

EDITORIAL BOARD OF
ZAVODSKAYA
LABORATORIYA

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 1

January, 1965

CONTENTS

	PAGE	RUSS. PAGE
Modern Methods of Mechanical Testing in Industry. <u>Ya. B. Fridman</u>	1	3
METHODS OF CHEMICAL ANALYSIS		
The Development of Polarographic Analysis of Inorganic Substances (Review). <u>I. V. Pyatnitskii</u>	3	6
The Use in Polarographic Analysis of a Polarizing Voltage Consisting of Exponential Jumps <u>M. R. Vyaselev</u>	16	21
Polarographic Determination of Copper in the Presence of Large Amounts of Iron. <u>E. G. Chikryzova and S. Ya. Mashinskaya</u>	21	26
Determining Cerium in a Mixture of Rare Earth Elements by Film Polarographic Analysis. <u>Kh. Z. Brainina and T. A. Rygailo</u>	24	28
The Spectrophotometric Titration of Nitro-Derivatives of Amines in Nonaqueous Solvents. <u>A. P. Kreshkov and V. I. Vasil'ev</u>	27	30
Determination of the Lower Aluminum Alkyls by Means of Hydrolysis. <u>G. S. Shvindlerman and É. N. Zavadovskaya</u>	30	32
The Amperometric Titration of Palladium with Thiourea and Its Derivatives. <u>Yu. I. Usatenko and A. I. Tolubara</u>	32	34
A Method for Determining Chlorocarboxylic Acids. <u>K. A. Snegarev and L. P. Kozhevnikova</u>	35	36
The Determination of Chlorofose by Circular Chromatography on Paper. <u>T. I. Golubev, G. A. Odumanova-Dunaeva, and V. A. Volkova</u>	36	37
The Photocolorimetric Determination of Copper with Oxalyl Dihydrazide (Exchange of Experience). <u>T. V. Matrosova</u>	38	38
The Use of Diethyldithiocarbamate Extraction for the Pulse-Polarographic Determination of Tellurium (Exchange of Experience). <u>B. Ya. Kaplan and O. A. Shiryayeva</u>	39	39
The Conductimetric Determination of Fluorine, Iodine, and Chlorine (Exchange of Experience). <u>L. M. Shtifman, A. A. Mityaeva, and V. T. Shemyatenkova</u>	40	39
Cuprometric Determination of Chromate Ion (Exchange of Experience). <u>M. Ya. Shapiro and L. A. Kasatkina</u>	41	40
METHODS OF SPECTRAL ANALYSIS		
Recording Electron Paramagnetic Resonance Spectrums of Short-Lived Anion Radicals. <u>R. A. Gavar, Ya. P. Stradyn', and S. A. Giller</u>	42	41
Spectral Determination of Chlorine and Fluorine in Metallic Beryllium Using Discharge in a Hollow Cathode. <u>Yu. I. Korovin</u>	46	45

CONTENTS (continued)

	PAGE	RUSS. PAGE
A Study of the Mutual Effect of Alloy Components in Determining Manganese in High-Alloy Steels Under ARC Conditions of the GÉU-1. <u>L. K. Mazan and V. F. Mal'tsev</u>	51	49
Analysis of Quality Lead, Zinc, and Cadmium for Admixtures with a DFS-10 Spectrograph. <u>E. A. Lavrova and A. V. Kuznetsova</u>	54	50
Kinetics of the Entrance of Impurities into the Discharge Plasma in Hot Hollow Cathodes. <u>L. F. Sokiryanskii and A. N. Shteinberg</u>	58	54
Elimination of the Influence of Iron and Aluminum by Addition of Calcium in Determining Strontium by Means of the Flame-Photometry Method. <u>A. I. Kirillov and G. I. Alkhimenkova</u>	62	57
Investigation of Diffusion Processes by Means of Local Spectral Analysis. <u>E. F. Lifshits</u>	65	59
PHYSICAL METHODS OF INVESTIGATION		
Some Possible Applications of the Mössbauer Effect (Review). <u>V. I. Gol'danskii and E. F. Makarov</u>	67	61
The Use of Eddy Currents for Investigating and Checking the Condition of Aluminum Alloys. <u>O. L. Bendryshev and N. V. Dorosheva</u>	72	65
Method of Suppressing the Response of an Eddy Current Transducer to Vibrations of the Gap Between the Transducer and the Metal. <u>G. M. Kukhtevich and A. K. Dryuchenko</u>	77	69
A Method of Evaluating the Contamination of the Metal of a Rolled Wire Cable by Nonmetallic Impurities. <u>A. G. Rabinovich and E. N. Ziborova</u>	82	73
A Method of Testing for Stress Corrosion Under a Varying Load. <u>V. N. Gulyaev and L. V. Venkova</u>	87	77
Correction Factor for the Volume of Pores in Calculating the Anode Film Thickness. <u>A. F. Bogoyavlenskii and V. T. Belov</u>	90	79
Method for Investigating the Kinetics of Gas Evolution in the Vacuum-Treatment of Liquid Metals. <u>V. T. Burtsev, G. I. Filipp, A. Yu. Polyakov, and A. M. Samarin.</u>	93	80
Calibration of High-Temperature Calorimeters in a Laboratory Device. <u>V. G. Shatenshtein</u>	97	83
Simple Method for Checking the Adjustment of the Electromagnet in Mass Spectrometers (Exchange of Experience). <u>M. K. Afanas'ev and É. B. Ershov</u>	101	86
MECHANICAL METHODS OF TESTING		
Discussion of the Methods for Assessing the Tendency of Metals and Alloys to Brittle Failure.	102	87
A Comparison of Various Methods of Assessing the Resistance of Steels to Brittle Failure. <u>A. P. Gulyaev and V. N. Nikitin.</u>	103	88
On the Determination of the Resistance of Structural Steel to Brittle Failure. <u>L. I. Gladshtein and A. V. Rudchenko</u>	109	94
On the Problem of Determining the Critical Temperature of Brittleness by Impact Testing. <u>V. I. Baguzin and I. V. Navrotskii</u>	115	100
On the Cold Brittleness of Steel in the Two-Dimensional Stressed Condition. <u>R. G. Arone and N. G. Karpova</u>	119	103
A Method for the Comparative Evaluation of the Tendency of Steel to Thermomechanical Damage. <u>A. V. Velikanov</u>	124	108
The Effect of the Size of Specimens on the Strength of Porous Cermets. <u>A. Ya. Krasovskii and V. T. Troshchenko</u>	126	109

