



TRAINING OF SPECIALISTS-WELDERS OF KAZAKHSTAN IN UKRAINE

One of the tendencies of the modern industrial production is the transition to the International norms and standards. This widens greatly the opportunity of enterprises in cooperation with foreign partners in the scope of the products conformity to the established requirements. These tendencies are especially characteristic of the welding production, the efficiency of which is defined significantly by the quality of the personnel professional competence.

The professional training of the personnel, capable to realize the advantages of advanced welding technologies, has its peculiar features, connected with the specifics of the welding process and high requirements to the quality of the welded structures. These features have been realized in training programs of the International Institute of Welding, on the basis of which the international system of training and certification of the personnel is functioning, starting from the workers-welders and finishing by the diploma engineers on welding. Due to application of single training programs and standardized certification tests, the qualifications in the field of welding are recognized in different countries.

At the present time the training of the personnel of welding production within the frames of the International Certification System is carried out by the Authorized National Bodies (ANB), accredited by the IIW, one of which is the PWI Inter-Industry Training Certification Center (IITCC). Since 1998 the Center is an active participant of the international programs and showed itself as a reliable partner both in Ukraine and also abroad. The specialists, trained by it, are working successfully in many countries.

In April, 2014 a group of trainees of nine citizens of Kazakhstan came for training on program «International welder» in accordance with application of «Transcargo International Ltd.», participating in the State Program of accelerated



Teachers of IITCC: Drs G.E. Saksonov, E.P. Chvertko and P.P. Protsenko, Director of IITCC (*lower row*)

industrial-innovation development of Republic of Kazakhstan. During 16-week training they passed the full course of professional-theoretical and practical training, specified by the IIW program. They mastered the technique of manual arc coated electrode welding of different joints of flat parts and pipes of structural steels. From the results of the certification tests, including checking of theoretical knowledge and practical habits, the IITCC examination commission awarded five trainees the qualification of the International welder of pipes and four trainees the qualification of the International welder of plates.

Authority of «Transcargo International Ltd.» recognized the good level of organizing the theoretical and practical training, high skill of teachers and foremen of production training, quality of methodical provision of training process and expressed the readiness to continue cooperation in the field of professional training of personnel also in accordance with other international qualifications.

