATION MODE SELECTION OF CONVERTED GAS TURBINE ENGINE GAS GENERATORS

16. O.V. KISLOV (Kharkov). SELECTING THE OPERATING MODE OF THE CONVERTED GTE FREE TURBINE

17. Ye. MARTSENYUK, S. YEPIFANOV, T. KULIK (Kharkov). CHOOSING OPTIMAL MODEL OF TEMPERATURE AT COMPRESSOR DISCHARGE SIMULATING FOR MONITORING LIFETIME EXHAUSTION OF MAIN PARTS OF THREE-SPPOOL TFE


19. V.A. SHKABURA (Kharkov). ANALYSIS OF TURBOCOMPRESSOR WITH GENERAL IMPELLER FOR GAS TURBINE ENGINES


21. Y.A. KRASHANITSA (Kharkov). AEROHYDROGASDYNAMICS: PROBLEMS & PROSPECTS

22. A.M. TERESHIN, A.F. CHEVAGIN (Zhukovsky). DECELERATION OF SUPERSONIC FLOW IN PSEUDOSHOCK, HYDRAULIC DIAMETER CONCEPT

23. S.N. FETISOV (Moscow). USING MESH DEFORMATION TO COMPUTE FLOW IN DESIGN WITH MOVABLE ELEMENTS


25. J. ZABSKI (Gdansk). VELOCITY WAVES IN THE BOUNDARY LAYER DISTURBED BY WAKES OF NEGATIVE AND POSITIVE JETS IN ACCELERATING FLOW

26. V.A.SAFONOV (Sevastopol). ON THE ROLE OF NONSTATIONARY OF THE CHAMBER HEAT ENGINE THERMOREVERSIBLE
Evening Meeting of Section

DESIGN AND STRENGTH

September 16, 14:00 – 19:00

Chairmen: A.P. Zinkoskiy, Dr. Eng. (IPS, Kiev);
V.V. Karachun, Dr. Eng. (“KPI”, Kiev);
A.A. Khorickov, Dr. Eng. (CIAM, Moscow)

Secretary: Yu.A. Gusev, Ph.D. (KhAI, Kharkov)

1. G.V. SNIZHNOI (Zaporozhye). MAGNETOMETRIC EVALUATION OF CORROSION RESISTANCE AUSTENITIC CHROMIUM-NICKEL STEELS WITH DIFFERENT PHASE COMPOSITION


5. A.O. KOSKIN, V.G. SELEZNEV (Moscow). PECULIARITIES OF ENGINES BLADED DISKS FREQUENCY CHANGING PARAMETERS


8. A.V. PETROV, V.V. TICHOMIROV, V.V. DONCHENKO (Zaporozhye). BASIC WAYS TO INCREASE ACCURACY OF CALCULATED DEFINITION OF GTE’s BLADES NATURAL FREQUENCIES AND MODE SHAPES

10. O.S. KAIROV, S.O. MORGUN (Nikolayev). TURBINE ENGINES BLADED DISKS SUBMITTED AS NON-CYCLICAL SYSTEM VIBRATION, STRESS AND DEFORMATION ANALYSIS


13. Yu.B. NAZARENKO (Moscow). AVOIDANCE OF RESONANCE WITH ROTOR'S CRITICAL REVOLUTION FREQUENCY IN CASE OF ELLIPTIC TRAJECTORY OF BEARING SHAFT AXIS REVOLUTION ON SUPPORT BEARING


15. A.N. GORBENKO (Kerch). ON THE PERMISSIBLE LEVEL OF ANISOTROPY OF THE GYROSCOPIC INERTIA OF THE ROTOR

16. O.D. NIKOLAYEV, O.S. BILETSKY (Dnepropetrovsk). AN INTERACTION OF CAVITATION SURGE OSCILLATIONS AND LONGITUDINAL OSCILLATIONS OF A LAUNCHER STRUCTURE IN «ROCKET STRUCTURE – PROPULSION SYSTEM» DYNAMIC SYSTEM


19. V.N. MEL’NICK, V.V. KARACHUN, G.V. BOIKO (Kiev). CAUCHY'S TASK FOR TWO COAXIAL CYLINDERS CONNECTED BY ELASTIC COMMUNICATION IN THE ACOUSTIC ENVIRONMENT

20. V.V. KARACHUN, V.N. MEL’NICK, V.Ju. SHYBETSKIJ (Kiev). INTERACTION OF CONVEX SHELL WITH A STRONG SHOCK WAVE
Evening Meeting of Section

PISTON COMBUSTION ENGINES

September 16, 14:00 – 19:00

Chairmen: A.V. Belogub, Dr. Eng. (PJSC “AVTRAMAT”, Kharkov); N.I. Mishchenko, Dr. of Eng. (ARIDNTU, Gorlovka); V.A. Pylev, Dr. Eng. (NTU «KhPI», Kharkov)

Secretary: A.A. Zotov, Ph.D. (PP «VEKTOR ATTRAKCION», Kharkov)