CONTENTS (continued)

	PAGE	RUSS. PAGE
The Determination of the Ultimate Tensile Strength of Ceramic Materials. <u>Yu. M. Buki and L. M. Rutman</u>	130	113
Determination of the Stability of Rubber Mixtures with Regard to Their Premature Vulcanization (Exchange of Experience). <u>R. Sh. Frenkel'</u>	132	114
INSTRUMENTS AND LABORATORY TECHNIQUES		
A Frequency Rheometer for the Investigation of Dynamic Properties of Polymers at Audio Frequencies. <u>G. V. Vinogradov and Yu. G. Yanovskii</u>	133	115
Device for Programmed Fatigue Tests with Peak Overloads. <u>V. P. Vandyshev</u>	138	118
Device for the Crystallization of Alloys at High Cooling Rates. <u>I. V. Salli and</u> <u>L. P. Limina</u>	141	120
Noncontact Optical Thickness Gauge. <u>V. P. Anishkin, V. P. Vronskaya, and</u> <u>V. E. Sobol'</u>	143	121
Dilatometer for Polymers. <u>I. V. Konyukh, M. P. Zabugina, and G. V. Vinogradov</u> ..	145	123
Method for Microscopic Examination of Small Particles in Three Dimensions. <u>A. V. Murdasov and L. N. Khshivo</u>	147	124
Device for the Simultaneous Determination of the Viscosity and Electrical Conduc- tivity of Slags at High temperatures. <u>O. M. Baeva and G. I. Sobolev</u>	149	125
Device for Measuring the Lifetime of Minority Charge Carriers in Semiconductors. <u>A. F. Kravchenko and L. N. Moshkin</u>	151	126
Piston Electrode with Differential Piston Drive. <u>V. I. Bodyu and N. T. Savel'ev</u>	153	128
Chromatograph for High-Boiling-Point Compounds. <u>Ya. V. Mulyarskii</u>	155	129
Impact-Spark Sampler for Spectral Analysis of Metals and Alloys (Exchange of Experience). <u>L. I. Potapova and K. I. Taganov</u>	158	131
Spectrograph Stand (Exchange of Experience). <u>K. V. Miloslavskii</u> and <u>V. P. Evdokimov</u>	159	131
Recording Unit for the MF-4 Microphotometer (Exchange of Experience). <u>N. V. Alekseev</u>	160	132
INFORMATION		
The MUGP ± 2.5 General-Purpose Hydraulic Machine. <u>E. A. Veretennikov and</u> <u>A. S. Shaginyan</u>	161	133
Conference on Methods of Determining the Effectiveness of Solid Wear-Resistant Surfacings. <u>M. Ya. Zal'tsman</u>	164	135
To Readers and Authors.	165	136