Dr. P.P. Protsenko, PWI IITCC

INDEX OF ARTICLES FOR TPWJ'2014, Nos. 1–12

Pilot Plant of Welding Equipment of the E.O. Paton Electric Welding Institute at the nowadays stage	4	Influence of active gas content and disperse filler continuity on the process of bead formation in microplasma powder surfacing of nickel superalloys (Yushchenko K.A. and Yarovitsyn A.V.)	6/7
The 80th Anniversary of the E.O. Paton Electric Welding Institute of the NAS of Ukraine	9	Investigation of influence of microalloying with titanium and boron of weld metal on its mechanical properties in underwater welding (Maksimov S.Yu., Machulyak V.V., Sheremeta A.V. and Goncharenko E.I.)	6/7
VIII INTERNATIONAL CONFERENCE ON WELDING CONSUMABLES			
CONSUMABLES FOR MANUAL ARC WELDING			
Electrodes for welding of dissimilar chromium martensitic and chromium-nickel austenitic steels (Zakharov L.S., Gavrik A.R. and Lipodaev V.N.)	6/7	Manufacturing defects in welding consumables influencing the quality of welded joints (Turyk E.V.)	6/7
Heating and melting of electrodes with exothermic mixture in coating (Vlasov A.F., Makarenko N.A. and Kushchy A.M.)	6/7	Materials for strengthening of gas turbine blades (Kostin A.M., Butenko A.Yu. and Kvasnitsky V.V.)	6/7
Investigation of composition and structure of weld metal of Kh20N9G2B type made in wet underwater welding (Yushchenko K.A., Bulat A.V., Kakhovsky N.Yu., Samoilenko V.I., Maksimov S.Yu. and Grigorenko S.G.)	6/7	New capabilities of the oldest enterprise on production of welding fluxes (Zalevsky A.V., Galinich V.I., Goncharov I.A., Osipov N.Ya., Netyaga V.I. and Kirichenko O.P.)	6/7
Investigation of transition zone of low-carbon steel joint with high-alloyed Cr-Ni deposited metal (Yushchenko K.A., Kakhovsky Yu.N., Bulat A.V., Morozova R.I., Zvyagintseva A.V., Samoilenko V.I. and Olejnik Yu.V.)	6/7	Physical-metallurgical and welding-technological properties of gas-shielded flux-cored wires for welding of structural steels (Shlepakov V.N.)	6/7
Status of normative base, certification and attestation of welding consumables in Ukraine (Protsenko N.A.)	6/7	Restoration and strengthening surfacing of parts of die equipment (Solomka E.A., Lobanov A.I., Orlov L.N., Golyakevich A.A. and Khilko A.V.)	6/7
Towards the problem of dispersity and morphology of particles in welding aerosols (Gubanya I.P., Yavdoshchin I.R., Stepanyuk S.N. and Demetskaya A.V.)	6–7	Role of welding flux in formation of weld metal during arc welding of high-strength low-alloy steels (Golovko V.V., Stepanyuk S.N. and Ermolenko D.Yu.)	6/7
Ultraviolet radiation in manual arc welding using covered electrodes (Levchenko O.G., Malakhov A.T. and Arlamov A.Yu.)	6/7	Selection of shielding gas for mechanized arc welding of dissimilar steels (Elagin V.P.)	6/7
CONSUMABLES FOR MECHANIZED METHODS OF WELDING			
Application of flux-cored wires for welding in industry (Rosert R.)	6/7	Tungsten carbide based cladding materials (Zhudra A.P.)	6/7
Application of pulse atomizing jet in electric arc metallizing (Royanov V.A. and Bobikov V.I.)	6/7	PROCESSES OF ARC WELDING. METALLURGY. MARKETS	
Development of high-vanadium alloy for plasma-powder surfacing of knives for cutting of non-metallic materials (Pereplyotchikov E.F.)	6/7	Application of shielding gases in welding production (Review) (Paton B.E., Rimsky S.T. and Galinich V.I.)	6/7
Discrete filler materials for surfacing in current-conducting mould (Kuskov Yu.M.)	6/7	Effect of scandium-containing wire on structure and properties of joints of aluminum-lithium alloys produced by argon-arc welding (Markashova L.I., Kushnaryova O.S. and Alekseenko I.I.)	6/7
Effectiveness of application of new consumables in welding and surfacing of copper and its alloys (Review) (Ilyushenko V.M., Anoshin V.A., Majdanchuk T.B. and Lukianchenko E.P.)	6–7	Effect of structural factors on mechanical properties and crack resistance of welded joints of metals, alloys and composite materials (Markashova L.I., Poznyakov V.D., Berdnikova E.N., Gajvoronsky A.A. and Alekseenko T.A.)	6/7
Evaluation of suitability of welding wire of Sv-10GN1MA type produced by ESAB for manufacturing NPP equipment (Livshits I.M.)	6/7	Ensuring integrity of welded structures and constructions at their long-term service with application of renovation technologies (Steklov O.I., Antonov A.A. and Sevostianov S.P.)	6/7
Flux-cored strips for wear-resistant surfacing (Voronchuk A.P.)	6/7	Interaction of hydrogen with deformed metal (Paltsevich A.P., Sinyuk V.S. and Ignatenko A.V.)	6/7
Flux-cored wires for surfacing of steel hot mill rolls (Konratiev I.A. and Ryabtsev I.A.)	6/7	Investigation of cracking susceptibility of austenitic material using PVR-test procedure (Yushchenko K.A., Savchenko V.S., Chervyakov N.O., Zvyagintseva A.V., Monko G.G. and Pestov V.A.)	6/7
Flux for electric arc surfacing providing high-temperature removal of slag coating (Strelenko N.M., Zhdanov L.A. and Goncharov I.A.)	6/7	Market of welding consumables in Ukraine (Mazur A.A., Pustovojt S.V., Petruk V.S. and Brovchenko N.S.)	6/7
		Peculiarities of degradation of metal of welded joints of steam pipelines of heat power plants (Dmitriuk V.V. and Bartash S.N.)	6/7