1. A.F. GOLOVCHUK (Dnepropetrovsk). FREE-PISTON ENGINE-AND-HYDRAULIC PUMP

2. V.A KOROHODSKYI (Kharkov). ORGANIZATION OF RATIONAL METHOD OF POWER CONTROL IN A SPARK IGNITION ENGINE

3. V.A KOROHODSKYI (Kharkov). INCREASING FUEL AND ENVIRONMENTAL PERFORMANCE OF A TWO-STROKE INTERNAL COMBUSTION ENGINE WITH SPARK-IGNITION ENGINES BY IMPROVING THE PROCESSES OF INTERNAL MIXING


5. A.F. GOLOVCHUK, Y.I. GABRIYEL (Dnepropetrovsk). UNIVERSAL DESCRIPTIONS OF ELECTRONIC REGULATOR OF DIESEL FOR TRACTOR

6. I.I. NEYACHENKO (Togliatti). FEATURES OF ICE TORQUE WHEN USING THE AUTOMATIC AND ROBOTIZED TRANSMISSION


8. A.V. GRITSJUK, A.N. VRUBLEVSKY, A.A. OVCHINNIKOV (Kharkov). TESTING OF NEW PERFORMANCE CAPABILITIES OF FUEL SYSTEM AT FORMATION OF EXTERNAL SPEED CHARACTERISTIC OF AN AUTOMOBILE DIESEL ENGINE


11. A.V. TRINJOV, D.G. SIVYH, E.V. SINYAVSKII, O.Y. PYLYPENKO (Kharkov). THERMAL STATE OF HIGH=SPEED DIESEL VALVE UNIT AUTOMATIC CONTROL

12. A. SHHVETS (Pervomajsk). METRICS SPECIFICATION OF GAS-AIR FLOW MOVING THROUGH DESIGN OF MIXING

13. Ye.V. BELOUSOV, V.V. CHERNIAVSKYI (Kherson). MILLER'S CYCLE AND ITS IMPLEMENTATION IN SHIP DIESEL ENGINES

14. D.V. MESHKOV, J.V. GORAJCHIJ (Kharkov). COOLING SYSTEM WITH ELECTRONIC CONTROL


17. O.K. BEZJUKOV, V.A. ZHUKOV, E.N. NIKOLENKO (Tutaev). THE IMPROVING OF LIQUID COOLING SYSTEMS FOR TRANSPORT INTERNAL COMBUSTION ENGINES

18. A.A. SIROTA, N.I. RADCHENKO (Nikolayev). INFLUENCE OF PERFORMANCE FACTORS AND COOLING SYSTEM ON THE TEMPERATURE OF SCAVENGE AIR AT THE INLET OF MARINE DIESEL ENGINE CYLINDERS


September 17

Morning Meeting of Section

THEORY AND OPERATION PROCESSES

September 17, 9:00 – 13:00

Chairmen: V.T. Matveenko, Dr. Eng. (SevGTU, Sevastopol’);
S.I. Serbin, Dr. Eng. (NUSh, Nikolayev);
S.V. Yershov, Dr. Eng. (IPMash, Kharkov)

 Secretary: V.Ye. Kostyuk, Ph.D. (KhAI, Kharkov)

1. A.E. Remizov, O.O. Karelin, I.A. Remizov (Rybinsk). TO THE QUESTION OF CHOICE OF GASODYNAMIC EFFECTIVENESS PARAMETER OF DIFFUSER


3. V.V. Kotkin (Kharkov). MATHEMATICAL MODEL OF VISCOUS INTERACTION OF THE JETS AT THE GAS TURBINE ENGINE NOZZLE EXIT OF MULTI-MODE AIRCRAFT UNDER SUBSONIC EXTERNAL FLOW

4. D.V. Arkhipov, R.Z. Tumashev (Moscow). EFFECT OF RADIAL FLOW IRREGULARITY PARAMETERS AT THE ROTOR ENTRY ON GAS-DYNAMIC PROPERTIES OF AXIAL COMPRESSOR STAGE

5. V.N. Matveev, O.V. Batyrin, G.M. Popov (Samara). MULTI-STAGE COMPRESSOR PERFORMANCES IMPROVEMENT BY USING OPTIMIZATION METHODS


8. M.Y. SHELKOVSKY (Nikolayev). AERODYNAMIC OPTIMIZATION METHOD OF COMPRESSOR BLADE VANES

9. V.P. GERASIMENKO, M.Y. SHELKOVSKY (Nikolayev, Kharkov). COMPLEX AERODYNAMIC PERFECTION OF COMPRESSORS OF GTE

10. H. BARYSHEVA (Kharkov). INLET FLOW RADIAL IRREGULARITY INFLUENCE ON CENTRIFUGAL STAGE CHARACTERISTICS

11. L.G. BOYKO, E.S. BARYSHEVA, A.E. DYOMIN, O.N. DRYNOV (Kharkov, Zaporozhye). AVIATION ENGINE AXIAL-CENTRIFUGAL COMPRESSOR AXISYMMETRICAL FLOW MODELING