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 2

February, 1965

CONTENTS

	PAGE	RUSS. PAGE
METHODS OF CHEMICAL ANALYSIS		
The Determination of Gases in Metals (Review). <u>Yu. A. Karpov and G. G. Glavin</u>	169	139
Determination of the Composition of Sulfides in Steels Alloyed with Nickel and Manganese. <u>L. M. Mel'nikov, G. A. Medvedeva, S. M. Olerskaya,</u> <u>A. S. Korchemkina, D. K. Butakov, and A. A. Uksusnikova</u>	173	142
The Preparation and Investigation of the Properties of Artificial Nonmetallic Inclusions in Various Steels. <u>N. N. Skorodumov</u>	177	147
The Determination of Indium in Alloyed Crystals of Cadmium Sulfide. <u>O. P. Kulik and I. B. Mizetskaya</u>	180	150
The Determination of Titanium in Steels, Ores, and Aluminum Alloys by Means of N-Furoylphenylhydroxylamine. <u>A. T. Pilipenko, É. A. Shpak,</u> <u>and Yu. P. Boiko</u>	182	151
Extraction-Photometric Determination of Scandium in Rare-Earth Preparations. <u>D. I. Ryabchikov, S. B. Savvin and Yu. M. Dedkov</u>	185	154
Oscillopolarographic Determination of Nickel in a Zinc Electrolyte. <u>M. M. Evstifeev and P. N. Kovalenko</u>	187	156
Luminescent Determination of Boron in Alkaline Media by Means of Ionite Resins. <u>A. K. Babko, Z. I. Chalaya, and E. D. Voronova</u>	189	157
Determination of Phosphates in Parkerizing Solutions by the Amperometric Titration Method. <u>V. P. Novak, V. I. Bogovina, and V. F. Mal'tsev</u>	191	159
Nonaqueous Titration of Some Methylphosphonic Acid Derivatives. <u>A. P. Kreshkov,</u> <u>V. A. Drozdov, and N. A. Kolchina</u>	193	160
Complexometric Determination of Zirconium and Aluminum in Binary Alloys (Exchange of Experience). <u>R. S. Tramm and K. S. Pevzner</u>	196	163
Determination of a Microadmixture of Aluminum in very Pure Cadmium Salts by the Fluorescent Method (Exchange of Experience). <u>N. B. Lebed'</u> <u>and R. P. Pantaler</u>	197	163
Determination of Mercury in Contact Sulfuric Acid and in Oleum by the Dithizone Method (Exchange of Experience). <u>I. A. Soiferman</u>	198	164
Analysis of Arsenic Hexaboride (Exchange of Experience). <u>A. A. Reshchikova</u>	199	164
Determination of Silicon and Titanium in the Primary Distillate of Titanium Tetrachloride (Exchange of Experience). <u>V. N. Tikhonov</u> <u>and A. N. Chernysheva</u>	200	164
METHODS OF SPECTRAL ANALYSIS		
A New Method of Taking into Account the Effect of the Chemical Composition of Samples in X-Ray Spectral Analysis. <u>A. N. Smagunova, N. F. Losev,</u> <u>and V. I. Lipskaya</u>	201	166

CONTENTS (continued)

	PAGE	RUSS. PAGE
On the Feasibility of Monitoring the Content of Carbon in Iron Carbide Melts by Spectroscopic Methods without Sampling. <u>A. B. Shaevich, S. I. Mel'nikov, and V. V. Danilevskaya</u>	205	169
Quantitative Analysis of the Products of Exhaustive Chlorination of Pentanes by Infrared Spectrometry. <u>P. V. Tibanov, A. F. Vasil'ev, L. M. Kogan, and N. M. Burmakin</u>	209	172
The Determination of 1,3- and 3,3-Diacetoxyprenes by Means of Their Infrared Spectra. <u>V. A. Terent'ev and A. A. Stolyarov</u>	213	176
The Quantitative Determination of Acetonitrile in Isoprene, Isoamylenes, and Their Mixtures by Infrared Absorption Spectrometry. <u>N.M. Pashchenko, E. D. Sorokina, and V. G. Baranova</u>	215	178
Quantitative Spectral Determination of Beryllium in Solutions. <u>T. P. Taskaeva</u>	217	179
Efficient Utilization of the Sample in Analysis Based on the Method of Air-Blast Pouring. <u>Yu. N. Kuznetsov and L. V. Zelentsova</u>	219	180
A Spectral Method for Determining Boron in Nickel (Exchange of Experience). <u>L. N. Mosova and E. V. Lifshits</u>	223	183
The Spectral Determination of Small Amounts of Titanium in Vanadium and Complex Chromium-Nickel-Molybdenum Alloys (Exchange of Experience). <u>E. L. Raff</u>	224	184
MECHANICAL METHODS OF TESTING		
Rotational Viscosimetry (Review) (Exchange of Experience). <u>I. M. Belkin and S. K. Krashenninnikov</u>	225	185
Reverberation Method for Inspecting Metallic Structure (Exchange of Experience). <u>G. V. Zarochentsev and I. N. Yushkevich</u>	237	198
Use of the Autoradiography Method in Investigating the Boundary Zone of Bimetals (Exchange of Experience) <u>M. L. Gol'din, Yu. I. Krivonosov, G. N. Kovalev, F. E. Dolzhenkov, and M. B. Tobol'skii</u>	241	202
Determination of Oxygen in Titanium, Beryllium, and Aluminum by Means of Photostimulation (Exchange of Experience). <u>V. A. Kochevanov and R. A. Kuznetsov</u> . .	244	206
Determination of Internal Friction in Plastics (Exchange of Experience). <u>V. M. Chernyshev</u> . .	248	207
A Contactless Method for Measuring the Resistivity of Semiconductors (Exchange of Experience). <u>V. S. Sobolev</u>	251	209
The Determination of the Arbitrary Elastic Limit for Contact Loading. <u>Yu. M. Paryshev and N. P. Shchapov</u>	255	212
The Determination of the Elastic Limit and the Modulus of Elasticity of a Strip with a Thickness of Less than 200 μ . <u>M. A. Shtremel' and A. P. Gruzlov</u>	259	216
The Evaluation of the Frictional Heat Resistance of Pairs of Materials in Sliding Contact in a High Vacuum. <u>I. V. Kragel'skii and V. V. Grib</u>	265	220
The Use of Radioactive Isotopes in the Investigation of Wear. <u>V. A. Panfilov</u>	269	224
On the Corrosion-Fatigue Strength of "50" Steel Under an Asymmetrical Cyclic Load and a Constant Torque Applied Simultaneously. <u>N. I. Kharitonov and L. N. Molchanov</u>	273	228
INSTRUMENTS AND LABORATORY TECHNIQUES		
Device for Tensile Testing at Temperatures Below 700° C in Air. <u>M. D. Terminasova and L. V. Tuzov</u>	276	231
Device for Cooling Specimens to Low Temperatures. <u>V. T. Borisov</u>	278	232
Use of the PMT-3 Device for Measuring Microhardness of Polymer Coatings. <u>R. A. Rutto</u>	280	234
Experience in the Use of Betatrons in the Inspection of Welded Joints. <u>V. A. Vorob'ev, B. I. Gorbunov, G. V. Titov, and V. L. Chakhlov</u>	283	236
Friction Machine with Separate Measurement of the Wear of Specimens. <u>F. A. Shil'gorin and V. S. Radchik</u>	285	237
AKV-4 Automatic Capillary Viscometer. <u>A. A. Konstantinov, V. V. Sinitsyn, and G. V. Vinogradov</u>	288	239
Recording Cryometer for Determining the Molecular Weight of Polymers. <u>I. A. Tutorskii, E. É. Potapov, and Kh. S. Kamaletdinov</u>	291	241