Underwater welding and cutting in CIS countries (Kononenko V.Ya.)	6/7	Electron beam welding of sheet commercial titanium VT1-0, hardened by nitrogen in the process of arc-slag remelting, and properties of produced joints (Saenko V.Ya., Polishko A.A., Ryabinin V.A. and Stepanyuk S.N.)	11
TECHNOLOGIES, EQUIPMENT AND CONTROL IN CONSUMABLES PRODUCTION			
Directions of improvement of equipment and technology for electrode manufacture (Gnatenko M.F., Voroshilo V.S. and Suchok A.D.)	6/7	Estimation of possibility for producing full-strength joint of large steel parts using the method of autovacuum brazing of threaded profile (Polshchuk M.A., Atroshenko M.G., Puzrin A.L. and Shevtsov V.L.)	10
Effect of charge grain composition on rheological characteristics on rheological characteristics of compounds for low-hydrogen electrodes (Marchenko A.E.)	6/7	Fatigue calculation for welded joints of bearing elements of freight car bogie (Lobanov L.M., Makhnenko O.V., Saprykina G.Yu. and Pustovoj A.D.)	10
Improvement of adaptability to fabrication and welding properties of electrodes for tin bronze welding and surfacing (Majdanchuk T.B. and Skorina N.V.)	6/7	Features of reconditioning steel drill bit watercourse (Stefaniv B.V., Khorunov V.F., Sabadash O.M., Maksymova S.V. and Voronov V.V.)	11
State of raw material base of electrode production (Palievskaya E.A. and Sidlin Z.A.)	6/7	Flash-butt welding of thin-walled profiles of heat-hardened aluminium alloys (Chvertko P.N., Semyonov L.A. and Gushchin K.V.)	12
Thickness difference of electrode coatings caused by elastic turbulence of electrode compounds under condition of non-isothermal pressure flow (Marchenko A.E.)	6/7	Hybrid laser-GMA girth welding technologies for transmission pipelines (Keitel S. and Neubert J.)	4
INDUSTRIAL			
Analysis of some physical and technical characteristics of ion-plasma coating (TiZr)N on rotor blades of compressor of gas-turbine engine TV3-117 (Korsunov K.A. and Ashikhmina E.A.)	2	Industrial electron beam installation L-8 for deposition of heat-protective coatings on turbine blades (Grechanyuk N.I., Kucherenko P.P., Melnik A.G., Kovalchuk D.V. and Grechanyuk I.N.)	10
Application of complex-alloyed powders produced by thermocentrifugal sputtering in flux-cored wires (Zhudra A.P., Krivchikov S.Yu. and Dzykovich V.I.)	12	Joining of thick metal by multipass electroslag welding (Yushchenko K.A., Kozulin S.M., Lychko I.I. and Kozulin M.G.)	9
Assessment of effectiveness of residual stress lowering in circumferential joints of pipes after postweld explosion treatment (Bryzgalin A.G.)	5	Linear friction welding of metallic materials (Review) (Zyakhov I.V., Zavertanny M.S. and Chernobaj S.V.)	12
Automatic machine for wet underwater welding in confined spaces (Lebedev V.A., Maksimov S.Yu., Pichak V.G. and Zajnuln D.I.)	9	Modernization of control system of A1756 machine for plasma-powder surfacing (Pereplyotchikov E.F., Ryabtsev I.A., Lankin Yu.N., Semikin V.F. and Osechkov P.P.)	12
Braze-welded tubular billets for pipelines and high-pressure vessels (Pismenny A.A., Gubatyuk R.S., Prokofiev A.S., Muzhichenko A.F. and Shinkarenko A.S.)	10	Peculiarities of application of supercapacitors in devices for pulse welding technologies (Korotynsky A.E., Drachenko N.P. and Shapka V.A.)	9
Calculation of upsetting force in flash butt welding of closed-shape products (Chvertko P.N., Moltasov A.V. and Samotryasov S.M.)	1	Percussion capacitor-discharge welding of wire of composite superconducting alloy (Kaleko D.M.)	4
Computer-based technologies and their influence on welding education (Keitel S., Ahrens C. and Moll H.)	10	Producing of bimetal joints by laser welding with full penetration (Schmidt M. and Kuryntsev S.V.)	4
Development of technologies of repair by arc welding of operating main pipelines in Ukraine (But V.S. and Olejnik O.I.)	5	Properties of fusion-welded joints on high-strength titanium alloy T110 (Akhonin S.V., Belous V.Yu., Antonyuk S.L., Petrichenko I.K. and Selin R.V.)	1
Dry ice — useful material in welding performance (Zhiznyakov S.N.)	4	Prospects for development of load-carrying elements of freight car bogie (Makhnenko O.V., Saprykina G.Yu., Mirzov I.V. and Pustovoj A.D.)	3
Effectiveness of natural gas transportation by sea at application of high pressure welded cylinders (Paton B.E., Savitsky M.M., Savitsky A.M. and Mazur A.A.)	8	Reasons of stress corrosion failure of erection girth joint of main gas pipeline (Rybakov A.A., Goncharenko L.V., Filipchuk T.N., Lohman I.V. and Burak I.Z.)	3
Effectiveness of strengthening butt welded joints after long-term service by high-frequency mechanical peening (Knysh V.V., Solovej S.A. and Kuzmenko A.Z.)	11	Resistance butt welding of concrete reinforcement in construction site (Chvertko P.N., Goronkov N.D., Vinogradov N.A., Samotryasov S.M. and Sysoev V.Yu.)	3
Electrode and filler materials for surfacing and welding of cast tin bronzes (Review) (Majdanchuk T.B.)	1	Sanitary-hygienic evaluation of noise in manual arc welding with covered electrodes (Levchenko O.G., Kuleshov V.A. and Arlamov A.Yu.)	9
Electron beam welding of large-size thick-wall structures of magnesium alloys (Nesterenkov V.M. and Bondarev A.A.)	2	State-of-the-art and prospects of world and regional markets of welding materials (Review) (Mazur A.A., Pustovojt S.V., Makovetskaya O.K., Brovchenko N.S. and Petruk V.S.)	11

Structure and properties of welded joints of 15Kh1M1FL steel at repair of casting defects by transverse hill method (Efimenko N.G., Atozhenko O.Yu., Vavilov A.V., Kantor A.G. and Udalova E.I.)