13. E.S. BARYSHEVA, K.V. FESENKO (Kharkov). DESIGN METHOD FOR CENTRIFUGAL SUPERCHARGER STAGE


16. L.G. BOYKO, E.S. BARYSHEVA, A.E. DYOMIN, O.N. DRYNOV (Kharkov, Zaporozhye). INFLUENCE OF CHANGE OF AVIATION GTE COMPRESSOR -BLADE CROWNS GEOMETRICAL PARAMETERS ON GTE PERFORMANCES

17. A. DYOMIN, I. KAKAEV (Kharkov). PARAMETER-ORIENTED RESEARCH OF FLOW FEATURES IN SUPERCritical CASCADE OF THE COMPRESSOR STAGE
18. V. LAPOTKO, YU. KUKHTIN, I. KRAVCHENKO (Zaporozhye). NUMERICAL ANALYSIS OF ACOUSTICAL INTERACTION FOR TURBINE RIMS OF EXPERIMENTAL ENGINE FAN


20. V.V. VYATKOV, A.E. REMIZOV, A.M. TOSHAKOV (Rybinsk). RESEARCHING OF LPT NOZZLE BLOCKS WORKING WITH INTER-TURBINE CHANNEL IN THE PRESENCE OF INPUT SWIRLING FLOW

21. N.V. PIZHANKOVA (Kharkov). GAS TURBINE STAGE FLOW PARAMETERS DEFINITION IN WIDE RANGE REGIMES

22. L.G. BOYKO, O.V. KISLOV, N.V. PIZHANKOVA (Kharkov). MODELING PROCESS IN GAS TURBINE IN GAS TURBINE ENGINE

23. V.V. PANIN, M.O. DIKIY, A.S. SOLOMAKHA, V.G. PETRENKO (Kiev). FOG COMPRESSION IN GAS TURBINE ENGINES

24. V.A. GRIGORIEV, D.S. KALABUHOV, V.M. RAD’KO (Samara). NUMERICAL GAS-DYNAMIC SIMULATION OF SINGLE-STAGE CENTRIPETAL ULTRALOW POWER TURBINE

25. V.A. GRIGORIEV, V.M. RAD’KO, D.S. KALABUHOV (Samara). MATHEMATICAL MODELS OF POWER CRITERIA FOR ESTIMATION OF EFFICIENCY OF SINGLE-STAGE TO THE SMALLEST POWER TURBINES

26. V.A. SAFONOV, PN KUZNETSOV, IL BELETSKY (Sevastopol). THE THERMOMECHANICAL MOTOR WITH LINEAR GENERATOR WORKING STIRLING CYCLE

Morning Meeting of Section

PISTON COMBUSTION ENGINES

September 17, 9 00 – 13 00

Chairmen: A.P. Strokov, Dr. Eng. (IPMach NASU);
A.Ye. Svistula, Dr. Eng. (AGTU, Barnaul);
A.F. Golovschuk Dr. Eng. (DNUZhT, Dnepropetrovsk)
Secretary: V.V. Matveynko (NTU «KhPI», Kharkov)

1. A.N. KONDRATENKO, A.P. STROKOV, N.M. KARASICHENKO (Kharkov). EXPERIMENTAL INVESTIGATION OF THE WORKING LAYOUT OF FILTER ELEMENT OF DIESEL PARTICLE FILTER WITH BULK NATURAL ZEOLITE. PART 1
2. A.N. KONDRAFENKO, A.P. STROKOV, S.P. KHOZHAINOV (Kharkov). EXPERIMENTAL INVESTIGATION OF THE WORKING LAYOUT OF FILTER ELEMENT OF DIESEL PARTICLE FILTER WITH BULK NATURAL ZEOLITE. PART 2


5. I.V. PARSADANOV, I.P. VASYLIEV (Kharkov, Lugansk). DEFINITION OF STRUCTURE OF PM OF THE EXHAUST GASES OF DIESEL


7. A.A. PROKHORENKO, D.E. SAMOILENKO (Kharkov). THE MODEL OF DIESEL ENGINE TEST BENCH IN AVL AST BOOST SOFTWARE

8. I.V. PARSADANOV, I.V. RYKova, A.N. MAKLAKOV (Kharkov). FEATURES INTRACYLINDER ENVIRONMENTAL CATALYSIS IN ICE

9. M.V. VED, N.D. SAHNENKO, E.V. BOGOYAVLENSKAY (Kharkov). PROCESS ORGANIZATION IN COMBUSTION IN THE PRESENCE OF ICE CATALYTIC MATERIALS


15. A.M. LEVTEROV, L.I. LEVTEROVA, N.Y. GLADKOV (Kharkov). RESULTS OF NUMERICAL PROBE OF CHARACTERISTICS OF THE AUTOMOBILE ENGINE WORK ON PETROLETHANOL


19. A. PROKHORENKO, I. PARSADANOV, D. SAMOILENKO (Kharkov). AN INNOVATION DESIGN SILENCER ISSUE TRACTOR DIESEL

Morning Meeting of Section

AUTOMATIC CONTROL SYSTEMS AND DIAGNOSTICS

September 17, 9:00 – 13:00

Chairmen: R.A. Varbanets, Dr. Eng.; (ONSU, Odessa);
S.R. Ignatovich, Dr. Eng. (NAU, Kiev);
S.V. Yepifanov, Dr. Eng. (“KhAI”, Kharkov)