CONTENTS (continued)

	PAGE	RUSS. PAGE
Device for Determining the Density of Dispersed Materials. <u>Yu. Ya. Bobyrenko</u>	294	243
Stroboscopic Illuminator for Studies of Kinetic Metal Fatigue. <u>M. G. Lozinskii and</u> <u>and A. N. Romanov</u>	296	244
Accuracy and Operating Reliability of the DFS-10 Quantometer Under Metallurgical Plant Conditions. <u>M. N. Shtutman, V. P. Avdeenko, Yu. A. Neuimin, L. V. Kas'yanova,</u> <u>M. V. Ignatova, V. A. Pedenko, and A. I. Buvalits</u>	299	247
Use of Different Light Sources for Atomic Absorption Analysis. <u>V. L. Ginzburg</u> <u>and G. I. Satarina</u>	302	249
Device for Working with a Hollow Cathode. <u>V. Z. Krasil'shchik</u>	305	251
Device for Attaching Ultrasonic Transducers for Testing Structures (Exchange of Experience). <u>A. K. Yavorskii and V. A. Voitovich</u>	307	252
Automatic Weighing of Sample While Drying. (Exchange of Experience). <u>S. G. Simonyan</u> <u>and N. N. Dolgoplov</u>	308	252
Gas Burner for Flame Photometry of Powdered Samples (Exchange of Experience). <u>S. A. Shipitsyn, V. V. Kiryushkin, and A. A. Ermolaev</u>	309	253
An Economical Power Source for a DC Arc (Exchange of Experience). <u>A. I. Brander,</u> <u>V. Ya. Mastyaev, and M. A. Averbukh</u>	310	253
Titration Measuring Attachment to Photocolorimeters (Exchange of Experience). <u>M. L. Chepelevetskii and K. F. Kharitonovich</u>	311	253
Automatic Column for Chemical Purification of Mercury (Exchange of Experience). <u>V. G. Artamonov</u>	312	254

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 3

March, 1965

CONTENTS

	PAGE	RUSS. PAGE
METHODS OF CHEMICAL ANALYSIS		
The Effect of Impurities on the Determination of Zinc by the Ferrocyanide Amperometric Method with Two Indicator Electrodes. <u>O. A. Songina</u> and <u>I. S. Savitskaya</u>	315	259
The Amperometric Determination of Molybdenum in Steels with 8-Mercaptoquinoline. <u>V. I. Suprunovich</u> and <u>Yu. I. Usatenko</u>	319	262
A Rapid Method for Determining Antimony as an Impurity in High-Purity Tin by Amalgam Polarography. <u>L. F. Zaichko</u> , <u>V. F. Yankauskas</u> , and <u>M. S. Zakharov</u>	322	265
The Direct Complexometric Determination of Tin in Solders. <u>I. M. Yurist</u>	325	267
The Determination of Small Amounts of Vanadium by Means of the Catalytic Action of its Compounds. <u>A. I. Lazarev</u> and <u>E. M. Tronina</u>	328	270
The Direct Potentiometric Determination of Sulfides in Waters. <u>G. M. Shpeizer</u> and <u>N. M. Zaidman</u>	331	272
The Titration of Some Salts by the Displacement Method, Using Tetraethylammonium Hydroxide. <u>A. P. Kreshkov</u> , <u>A. N. Yarovenko</u> , and <u>V. N. Nevskaya</u>	333	274
The Rapid Determination of Nitrogen in Coals. <u>L. L. Okhapkina</u> , <u>A. P. Bykova</u> , and <u>G. A. Evstratova</u>	336	277
A Photocolorimetric Method for Determining Fluorine in the Presence of Phosphate Ions in Etching Solutions. <u>V. P. Novak</u> , <u>V. I. Bogovina</u> , and <u>V. F. Mal'tsev</u>	338	278
The Determination of Calibration Coefficients in Gas Chromatography by the Method of Dilution. <u>L. A. Pokrovskaya</u> and <u>G. S. Frolova</u>	340	279
Analysis by Gas-Chromatography of Mixtures of Organic Compounds with Selective Determination of Alcohols. <u>V. G. Berezkin</u> , <u>A. E. Mysak</u> , and <u>L. S. Polak</u>	343	282
Chromatographic Analysis of Aqueous Solutions of Ethyl Alcohol in the Manufacture of Ethylcellosolve. <u>N. N. Kosenko</u> and <u>L. V. Galuzo</u>	346	285
Potentiometric Determination of Fatty Acids in Water-Resistant Ammonium Nitrate. <u>A. P. Erzh</u>	348	286
Non-Compensation Potentiometric Method of Determining Monomers. <u>D. V. Gurvich</u> , <u>V. A. Balandina</u> and <u>A. G. Ivanyuk</u>	350	288
Radioluminescent Determination of Styrene in Polystyrene and in Plastic Scintillators. <u>V. G. Kokoulin</u>	353	290
Quantitative Determination of 3,4-Benzopyrene by Fluorescence Spectra at Low Temperatures. <u>M. P. Fillipov</u> and <u>N. I. Ruch'eva</u>	356	293
Amperometric Determination of Vanadium in Phase Analysis of Alloys (Exchange of Experience). <u>V. P. Novak</u> , <u>V. F. Mal'tsev</u> and <u>V. I. Bogovina</u>	358	295
Rapid Complexometric Determination of Lead in Tin-Lead Alloys (Exchange of Experience). <u>P. G. Shakhova</u> and <u>O. I. Korotkova</u>	359	295