Technological peculiarities of laser microplasma and hybrid laser-microplasma welding of aluminium alloys (Shelyagin V.D., Orishich A.M., Khaskin V.Yu., Malikov A.G. and Chajka A.A.)

Technology for manufacture of gas-and-oil line pipes using high-frequency method of welding at Company «Interpipe NMPP» (Antipov Yu.N., Dmitrenko E.V., Kovalenko A.V., Goryanov S.A., Rybakov A.A., Semyonov S.E. and Filipchuk T.N.)

Wear-resistant arc surfacing over the layer of alloying charge (Peremitko V.V.)

Welded structure of Kiev TV-tower is 40 years old (Lobanov L.M., Garf E.F., Kopylov L.N. and Sineok A.G.)

55th ANNIVERSARY OF WELDING PRODUCTION CHAIR OF ADMIRAL MAKAROV NATIONAL SHIPBUILDING UNIVERSITY

Effect of stress-strain state on structure and properties of joints in diffusion welding of dissimilar metals (Kvasnitsky V.V., Kvasnitsky V.F., Markashova L.I. and Matvienko M.V.)

Effect of weld convexity sizes on stress state of butt joint during tension (Ermolaev G.V., Martynenko V.A. and Marunich I.V.)

Increase of service properties of electric-arc and plasma coatings by use of electric-pulse effect on double-phase high-temperature flow (Dubovoj A.N., Karpechenko A.A. and Bobrov M.N.)

Instability of mode in circuit with capacity and electric arc supplied by direct current source (Vereshchago E.N. and Kostyuchenko V.I.)

Regularities of creation of modified interlayers in using of highly-concentrated energy flows (Kvasnitsky V.F., Kvasnitsky V.V., Cherenda N.N., Koval N.N. and Levchenko I.L.)

Stress-strain state at force and temperature loading of assemblies from dissimilar steels with soft interlayer (Kolesar I.A. and Ermolaev G.V.)

Technological characteristics of automatic submerged arc surfacing with high-frequency oscillations of electrode end (Lebedev V.A., Dragan S.V., Goloborodko Zh.G., Simutenkov I.V. and Yaros Yu.A.)

INFORMATION

Paton Turbine Technologies — new name of a well-known company

The 55th Anniversary of the Experimental Design Technological Bureau of the E.O. Paton Electric Welding Institute

Today's Foreign Trade Company «INPAT» of the E.O. Paton Electric Welding Institute

Training of specialists-welders of Kazakhstan in Ukraine 20 years in the world of flux-cored wires

NEWS

International Conference «Welding Consumables»

International Conference «Welding and Related Technologies — Present and Future»

The Evgeny Paton Prize Winners of 2013

SCIENTIFIC AND TECHNICAL

Analysis and procedure of calculation of series connection electronic devices for contactless arc excitation (Makhlin N.M. and Korotynsky A.E.)

Cermet coatings of chromium carbide-nichrome system produced by supersonic plasma gas air spraying (Korzhih V.N., Borisova A.L., Popov V.V., Kolomytsev M.V., Chajka A.A., Tkachuk V.I. and Vigilyanskaya N.V.)

Cracking susceptibility of welded joints in repair structures on main gas pipelines (But V.S., Maksimov S.Yu. and Olejnik O.I.)

Deformation-free welding of stringer panels of titanium alloy VT20 (Paton B.E., Lobanov L.M., Lysak V.L., Knysh V.V., Pavlovsky V.I., Prilutsky V.P., Timoshenko A.N., Goncharov P.V. and Guan Qiao)

Determination of the causes for crack initiation in structural elements of the tower of new ventilation pipe at Chernobyl NPP (Torop V.M., Garf E.F., Yakimkin A.V. and Gopkalo E.E.)

Detonation coatings of composite powder of ferromolybdenum-silicon carbide produced using method of mechanical-and-chemical synthesis (Borisov Yu.S., Borisova A.L., Astakhov E.A., Burlachenko A.N., Ipatova Z.G. and Gorban V.F.)

Effect of cyclic load on microstructure and cold resistance of the 10G2FB steel HAZ metal (Poznyakov V.D., Markashova L.I., Maksimenko A.A., Berdnikova E.N., Alekseenko T.A. and Kasatkin S.B.)