Secretary: M.V. Shevchenko (“KhAI”, Kharkov)


2. D.G. FEDORCHENKO, A.V. GLADKOV, V.A. SOLYANNIKOV, A.I. ZHUZHUKIN (Samara). THE USE OF HOLOGRAPHIC INTERFEROMETRY FOR ROTATING OBJECT VIBRATIONS STUDY
3. D.G. FEDORCHENKO, A.V. GLADKOV, V.A. SOLEYANNIKOV, A.I. ZHUZHUHUKIN (Samara). SPECKLE-INTERFEROMETER FOR GAS TURBINE ENGINE LARGE-SIZE PARTS AND COMPONENTS VIBRATIONS STUDY

4. V.N. NIKLAYEV, Y.N. KABANOV (Novosibirsk). A THERMAL-CONVECTION TRANSDUCER OF FLUID CONSUMPTION AND TEMPERATURE IN PIPELINES OF AIRCRAFT ENGINE

5. I.O. IGUMENTSEV, O.O. PROKOPENKO (Kharkov). ELECTROMAGNETIC COMPONENTS OF THE CHARGED GYROSCOPE ROTATIONAL FREQUENCY

6. A.V. KULALAEV, V.V. KULALAEV (Kiev). ESTIMATION OF THE EFFICIENCY OF INFORMATION TRANSFER CHANNEL CONTROL WHILE OPTIC-ELECTRONIC COUNTERACTION OF UAV WITH OPTICAL GUIDANCE SYSTEM


8. S.V. YEPIFANOV, E.O. KONONYKHIN (Kharkov). SYNTHESIS AND ANALYSIS OF AN ADVANCED GAS TURBINE ENGINE CONTROL

9. V.V. PANIN, S.V. ENCHEV, S.O. TAKU (Kiev). FORMATION OF THE STRUCTURE OF INTELLECTUAL AUTOMATIC CONTROL SYSTEM OF GAS TURBINE ENGINES

10. V.V. PANIN, S.V. ENCHEV, S.S. TOVKACH (Kiev). COMBINED MODELS OF INFORMATION PROCESSING IN THE ELECTRONIC CONTROL SYSTEMS OF AIRCRAFT ENGINES

11. M. BRADAC, F. ZOUHAR, J. KRIZAN, M. BLIZNAK, L. VARGOVCIK, O. KONONIKHYN, Ye. PAVLYUK, Y. KRAVCHENKO (Brno, Kharkov). MODEL BASED DESIGN APPLIED FOR DEVELOPMENT OF FUEL METERING PUMP CONTROL ALGORITHM


14. A.I. TARASENKO, A.A. TARASENKO (Nikolaev). DETAILS OF DIGITAL CONTROL FOR POWER PLANT GTE ON STARTING AND OPERATING MODES

15. V.A. KASIANOV, A.V. GONCHARENKO (Kiev). SUBJECTIVELY PREFERRED OPTIMALLY CONTROLLED MODES OF OPERATION FOR AN AIRCRAFT MAXIMAL DURATION HORIZONTAL FLIGHT

16. A.V. GONCHARENKO (Kiev). SUBJECTIVE ENTROPY EXTREMIZATION PRINCIPLE AS A TOOL OF AN AIRCRAFT MAXIMAL DURATION HORIZONTAL FLIGHT CONTROL

17. Y.P. LESCHENKO (Kiev). INTELLECTUAL CONTROL SYSTEM BY MEASURING ROBOT


Evening Meeting of Section

AUTOMATIC CONTROL SYSTEMS AND DIAGNOSTICS

September 17, 14:00 – 19:00

Chairmen: S.A. Dmitryyev, Dr. Eng. (NAU, Kiev); B.B. Korovin, Dr. Eng. (FRI, Moscow); G.G. Kulikov, Dr. Eng. (USATU, Ufa)

Secretary: F.F. Sirenko (“KhAI”, Kharkov)

1. A.I. VASILENKO, S.P. SERGEEV, I.I. KOSTYAN (Sumy). DYNAMIC MODES OF POWER SUPPLY UNITS AMNUFAC TURED BY PJSC «SUMY FRUNZE NPO"

2. V.F. MIRGOROD, V.D. GOGUNSKI, A.G. BURIACHENKO, V.M. GRUDINKIN (Odessa). ACCURACY EVALUATION OF GTE PIECE WISE-LINEAR DYNAMIC MODELS


4. I.G. BAKHMET (Beijing). BUILDING FLOW CHARACTERISTIC OF FLOW CONTROLLER LJE
5. O.S. YAKUSHENKO, V.E. MILTSOV, S.I. YOVENKO, V.V. RATYNSKY, O.I. CHUMAK (Kiev). THE AUTOMATED MONITORING OF RELIABILITY IN AIRLINE