CONTENTS (continued)

	PAGE	RUSS. PAGE
Chromatographic Analysis of the Products of Cyclooctatetrene Synthesis (Exchange of Experience). <u>F. P. Ivanovskii, V. A. Dontsova, N. F. Barabanshchikova and L. K. Kaplan</u>	360	296
Photocolorimetric Method of Determining Fluorine in Natural Waters and Effluent (Exchange of Experience). <u>V. L. Zolotavin and V. M. Kazakova</u>	361	297
 PHYSICAL METHODS OF INVESTIGATION		
Methods and Results of Phase Analysis of High-Speed Steels. (Review). <u>A. P. Gulyaev, I. K. Kupalova, and V. A. Landa</u>	362	298
Maximum Information Capacity of Gamma Shadowgraphy. <u>A. M. Yakobson</u>	383	318
Testing Thin-Walled Curvilinear Shells with Normal-Mode Ultrasonic Waves. <u>B. I. Vybornov</u> . .	388	322
Luminescent Flaw Detection in Porous Materials. <u>A. V. Karyakin, A. S. Borovikov, and L. A. D'yakov</u>	391	325
Microscopic Determination of Sulfide Cerium Inclusions. <u>N. N. Popova, N. I. Butko, and G. L. Shubenko</u>	394	327
Determination of the Size of Filler Grains in Artificial Graphite by the Method of Thermal Oxidation. <u>N. V. Oshchepkova, I. F. Sukhorukov, and Yu. N. Bochagov</u>	397	330
Determination of Water-Soluble Substances in Kapron by the Interference Method (Exchange of Experience). <u>R. V. Voitsekhovskii, T. K. Zasimchuk, and L. M. Kolchinskaya</u>	400	332
A Volume Method for Determining the Water Vapor in Gases (Exchange of Experience). <u>G. F. Martynyuk</u>	401	332
 MATHEMATICAL METHODS OF INVESTIGATION		
On Standard Forms of Presentation of Scientific and Technical Papers. (Review). <u>G. G. Vorob'ev</u>	402	334
The Error Distribution of Approximate Methods of Spectral Analysis. <u>V. S. Mishchenko</u>	405	338
Determining the Optimum Conditions for Colorimetry of Phenols. <u>V. D. Barskii and V. V. Noskov</u>	410	342
 MECHANICAL METHODS OF TESTING		
A Method for Determining the Speed of Propagation of Cracks and for Maintaining the Specified Stress. <u>V. M. Markochev and B. A. Drozdovskii</u>	414	345
Distribution of Service Lives Obtained by Fatigue Testing Light Alloys. <u>M. N. Stepnov</u>	419	349
Reproduction of Transverse Fatigue Failures of Rails in Laboratory Conditions. <u>V. A. Kislik and A. I. Karmazin</u>	424	354
Resistance of Steel with a Heterogeneous Structure to Impact-Fatigue Failure. <u>G. V. Toporov and V. V. Morozova</u>	427	357
A Method for Feeding Corrosive Liquid to a Revolving Specimen During Fatigue Tests. <u>Yu. F. Klimchuk and M. M. Tenenbaum</u>	431	360
On a Method for Determining the Constants of Steady-State Short-Term Creep. <u>S. T. Mileiko</u> . .	433	362
A Method for the Tensile Testing of Small Specimens in a Vacuum at Temperatures Up to 1600 Deg C. <u>Yu. E. Andrianov, D. V. Lebedev, and B. M. Ovsyannikov</u>	438	367
Determination of the Residual Strain Caused by Combined Cyclic Bending and Static Torsion. <u>S. N. Nichiporchik</u>	441	369
 INSTRUMENTS AND LABORATORY TECHNIQUES		
Device for Determining the Modulus of Elasticity and Internal Friction at High Temperatures in Magnetic Fields. <u>I. L. Eganyan</u>	443	372
Device for Measuring Hardness at High Temperatures. <u>A. A. Kul'bakh, V. M. Shchavelin, and B. A. Makarychev</u>	446	374
A Device for Testing Metals for Wear by a Thread in a Gas Atmosphere and in a Vacuum. <u>P. T. Basko</u>	450	377
Horizontal Impact Testing Machine with Rubber-String Acceleration of the Striker. <u>S. I. Ishutkin and L. D. Sokolov</u>	452	379
A Method for Rapid Loading in Tensile Tests. <u>O. V. Sorokin and Yu. I. Likhachev</u>	454	381