Effect of electric parameters of arc surfacing using flux-cored wire on process stability and base metal penetration (Lankin Yu.N., Ryabtsev I.A., Soloviov V.G., Chernyak Ya.P. and Zhdanov V.A.)

Effect of nickel and manganese on structure of Ag-Cu-Zn-Sn system alloys and strength of brazed joints (Khorunov V.F., Stefaniv B.V. and Maksymova S.V.)

Effect of temperature of thermomechanical treatment on quality of dissimilar metal joints (Demidenko L.Yu., Onatskaya N.A. and Polovinka V.D.)

Elimination of local deformations of buckling type by means of electrodynamic treatment (Lobanov L.M., Pashchin N.A., Mikhoduj O.L. and Solomijchuk T.G.)

Fatigue life of deposited repair welds on single-crystal high-temperature nickel alloy under cyclic oxidation (Belyavin A.F., Kurenkova V.V. and Fedotov D.A.)

Features of melting, structure and properties of Ni-Mn-Cu system nickel alloys (Khorunov V.F. and Lototsky P.N.)

High-power laser welding of austenitic stainless steel with electromagnetic control of weld pool (Bachmann M., Avilov V., Gumenyuk A. and Rethmeier M.)

Improvement of power efficiency of machines for resistance spot welding by longitudinal compensation of reactive power (Pismenny A.A.)

Improvement of the procedure of mode parameter calculation for gas-shielded multipass welding (Buzorina D.S., Sholokhov M.A. and Shalimov M.P.)

Increase of fatigue resistance of sheet welded joints of aluminum alloys using high-frequency peening (Knysh V.V., Klochkov I.N., Pashulya M.P. and Motrunich S.I.)

Influence of heating rate on inflammation temperature of multilayer Ti/Al foil (Kuzmenko D.N., Ustinov A.I., Kotsintsev S.G. and Petrushinets L.V.)

Influence of non-metallic inclusions in pipe steels of strength class X65–X80 on values of impact toughness of flash-butt welded joints (Kuchuk-Yatsenko S.I., Shvets Yu.V. and Shvets V.I.)	12	Peculiarities of structure of coatings of Fe–Cr–Al system flux-cored wire produced under conditions of supersonic electric arc metallization (Korzhih V.N., Borisova A.L., Gordan G.N., Lyutik N.P., Chajka A.A. and Kajda T.V.)	2
Influence of non-uniformity of heating on upsetting force value and forging time in flash-butt welding of flat ring (Moltasov A.V., Samotryasov S.M., Knysh V.V., Chvertko P.N. and Gushchin K.V.)	10	Prediction of thermodynamical properties of melts of CaO–Al ₂ O ₃ system (Goncharov I.A., Galinich V.I., Mishchenko D.D. and Sudavtsova V.S.)	4
Integrated evaluation of effect of main impurities on weldability of copper (Anoshin V.A., Ilyushenko V.M., Bondarenko A.N., Lukianchenko E.P. and Nikolaev A.K.)	11	Quasi-crystalline alloys-fillers for composite layers produced using method of furnace surfacing (Sukhovaya E.V.)	1
Investigation of spraying spot and metallization pattern under conditions of microplasma spraying of coatings of titanium dioxide (Borisov Yu.S., Vojnarovich S.G., Kislitsa A.N. and Kalyuzhny S.N.)	12	Redistribution of residual welding stresses in in-vessel core barrel of WWER-1000 reactor during operation (Makhnenko O.V., Velikoivanenko E.A. and Mirzov I.V.)	11
Investigation of thermal resistance of deposited metal designed for restoration of mill rolls (Babinets A.A., Ryabtsev I.A., Kondratiev I.A., Ryabtsev I.I. and Gordan G.N.)	5	Resistance to cold crack formation of HAZ metal of welded joint on high-strength carbon steels (Gajvoronsky A.A.)	2
Investigation of wear resistance of composite alloys under the conditions of gas-abrasive wear at elevated temperatures (Zhudra A.P.)	11	Simulation of electric arc with refractory cathode and evaporating anode (Krikent I.V., Krivtsun I.V. and Demchenko V.F.)	9
Laser and laser-microplasma alloying of surface of 38KhN3MFA steel specimens (Shelyagin V.D., Markashova L.I., Khaskin V.Yu., Bernatsky A.V. and Kushnaryova O.S.)	2	Structural changes in overheating zone of HAZ metal of railway wheels in arc surfacing (Gajvoronsky A.A., Zhukov V.V., Vasiliev V.G., Zuber T.A. and Shishkevich A.S.)	1
Methods of mathematical modelling of the processes of electrode metal drop formation and transfer in consumable electrode welding (Review) (Semyonov A.P.)	10	Structural features of FSW joints of metals with different element solubility in the solid phase (Grigorenko G.M., Adeeva L.I., Tunik A.Yu., Stepanyuk S.N., Poleshchuk M.A. and Zelenin E.V.)	4
Microstructure of brazed joints of nickel aluminide (Maksymova S.V., Khorunov V.F., Myasoed V.V., Voronov V.V. and Kovalchuk P.V.)	10	Structure of surface-melted zone of cast high-nickel alloy KhN56MBYuDSH after laser surface treatment (Polishko A.A., Saenko V.Ya., Tunik A.Yu. and Stepanyuk S.N.)	3
Modeling of weld pool behaviour in spot welding by pulsed laser radiation (Semyonov A.P., Shuba I.V., Krivtsun I.V. and Demchenko V.F.)	4	System for measurement of temperature of biological tissues in bipolar high-frequency welding (Lankin Yu.N., Sushy L.F. and Bajshtruk E.N.)	11
Numerical modeling and prediction of weld microstructure in high-strength steel welding (Review) (Ermolenko D.Yu. and Golovko V.V.)	3	Technological peculiarities of welding of wrought magnesium alloys by electron beam in vacuum (Bondarev A.A. and Nesterenkov V.M.)	3
Peculiarities of alloying of weld metal of high-strength aluminium alloy welded joints with scandium (Fedorchuk V.E., Kushnaryova O.S., Alekseenko T.A. and Falchenko Yu.V.)	5	Tribotechnical properties of deposited metal of 50Kh9S3G type with increased sulphur content (Osин V.V.)	12
		Index of articles for TPWJ'2014, Nos. 1–12	12
	5	List of authors	12