7. S.A. DMITRIYEV, V.I. BURLAKOV, A.V. POPOV, D.V. POPOV (Kiev). AIRCRAFT ENGINES MAINTENANCE PROGRAMS DEVELOPMENT


10. M.V. SHEVCHENKO, S.V. YEPIFANOV (Kharkov). ESTIMATING NONMETERING PARAMETERS TAKING INTO ACCOUNT GAS PATH TECHNICAL STATE CHANGING

11. S.V. YEPIFANOV, F.F. SIRENKO, I.I. GOLOVIN (Kharkov). OVERVIEW OF METHODS FOR SYNTHESIZING MATHEMATICAL MODELS OF GAS TURBINE ENGINES AT SUB-IDLE MODES

12. V.F. MIRGOROD, I.M. GVOZDEVA, D.S. BURUNOV (Odessa). CONSTRUCTION AND ANALYSIS OF SURFACE TREND ASSESSMENT IN THE PROBLEMS OF POWER SYSTEMS BASED ON GTD

13. V.F. MIRGOROD, E.V. DERENG (Odessa, Kiev). CLUSTERS EXTRACTION AT MULTIDIMENSIONAL TREND ANALYSIS


15. V.V. PANIN, S.V. ENCHEV, O.V. SAVCHIN (Kiev). ALGORITHMIC MAINTENANCE OF A SYSTEM OF IDENTIFICATION PRESSURE (OF SURGE) PHENOMENA IN COMPRESSORS AVIATION GTE

17. E.V. ZAREMBA, I.P. KOVALEV (Taganrog). RESEARCH OF VIBRATION CHARACTERISTICS OF ENGINE D-436TP FAN ON BE-200ES AMPHIBIAN IN ICING CONDITIONS


22. J. KICINSKI (Gdansk, Poland). NEW METHOD OF ANALYSIS OF NON-LINEAR STOCHASTIC AND RANDOM VIBRATIONS

**Evening Meeting of Section**

**TECHNOLOGY**

**September 17, 14:00 – 17:45**

**Chairmen:**

- A.I. Dolmatov, Dr. Eng. (KhAI, Kharkov);
- A.Ya. Kachan, Dr. Eng. (NTU, Zaporozhye);
- N.E. Kalinina, Dr. Eng. (DGU, Dnepropetrovsk)

**Secretary:**

- M.K. Knyazev, PhD (“KhAI”, Kharkov)


3. R.V. VARNAS, V.V. KOMBAROV (Kharkov). INCREASING OF MACHINING EFFICIENCY MACHINING ON MODERNIZED MACHINE TOOL WITH CNC

4. E.V. KOMBAROVA, V.F. SOROKIN (Kharkov). THE CIRCLE CENTRE CORRECTION ALGORITHMS APPLICATION WITH HIGH-SPEED MACHINING

5. E.V. KOMBAROVA, R.V. VARNAS, E.A. AKSENNOV (Kharkov). THE APPLICATION OF HARDWARE-SOFTWARE COMPLEX FOR INVESTIGATION OF ALGORITHMS AND PROCESSES WITH ADJUSTMENT OF CNC SYSTEM FOR SPECIAL LONG-MEASURING MACHINE TOOLS FP7MSMN2

6. V.F. SOROKIN, T.P. BYT, V.V. KOMBAROV (Kharkov). SYNTHESIS OF INVOLUTE PATHS OF HIGH-SPEED MACHINING OF HOLES

7. O.V. KOMBAROVA, V.F. SOROKIN, V.V. KOMBAROV (Kharkov). ADAPTIVE CONTROL OF SPEED MACHINING IN CNC SYSTEM WITH PRIOR PLANNING FEEDRATE BASED ON SMOOTH S-CURVE LAWS OF ACCELERATION AND DECELERATION

8. V.F. SOROKIN, V.V. KOMBAROV, I.A. TERNYUK (Kharkov). METHOD OF DIRECT STABILIZATION OF CONTOUR FEEDRATE FOR THE SPLINE INTERPOLATOR CNC SYSTEM

9. V.V. KOMBAROV, V.F. SOROKIN (Kharkov). THE PROVIDING STABILITY OF CONTOUR FEEDRATE IN CNC SYSTEM BY HIGH-SPEED EQUIPMENT ON EXAMPLE OF CIRCULAR INTERPOLATION

10. R.V. VARNAS, E.V. KOMBAROVA, E.A. KRIZHIVETS (Kharkov). HIGH MACHINING OF WINGLONGITUDIANAL STRUCTURAL MEMBERS ON MODERNIZING REQUIPMENT


13. T.P. NABOKINA, O.V. GAYDACUH, O.M. GRUSHENKO (Kharkov). SPEED OF THE UNHARDERING CUTTING BY SUPERSONIC HIGH-TEMPERATURE STREAMS OF THE MATERIALS BASED ON ALUMINUM ALLOYS

14. S.V. SERGEEV, M.A. KURIN, T.V. LOZA (Kharkov). TECHNOLOGY SUPPORT INCREASING CAPACITY USE BLADES GTE COMPLETE HARDENING