CONTENTS (continued)

	PAGE	RUSS. PAGE
Automatic Densimeter for Liquids. <u>L. N. Kuz'menkov, M. I. Kondratenko,</u> and <u>T. M. Pavlyukevich</u>	456	382
A Four-Channel Electronic Switch for a Cathode Ray Oscilloscope. <u>B. P. Fridman</u>	458	383
Apparatus for Determining the Softening Point and the Reducibility of Iron Ores. <u>G. I. Lizunov,</u> <u>Yu. S. Karabasov, A. N. Spektor, and Yu. S. Yusfin</u>	460	385
An Absorber for Removing Surface-Active and Colloidal Impurities from Electrolytes During the Determination of pH Values. <u>I. A. Efimov and N. N. Balashova</u>	462	386
Modernization of the MI-1M Machine (Exchange of Experience). <u>I. P. Petrichenko</u> and <u>G. P. Kolomiichenko</u>	464	387
Device for the Remote Measurement of the Temperature of Rotating Parts in Closed Chambers (Exchange of Experience). <u>I. Sh. Lutsker</u>	465	388
Device for Plotting Polarization Curves (Exchange of Experience). <u>A. A. Emkov</u> and <u>I. Ya. Mikhailovskii</u>	466	388
Some Points Concerning the Operation of the N-102 Oscillograph (Exchange of Experience). <u>L. N. Popov</u>	467	389
A Simple Method for Obtaining Reliable Electric Contacts with Conducting and Semiconducting Films (Exchange of Experience). <u>G. D. Mokhov</u>	468	389
Compensation Wires for VR5/20 Thermocouples (Exchange of Experience). <u>Yu. A. Studennikov</u> and <u>G. E. Erkovich</u>	469	390
INFORMATION		
Standard Fluids for Checking Refractometers. <u>A. Z. Sladkov</u>	470	391
Seminar	471	392
The Krus-2 General-Purpose Shortwave X-ray Spectrometer with a Shutter.	472	Inside Back Cover
Combined Ultrasonic Equipment for Cleaning Manufactured Articles.	473	Outside Back Cover

EDITORIAL BOARD OF
ZAVODSKAYA
LABORATORIYA

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 4

April, 1965

CONTENTS

	PAGE	RUSS. PAGE
Coulometric Analysis (Review). <u>V. A. Mirkdn</u>	477	395
Determination of Rhenium in Meteorites and Molybdenites by Neutron Activation, with use of Substoichiometric Separation. <u>G. A. Perezhogin</u>	486	402
The Electrolytic Isolation of the Phase Ni_3Ti from a Nickel Alloy. <u>R. B. Golubtsova</u> and <u>S. M. Savvateeva</u>	489	404
The Determination of Cobalt and Iron in Nickel with o-Phenanthroline. <u>G. M. Ganzburg</u> and <u>G. V. Mal'tseva</u>	492	406
The Complexometric Determination of Bismuth, Lead, and Tin in Bi-Pb-Sn Alloys, and of Indium in In-Pb-Sn-Ag Alloys. <u>P. G. Shakhova</u>	494	408
The Separation and Determination of Selenium and Tellurium by the Method of Sintering with Eschka Mixture. <u>R. N. Knyazeva</u> and <u>V. Ya. Kleiman</u>	497	410
The Complete Analysis of Technical Calcium Carbide. <u>E. G. Airapetyants</u> and <u>E. A. Kachanova</u> .. ,	500	412
The Determination of Phenyl Benzoate by a Spectrophotometric Method. <u>G. M. Gal'pern</u> and <u>L. A. Makarevich</u>	502	414
The Determination of Hydroxynaphthoic Acids and Naphthols in Production Melts by the Method of Titration in Nonaqueous Solutions. <u>L. N. Bykova</u> , <u>S. T. Rashevskaya</u> , <u>N. A. Kazaryan</u> , and <u>E. S. Rubtsova</u>	504	415
The Analysis of Ethanolamine Mixtures. <u>E. A. Gribora</u> and <u>E. Yu. Khmel'nitskaya</u>	506	417
The Indirect Complexometric Determination of Phosphoric Anhydride in Apatit Concentrates (Exchange of Experience). <u>I. G. Izhak</u>	509	419
The Determination of Lead in Solutions from Cadmium Production (Exchange of Experience). <u>A. M. Ustimov</u> and <u>Z. L. Bulanova</u>	510	420
The Determination of Thallium and Antimony in Cadmium Oxide (Exchange of Experience). <u>S. A. Lomonosov</u> , <u>V. N. Podchainova</u> , and <u>V. Rybina</u>	511	420
The Determination of Cyanides and Thiocyanates in Effluent Waters (Exchange of Experience). <u>Yu. Yu. Lur'e</u> and <u>V. A. Panova</u>	512	420
The Determination of Cyanates in Effluent Waters (Exchange of Experience). <u>Yu. Yu. Lur'e</u> and <u>V. A. Panova</u>	513	421
The Determination of Maleic Acid and Maleic Anhydride in Chloroundecoic Anhydride (Exchange of Experience). <u>E. A. Emelin</u> and <u>N. F. Smyslova</u>	514	422
The Analysis of 2,6-Diaminopyridine by the Method of Potentiometric Titration (Exchange of Experience). <u>E. Yu. Khmel'nitskaya</u>	515	422