LIST OF AUTHORS

- A**deeva L.I. No.4
Ahrens C. No.10
Akhonin S.V. No.1
Alekseenko I.I. Nos. 6/7
Alekseenko T.A. No.5(2), 6/7
Anoshin V.A. No.6/7, 11
Antipov Yu.N. No.3
Antonov A.A. Nos. 6/7
Antonyuk S.L. No.1
Arlamov A.Yu. No.6/7, 9
Ashikhmina E.A. No.2
Astakhov E.A. No.3
Atozhenko O.Yu. No.2
Atroschenko M.G. No.10
Avilov V. No.3
- B**abinets A.A. No.5
Bachmann M. No.3
Bajshtruk E.N. No.11
Bartash S.N. Nos. 6/7
Belous V.Yu. No.1
Belyavin A.F. No.2
Berdnikova E.N. No.5, 6/7
Bernatsky A.V. No.2
Bobikov V.I. Nos. 6/7
Bobrov M.N. No.8
Bondarenko A.N. No.11
Bondarev A.A. No.2, 3
Borisov Yu.S. No.3, 12
Borisova A.L. No.2, 3, 12
Brovchenko N.S. No.6/7, 11
Bryzgalin A.G. No.5
Bugaenko B.V. No.8
Bulat A.V. Nos. 6/7(2)
Burak I.Z. No.3
Burlachenko A.N. No.3
But V.S. No.5, 11
Butenko A.Yu. Nos. 6/7
Buzorina D.S. No.10
- C**hajka A.A. No.2, 5, 12
Cherenda N.N. No.8
Chernobaj S.V. No.12
Chernyak Ya.P. No.9
Chervyakov N.O. Nos. 6/7
Chvertko P.N. No.1, 3, 10, 12
- D**emchenko V.F. No.4, 9
Demetskaya A.V. Nos. 6/7
Demidenko L.Yu. No.12
Dmitrenko E.V. No.3
Dmitrik V.V. Nos. 6/7
Drachenko N.P. No.9
Dragan S.V. No.8
- Dubovoj A.N. No.8
Dzykovich V.I. No.12
- E**fimenko N.G. No.2
Elagin V.P. Nos. 6/7
Emelianov V.M. No.8
Ermolaev G.V. No.8(2)
Ermolenko D.Yu. No.3, 6/7
- F**alchenko Yu.V. No.5
Fedorchuk V.E. No.5
Fedotov D.A. No.2
Filipchuk T.N. No.3(2)
- G**ajvoronsky A.A. No.1, 2, 6/7
Galinich V.I. No.4, 6/7(2)
Garf E.F. No.1(2)
Gavrik A.R. Nos. 6/7
Gnatenko M.F. Nos. 6/7
Goloborodko Zh.G. No.8
Golovko V.V. No.3, 6/7
Golyakevich A.A. Nos. 6/7
Goncharenko E.I. Nos. 6/7
Goncharenko L.V. No.3
Goncharov I.A. No.4, 6/7(2)
Goncharov P.V. No.9
Gopkalo E.E. No.1
Gorban V.F. No.3
Gordan G.N. No.2, 5
Goronkov N.D. No.3
Goryanoj S.A. No.3
Grechanyuk I.N. No.10
Grechanyuk N.I. No.10
Grigorenko G.M. No.4
Grigorenko S.G. Nos. 6/7
Guan Qiao No.9
Gubatyuk R.S. No.10
Gubenya I.P. Nos. 6/7
Gumenyuk A. No.3
Gushchin K.V. No.10, 12
- I**gnatenko A.V. No.6/7
Ilyushenko V.M. No. 6/7, 11
Ipatova Z.G. No.3
- K**ajda T.V. No.2
Kakhovsky N.Yu. Nos. 6/7
Kakhovsky Yu.N. Nos. 6/7
Kaleko D.M. No.4
Kalyuzhny S.N. No.12
Kantor A.G. No.2
Karpechenko A.A. No.8
Kasatkin S.B. No.5
Keitel S. No.4, 10
Khaskin V.Yu. No.2, 5