15. A.A. KABATOV, A.P. HARITONYUK, D.N. GOLOVKO (Kharkov). INVESTIGATION POWER PARAMETERS OF DIAMOND SMOOTHING
Session Of Project
«PROJECT KHAI-ERA – MUTUALLY ADVANTAGEOUS COOPERATION
UKRAINE – EUROPEAN UNION IN THE AVIATION TECHNOLOGY»

18 00 – 19 00

19. N. NECHYPORUK, Yu. VOROBYOV, I. BYCHKOV (Kharkiv),
N. BYCHKOV(Kharkiv). TECHNOLOGICAL PROCESS OF THE AIR-
CRAFT STRUCTURES ASSEMBLY AND INFORMATION SUPPORT

20. Yu. VOROBYOV, N. NECHYPORUK, V. VORONKO, B. YATSOUN
(Kharkiv), D. BERND (Magdeburg). COMPOSITE LAMINATES TI-
TANIUM IMPULSE RIVETING TECHNOLOGY DEVELOP-
MENT WITH PROCESS PARAMETERS OPTIMIZATION

21. Yu. VOROBYOV, N. NECHYPORUK, I. VORONKO, B. YATSOUN
(Kharkiv), D. BERND (Magdeburg). EXPERIMENTAL AND NU-
MERICAL INVESTIGATIONS ON IMPULSE SELF-PIERCE
RIVETING OF LIGHT WEIGHT AIRCRAFT ALUMINUM AND
MIXED STRUCTURES

22. Yu. VOROBYOV(Kharkiv). CREATION CONCEPT OF TECHNO-
LOGICAL SYSTEMS FOR ASSEMBLAGE OF VEHICLES WITH
MANUAL PNEUMATIC IMPACT TOOL

23. V. VORONKO(Kharkiv). SCIENTIFIC BASIC PRINCIPLES OF
THE AUTOMATED CONVEYOR OF AIRCRAFT PANELS AND
UNITS ASSEMBLY

Evening Meeting of Section

THEORY AND OPERATION PROCESSES

September 17, 14 00 – 19 00

Chairmen: N.I. Radchenko, Dr. Eng. (NUSh, Nikolayev);
A.V. Rusanov, Dr. Eng. (IPMash, Kharkov);
A.A. Khalatov, NASU Academician (ITTPh, Kiev)

Secretary: Ye.V. Martsenyuk (“KhAI”, Kharkov)

1. V. PETELCHYTS, A. KHALATOV, D. PYSMENNYI,
Y. DASHEVSKYY (Kiev, Nikolayev). TO FILM COOLING RANS
SIMULATION ACCURACY IMPROVING APPROACH

2. A.A. KHALATOV, M.V. BEZLIUDNA, Yu.J. DASHEVSKYY,
S.D. SEVERIN, I.I. BORISOV (Kiev, Nikolayev). ADAPTATION OF
$k$-$\varepsilon$ TURBULENCE MODEL FOR THE FLAT PLATE FILM
COOLING NUMERICAL SIMULATIONS DOWNSTREAM TWO
ROWS OF HOLES ARRANGED IN SPHERICAL DIMPLES
3. V.V. KOROBKO (Nikolayev). STUDY OF HEAT TRANSFER AND HYDRODYNAMICS IN COMPONENTS THERMOACOUSTIC ENGINES