CONTENTS (continued)

	PAGE	RUSS. PAGE
The Microdetermination of Sulfur in Organic Compounds (Exchange of Experience). <u>T. V. Reznitskaya</u>	516	422
METHODS OF SPECTRAL ANALYSIS		
Error Reduction in X-Ray Spectrometry by Means of a Reference Channel. <u>M. A. Blokhin,</u> <u>E. Ya. Ovcharenko, P. I. Myagkov, V. A. Sotnikov, Yu. M. Mamonov and G. L. Belkina</u> . .	517	423
X-Ray Spectral Analysis of Brass During Smelting. <u>G. L. Belkina, V. A. Kuroedov,</u> <u>V. I. Lapovok, I. M. Likhterov, G. R. Mermel'shtein, E. Ya. Ovcharenko, V. I. Ponomar',</u> <u>V. I. Sabaev, V. A. Sotnikov, L. I. Fainberg, and N. D. Feoktistova.</u>	520	427
X-Ray Spectral Determination of the Ratio of the Contents of Two Elements in a Stream of Pulp. <u>É. E. Maizil' and V. A. Sotnikov.</u>	522	429
Automatic X-Ray Spectrum Analysis of Industrial Products. <u>E. Ya. Ovcharenko</u> and <u>L. S. Shelkov.</u>	524	430
Correction for Background in Determination of Rare-Earth Elements by X-Ray Spectroscopy. <u>R. A. Kravchenko-Berezhnoi and L. I. Polezhaeva.</u>	530	436
X-Ray Spectral Analysis of Strontium, Thulium, and Lutecium Beryllides. <u>V. N. Karev</u> and <u>L. I. Reshetova.</u>	534	440
Determination of Rare-Earth Elements in Solutions by the X-Ray Fluorescence Method. <u>G. I. Rekhkolainen.</u>	536	442
Spectral Analysis of Tantalum (Exchange of Experience). <u>V. A. Chernyaeva.</u>	538	443
PHYSICAL METHODS OF INVESTIGATION		
Diffusion with Nonlinear Boundary Conditions. <u>R. N. Rubinshtein and I. V. Postnikov</u>	539	444
The Solution of the Equation of Diffusion with an Approximated Variable Surface Concentration. <u>N. N. Matveeva.</u>	547	451
Determination of Iron Carbide from the Interplanar Spacing. <u>V. K. Tomas.</u>	550	453
The Use of the Powder Method in the X-Ray Analysis of Solid Fuel Ash. <u>N. Ya. Chursina</u> and <u>T. M. Gutermakher.</u>	553	455
Magnetic Field Anomalies over Occluded Surface Flaws in Thin Sheets. <u>Yu. K. Fedosenko</u>	555	457
On the Inspection of the Quality of Annular Ferrite Cores. <u>A. P. Vikulov, É. L. Yamnitskii,</u> <u>M. M. Fokin, and L. V. Larionov.</u>	558	459
A Method for Measuring the Dielectric Properties of Slag Systems. <u>V. A. Kalmykov,</u> <u>P. Ya. Ageev, and Yu. V. Svershkov.</u>	560	460
Investigation of the Homogeneity of High-Alloy Semiconductors by Means of a Heated Thermocouple-Probe. <u>V. A. Kokoshkin</u>	562	461
Use of the γ -Ray Spectrometric Method for the Simultaneous Measurement of the Wear of Two Parts. <u>K. A. Tsagolov, R. A. Srapenyants, and A. I. Nisnevich.</u>	565	464
Preparation of Trimethyl Borine Samples for the Isotopic Analysis of Boron. <u>S. G. Katal'nikov,</u> <u>V. E. Pisarev, and I. A. Kapustin.</u>	567	466
Method for Determining the Phase Composition of Gas-Liquid Systems in a Porous Medium. <u>L. L. Sinii, B. A. Belinskii, and V. F. Nozdrev</u>	569	467
The Determination of the Mineralogical-Phase Composition of NaCl-TiCl ₃ Alloys (Exchange of Experience). <u>E. F. Klyuchnikova and V. G. Gopienko.</u>	571	469
MECHANICAL METHODS OF TESTING		
Estimating the Anisotropy of Mechanical Properties of Metals. <u>P. G. Miklayev</u> and <u>Ya. B. Fridman</u>	573	470
Pipe Testing by Means of the Method of Annular Specimens. <u>O. S. Vil'yams, A. S. Oleinik,</u> and <u>S. R. Kudashevich.</u>	583	479
Effect of Overstresses on the Intensity of Cyclic Cold Working in Bending Combined with Rotation. <u>L. N. Molchanov and N. I. Kharitonov</u>	586	482