Khilko A.V. Nos. 6/7
Khorunov V.F. No.4, 5, 10, 11
Kirichenko O.P. Nos. 6/7
Kislitsa A.N. No.12
Klochkov I.N. No.5
Knysh V.V. No.5, 9, 10, 11
Kolesar I.A. No.8
Kolomytsev M.V. No.12
Kondratiev I.A. No.5, 6/7
Kononenko V.Ya. Nos. 6/7
Kopylov L.N. No.1
Koritsky V.A. No.4
Korotynsky A.E. No.1, 9
Korsunov K.A. No.2
Korzhih V.N. No.2, 12
Kosintsev S.G. No.10
Kostin A.M. No.6/7, 8
Kostyuchenko V.I. No.8
Koval N.N. No.8
Kovalchuk D.V. No.10
Kovalchuk P.V. No.10
Kovalenko A.V. No.3
Kozulin M.G. No.9
Kozulin S.M. No.9
Krikent I.V. No.9
Krivchikov S.Yu. No.12
Krivtsun I.V. No.4, 9
Kucherenko P.P. No.10
Kuchuk-Yatsenko S.I. No.12
Kuleshov V.A. No.9
Kurenkova V.V. No.2
Kuryntsev S.V. No.4
Kushchy A.M. Nos. 6/7
Kushnaryova O.S. No.2, 5, 6/7
Kuskov Yu.M. Nos. 6/7
Kuzmenko A.Z. No.11
Kuzmenko D.N. No.10
Kvasnitsky V.F. No.8(2)
Kvasnitsky V.V. No.6/7, 8(2)

Lankin Yu.N. No.9, 11, 12
Lebedev V.A. No.8, 9
Levchenko I.L. No.8
Levchenko O.G. No.6/7, 9
Lipodaev V.N. No.1, 6/7, 8
Livshits I.M. Nos. 6/7
Lobanov A.I. Nos. 6/7
Lobanov L.M. No.1, 9, 10, 11
Lokhman I.V. No.3
Lototsky P.N. No.5
Lukianchenko E.P. No.6/7, 11
Lychko I.I. No.9
Lysak V.L. No.9
Lyutik N.P. No.2

Machulyak V.V. Nos. 6/7
Majdanchuk T.B. No.1, 6/7(2)
Makarenko N.A. Nos. 6/7
Makhlin N.M. No.1

Makhnenko O.V. No.3, 10, 11
Makovetskaya O.K. No.11
Maksimenko A.A. No.5
Maksimov S.Yu. No.6/7(2), 9, 11
Maksymova S.V. No.4, 10, 11
Malakhov A.T. Nos. 6/7
Malikov A.G. No.5
Marchenko A.E. Nos. 6/7(2)
Marinsky G.S. No.9
Markashova L.I. No.2, 5, 6/7(2), 8
Martynenko V.A. No.8(2)
Marunich I.V. No.8
Matvienko M.V. No.8
Mazur A.A. No.6/7, 8, 11
Melnik A.G. No.10
Mikhoduj O.L. No.11
Mirzov I.V. No.3, 11
Mishchenko D.D. No.4
Moll H. No.10
Moltasov A.V. No.1, 10
Monko G.G. Nos. 6/7
Morozova R.I. Nos. 6/7
Motrunich S.I. No.5
Muzhichenko A.F. No.10
Myasoed V.V. No.10

Nesterenkov V.M. No.2, 3
Netyaga V.I. Nos. 6/7
Neubert J. No.4
Nikolaev A.K. No.11

Olejnik O.I. No.5, 11
Olejnik Yu.V. Nos. 6/7
Onatskaya N.A. No.12
Orishich A.M. No.5
Orlov L.N. Nos. 6/7
Osechkov P.P. No.12
Osin V.V. No.12
Osipov N.Ya. Nos. 6/7