6. A.N. MARKUSHIN, A.V. BAKLANOV (Kazan). HYDRAULIK CHARACTERISTICS OF SHORTENED MULTI-ATOMIZER COMBUSTOR OF GTE

7. D.A. DOLMATOV (Kharkov). COMBUSTION OF SINGLE AND TWIN LIQUID FUEL DROPLET DURING FAST EVAPORATION

8. D.A. DOLMATOV (Kharkov). HYDROXYL AND ATOMIC OXYGEN OVERSHOOT PROVOCATION BY SMALL PLASMA INCLUSIONS


15. M.S. BONDARENKO, M.O. CHEPLYUKHA (Nikolayev). THE LNG-TERMINAL REGASIFICATION UNIT WITH GAS-TURBINE FOR ELECTRIC POWER GENERATION
16. Ye.I. KIRILASH, V.Ye. KOSTYUK, D.A. TKACHENKO (Kharkov) VERIFICATION OF THE COMBINED CONVECTIVE AND RADIANTR HEAT TRANSFER MODELS UNDER GAS-TURBINE ENCLOSURE CONDITIONS
17. V.A. SCHUKIN, F.M. VALIEV, O.V. DUNAY (Kazan). PARTICULARITIES OF THE FORMATION TOXIC SUBSTANCES IN TURBULENT DIFFUZION COMBUSTION GAS
18. V.S. KORNIENKO (Kherson). RESEARCH OF SMALL PRODUCTIVITY ROTARY INJECTORS WORK
19. A.A. BOLOHOVETS, A.A. PAVLENKO (Kharkov). THE INFLUENCE OF WARMING IMPACT ON FUEL CHARGE MASS
21. A.S. VINOGRAVOD, I.D. SHPAKOV, Y.S. GORYACHKIN (Samara). ANALYSIS OF RADIAL FACE CONTACT SEAL EFFICIENCY IN THE SUPPORT OF THE AIRCRAFT ENGINE COMPRESSOR AT VARIOUS OPERATIONAL MODES
22. A.S. VINOGRAVOD, R.R. BADYKOV, A.V. MIRONOV (Samara). CREATING OF METHOD FOR SUPPORT SEAL AIRCRAFT ENGINE DESIGN WITH THE PARAMETERS OF OIL SYSTEM
23. A.Yu. TISAREV, N.M. VASILEVICH (Samara). INVESTIGATION OF LABIRINT SEAL PERFORMANCES WITH DEFORMATIONS OF SEALING SURFACES
24. A.Yu. TISAREV, N.M. VASILEVICH (Samara). STUDY OF THE TURBINE RIM SEAL LEAKAGE
25. D.K. NOVIKOV, D.S. DILIGENSKIY (Samara). DEVELOPMENT OF MODEL OF SQUEEZE-FILM DAMPER WITH METERING GROOVES
27. V.A. SAFONOV, PN KUZNETSOV, IL BELETSKY (Sevastopol). EXPERIMENTAL STUDY OF WORKING PROCESS THERMOMECHANICAL ENGINE.
September 18

Morning Meeting of Section

AUTOMATIC CONTROL SYSTEMS AND DIAGNOSTICS

September 18, 9:00 – 13:00

Chairmen:  V.F. Mirgorod, Dr. Eng. (JSC “Element”, Odessa);
            V.V. Panin, Dr. Eng. (NAU, Kiev);
            A.N. Reva, Dr. Eng. (KNTU, Kirovograd)
Secretary:  L.L. Yatsko, Ph.D. (JSC «STC «Electronprylad», Kiev)

1.  A.N. REVA, I.M. USTIMENKO, V.N. KOLTAKOV (Kirovograd, Krasnoyarsk). EFFICIENCY OF THE ORGANIZATION COMMUNICATIONS IN A SYSTEM OF AERONAVIGATION SERVICE OF FLIGHTS (ON THE EXAMPLE OF KRASNOYARSK AIR TRAFFIC SERVICE CENTER)

2.  A.N. REVA, S.P. BORSUK (Kirovohrad, Kyev) FUZZY MODEL OF AIR TRAFFIC CONTROLLERS ATTITUDE TO THE RISK OF POTENTIAL CONFLICTS SITUATION APPEARANCE

3.  A.N. REVA, B.M. MIRZAYEV, P.Sh. MUKHTAROV, Sh.Sh. NASIROV (Kirovograd, Baku). LEVEL OF CLAIMS OF AIR TRAFFIC CONTROLLERS FOR RESULTS OF WORKING LOAD

4.  V.A. SHULGIN (Kirovograd). INDISTINCT MEASURE OF INSTRUCTORS DISCERNMENT OF THE PILOTS PROFESSIONAL PREPAREDNESS APPRAISAL LEVEL

5.  L.V. KAPITANOVA (Kharkov). MAIN PARAMETERS INFLUENCE ON DECISION SPEED DURING TAKEOFF OF MODIFIED AIRPLANE

6.  V.V. LYUBCHENKO (Kiev). PROCESSING OF INFORMATION MANAGEMENT SYSTEM INDUSTRIES

7.  O.V. KHOMIAK (Kiev). ASSESSMENT OF LOSS IN RADIO PROPAGATION MODEL FOR POINT-TO-POINT FOR REFLECTION FROM LOCAL ITEMS

8.  B. DAVIDENKO (Kharkov). INFORMATION TECHNOLOGY OF SUPPORT OF DECISION-MAKING ON POPULATION EVACUATION FROM THE ZONE OF EMERGENCY SITUATIONS OF ANTHROPOGENIC CHARACTE
9. B. DAVIDENKO (Kharkov). METHOD OF COMPUTER MONITORING OF THE ZONE OF CHEMICAL POLLUTION IN CASE OF EMERGENCY EMISSIONS OF POISONING CHEMICALS IN THE ATMOSPHERE

10. M.V. POTAPOVA (Kharkov). BUSINESS PROCESS MANAGEMENT METHODS IN SOFTWARE FIRM ON THE BASIS OF UNDERDETERMINED PRINCIPLE

11. M.V. POTAPOVA (Kharkov). INFORMATION TECHNOLOGY OF SCHEDULING IN CASE OF PORTFOLIO MANAGEMENT OF ORDERS OF THE IT COMPANY IN THE CONDITIONS OF UNCERTAINTY

Morning Meeting of Section

TECHNOLOGY

September, 18, 9 00 – 13 00

Chairmen: L.P. Klymenko, Dr. Eng. (ChSU, Nikolayev); V.F. Sorokin, Dr. Eng. (KhAI, Kharkov)

Secretary: V.V. Kombarov (“KhAI”, Kharkov)

1. N.E. KALININA, A.E. KALINOVSKAIA, V.T. KALININ (Dnepropetrovsk). MATERIAL SCIENCE ASPECTS OF NANOMODIFICATION MULTICOMPONENT NICKEL ALLOYS

2. L. KLYMENKO, V. ANDREEV, L. DYKHTA, O. PRYSHCHEPOV (Nikolayev). THERMO-INSULATION COVERAGE OF WORKING SURFACE OF POROUS CASTING FORMS ARE FOR CASTING OF SHELLS OF CYLINDERS OF ENGINES


5. A.V. ONOPCHENKO, V.V. TRETYAK, N.I. CIVINDA, I.V. SKORCHENKO (Kharkov, Krivoy Rog). CALCULATION OF PARAMETERS OF PULSED DEFORMATION VOLUME PARTS WITH THE USE OF SPRUT TECHNOLOGIES


8. Yu.A. ZHULAY, V.Yu. SKOSAR (Dnepropetrovsk). HYDRODYNAMIC CAVITATION AS A TOOL TO INTENSIFY PRODUCTION PROCESSES. EXPERIENCE OF USAGE AND PROSPECTS (REVIEW)

9. T.P. NABOKINA, O.V. GAYDACHUK, O.M. GRUSHENKO (Kharkov). PIDVISCHENNYA EFEKTIVNOSTI PURIFIED TEHNOLOGICHNOGO OBLADANNYA TERMOGAZODINAMICHNIM METHOD FOR BLADES VIROBNITSTVI GTD

10. M.A. SUVOROV, V.V. TRETYAK, V.D. SOTNIKOV, S.V. HUDYAKOV (Kharkov). AUTOMATION OF DESIGN PROCESS OF AIRCRAFT ENGINE PARTS IN THE "VERTICAL"

11. V.V. TRETYAK, N.S. MATUSEVICH, Yu.A. NEVESHKIN, A.V. ONOPCHENKO, M.A. GOLOVANOVA (Kharkov). DEVELOPMENT OF INFORMATION AND MATHEMATICAL MODEL FOR CALCULATING THE ECONOMIC EFFICIENCY CAD PULSED PROCESSES

12. V.V. TRETYAK, N.S. MATUSEVICH, A.V. ONOPCHENKO, I.V. SKORCHENKO, T.G. ZEYNIEV (Kharkov). DEVELOPMENT AND USE OF THE CURRICULUM OF SYNTHESIS OF TECHNICAL SOLUTIONS FOR DESIGN AIRCRAFT


14. M. CHEHRESAZ (Kharkov). FEATURES OF BITANGENTIAL TREATMENT OF DIFFICULT SURFACES OF DETAIL OF AVIATION ENGINE WITH THE USE OF SOFTWARE TOPSOLID

15. V.S. GUSAREV, Yu.V. YUAROVOY (Odessa). EXPERIMENTAL STUDY OF DEPENDENCE OF TECHNOLOGICAL SYSTEM ACTION OF FORM-BUILDING MODES

16. V.A. DEMYANENKO (Kharkov). THE KNOWLEDGE-ORIENTED METHOD OF SUPPORT OF DECISION-MAKING BY TECHNOLOGICAL PREPARATION OF PRODUCTION OF CONSUMER GOODS AT MACHINE-BUILDING ENTERPRISE

17. V.A. DEMYANENKO (Kharkov). INFORMATION SUPPORT OF PRODUCTION OF CONSUMER GOODS AT MULTIPRODUCT MACHINE-BUILDING ENTERPRISE
18. R.Kh. MAKAYEVA, A.Kh. KARIMOV, A.M. TZAREVA (Kazan). APPLICATION OF HOLOGRAPHIC INTERFEROMETRY FOR THE TESTING OF QUALITY OF THE SOLDERED AND WELDED JOINT

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«PROJECT KHAI-ERA – MUTUALLY ADVANTAGEOUS COOPERATION UKRAINE – EUROPEAN UNION IN THE AVIATION TECHNOLOGY»

19. L. KORNILOV, V. VORONKO, Yu. VOROBYOV (Kharkiv), D. BERND (Magdeburg). SYSTEMATIC APPROACH TO THE FORMALIZATION OF THE AUTOMATED PROCESS ENGINEERING IN ASSEMBLING


21. Yu. VOROBYOV, I. VORONKO (Kharkiv). TECHNOLOGY RESEARCH IMPULSE HARDENING BURNISHING HOLES IN AVIATION PRODUCTS OF TITANIUM ALLOYS RESEARCH ON IMPULSE HOLES BURNISHING OF TITANIUM AIRCRAFT STRUCTURES

22. N. NECHYPORUK, Yu. VOROBYOV, I. DASHEVSKAYA (Kharkiv), D. BERND (Magdeburg). REVIEW OF RESEARCHES IN THE FIELD OF MORPHING AIRCRAFT

PLENARY MEETING

September 18, 1800 – 1900

1. Information of Sections Chairmen on the work results.
2. Consideration of work results of the XVIII-th International Congress of Propulsion Engineering.
3. Approval of the Congress decision.

Close
of the XVIII-th International Congress of Propulsion Engineering