Palievskaya E.A. Nos. 6/7
Paltsevich A.P. Nos. 6/7
Pashchin N.A. No.11
Pashulya M.P. No.5
Paton B.E. No.6/7, 8, 9
Pavlovsky V.I. No.9
Peremitko V.V. No.8
Pereplyotchikov E.F. No.6/7, 12
Pestov V.A. Nos. 6/7
Petrichenko I.K. No.1
Petruk V.S. No.6/7, 11
Petrushinets L.V. No.10
Pichak V.G. No.9
Pismenny A.A. No.1, 10
Poleshchuk M.A. No.4, 10
Polishko A.A. No.3, 11
Polovinka V.D. No.12
Popov V.V. No.12
Poznyakov V.D. No.5, 6/7

Prilutsky V.P. No.9
Prokofiev A.S. No.10
Protsenko N.A. Nos. 6/7
Protsenko P.P. No.12
Pustovoj A.D. No.3, 10
Pustovojt S.V. No.6/7, 11
Puzrin A.L. No.10

Rethmeier M. No.3
Rimsky S.T. Nos. 6/7
Rosert R. Nos. 6/7
Royanov V.A. Nos. 6/7
Ryabinin V.A. No.11
Ryabtsev I.A. No.5, 6/7, 9, 12
Ryabtsev I.I. No.5
Rybakov A.A. No.3(2)

Sabadash O.M. No.11
Saenko V.Ya. No.3, 11
Samojlenko V.I. Nos. 6/7(2)
Samotryasov S.M. No.1, 3, 10
Saprykina G.Yu. No.3, 10
Savchenko V.S. Nos. 6/7
Savitsky A.M. No.8
Savitsky M.M. No.8
Schmidt M. No.4
Selin R.V. No.1
Semikin V.F. No.12
Semyonov A.P. No.4, 10
Semyonov L.A. No.12
Semyonov S.E. No.3
Sevostianov S.P. Nos. 6/7
Shalimov M.P. No.10
Shapka V.A. No.9
Shelyagin V.D. No.2, 5
Sheremeta A.V. Nos. 6/7
Shevtsov V.L. No.10
Shinkarenko A.S. No.10
Shishkevich A.S. No.1
Shlepakov V.N. Nos. 6/7
Sholokhov M.A. No.10
Shuba I.V. No.4
Shvets V.I. No.12
Shvets Yu.V. No.12
Sidlin Z.A. Nos. 6/7
Simutenkov I.V. No.8
Sineok A.G. No.1
Sinyuk V.S. Nos. 6/7
Skorina N.V. Nos. 6/7
Solomijchuk T.G. No.11
Solomka E.A. Nos. 6/7
Solovej S.A. No.11
Soloviov V.G. No.9

Stefaniv B.V. No.4, 11
Steklov O.I. Nos. 6/7
Stepakhno A.V. No.4(2)
Stepanyuk S.N. No.3, 4, 6/7(2), 11
Strelenko N.M. Nos. 6/7
Suchok A.D. Nos. 6/7
Sudavtsova V.S. No.4
Sukhovaya E.V. No.1
Sushy L.F. No.11
Sysoev V.Yu. No.3

Timoshenko A.N. No.9
Tkachuk V.I. No.12
Torop V.M. No.1
Tunik A.Yu. No.3, 4
Turyk E.V. Nos. 6/7

Udalova E.I. No.2
Ustinov A.I. No.10

Vasiliev V.G. No.1
Vavilov A.V. No.2
Velikoivanenko E.A. No.11
Vereshchago E.N. No.8
Vigilyanskaya N.V. No.12
Vinogradov N.A. No.3
Vlasov A.F. Nos. 6/7
Vojnarovich S.G. No.12
Voronchuk A.P. Nos. 6/7
Voronov V.V. No.10, 11
Voroshilo V.S. Nos. 6/7

Yakimkin A.V. No.1
Yaros Yu.A. No.8
Yarovitsyn A.V. Nos. 6/7
Yavdoshchin I.R. Nos. 6/7
Yushchenko K.A. No.6/7(4), 9

Zajnuln D.I. No.9
Zakharov L.S. Nos. 6/7
Zalevsky A.V. Nos. 6/7
Zavertanny M.S. No.12
Zelenin E.V. No.4
Zelnichenko A.T. No.1, 8
Zhdanov L.A. Nos. 6/7
Zhdanov V.A. No.9
Zhiznyakov S.N. No.4
Zhudra A.P. No.6/7, 11, 12
Zhuk G.V. No.9
Zhukov V.V. No.1
Zuber T.A. No.1
Zvyagintseva A.V. Nos. 6/7(2)
Zyakhor I.V. No.12