CONTENTS (continued)

	PAGE	RUSS. PAGE
Determination of the Depth of Cold-Worked Layers in Alloyed Steels. <u>M. Ya. Belkin,</u> <u>A. S. Venzhega, V. I. Dunaevskii, and V. N. Voyakin</u>	590	485
Improvement of the Reliability of Hydraulic Pulsator Tests. <u>Yu. E. Tyablikov.</u>	594	488
 INSTRUMENTS AND LABORATORY TECHNIQUES		
Automatic Device for the Investigation of Stress Relaxation Under a Shear Load. <u>I. V. Shamov and A. S. Mikhail'chenko.</u>	599	493
The VUHZ 2000 Creep Testing Device. <u>L. Frantz and R. Pavlovskii</u>	601	494
Device for High Frequency Fatigue Bending Tests. <u>I. A. Troyan.</u>	604	497
Electrodynamic Device for Obtaining the Spectra of the Resonance Absorption of γ -Rays in Crystals. <u>L. A. Alekseev, P. L. Gruzin, N. S. Kovalevskii, and I. I. Shtan'</u>	606	498
Using an Electronic Digital Computer to Determine Residual Stresses. <u>M. M. Kobrin,</u> <u>V. M. Proshko, and L. S. Sorkin.</u>	608	500
Apparatus for Testing Steels for Corrosion Cracking in Aqueous Solutions with Specified Concentrations of Salts and Oxygen. <u>A. V. Ryabchenkov, V. P. Sidorov, V. I. Gerasimov,</u> <u>and N. F. Pongil'skii</u>	610	501
An Instrument for Studying the Properties of Thin Magnetic Films. <u>L. A. Pil'kevich</u> <u>and Yu. V. Zelinskii.</u>	612	503
Apparatus for Measuring Specific Heat of Metals. <u>R. P. Yurchak and L. P. Filippov</u>	615	505
A Simplified X-Ray Spectrograph. <u>S. A. Ditsman and V. G. Bogdanov.</u>	618	507
Device for Recording the Kinetics of Reactions. <u>S. U. Kreingol'd, E. A. Bozhevol'nov,</u> <u>and L. G. Sinyaver.</u>	620	508
Improved MV-2 Weight Loaded Capillary Microviscometer (Exchange of Experience). <u>B. V. Radushkevich, V. S. Zakharov, and Yu. V. Vasil'ev</u>	622	510
Variation of the Temperature of the Three Experimental Apparatuses by means of One EPV Potentiometer (Exchange of Experience). <u>T. K. Marinets and V. M. Nikitin</u>	623	510
Float Dynamometer (Exchange of Experience). <u>B. M. Gershkovich</u>	625	511
Device for Determining the Carbon in Flames and in Gas Flows (Exchange of Experience). <u>N. I. Pevnyi and G. S. Sakyants</u>	626	512
Preparation of Polyethylene Capsules for Analysis (Exchange of Experience). <u>Yu. M. Kosyrev and Z. I. Anisimova</u>	627	513
A Concentrator (Exchange of Experience). <u>M. I. Anikeeva and V. A. Muranov</u>	628	513
 CRITICISM AND BIBLIOGRAPHY		
B. G. Livshits, Metallography. <u>S. Z. Bokshtein.</u>	629	514
Books on Mechanical Tests of Materials in 1965. <u>M. Ya. Zal'tsman</u>	631	515
 INFORMATION		
Instruments for Scientific and Laboratory Research. <u>O. B. Andreev and O. P. Logashev</u>	633	516
Seminar on Microspectral Analysis. <u>V. P. Borzov</u>	636	518
Conference on the use of Polarography in the Chemistry and Technology of Polymers and Monomers. <u>M. Buzlanova</u>	637	519
The Work of the Analytic Section of the Moscow House of Scientific and Technical Propaganda. <u>E. M. Budagova.</u>	639	520
Correction	640	520

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 5

May, 1965

CONTENTS

	PAGE	RUSS. PAGE
The Development of Instrument Construction—The Path to Technical Progress,	643	523
METHODS OF CHEMICAL ANALYSIS		
New Developments in the Kinetic Method of Analysis (Review). <u>K. B. Yatsimirskii,</u> <u>V. K. Pavlova, and V. I. Skuratov</u>	645	525
An Investigation of the Intermetallic Phase in Alloys of the System <u>Ti—Al—Fe—Si—B—Cr. R. B. Golubtsova</u>	657	534
A Differential Method for Determining Chromium Carbides of the Types Me_2C , $Me_{23}C_6$, or Me_7C_3 . <u>L. V. Zaslavskaya and N. V. Ivanova</u>	659	536
A Metal Indicator for Barium in the Volumetric Determination of Sulfates in the Presence of Phosphates and Arsenates. <u>V. I. Kuznetsov and N. N. Basargin</u> . .	661	538
The Polarographic Determination of Germanium in Ores and Concentrates. <u>G. A. Volkova and V. G. Sochevanov</u>	665	541
The Rapid Determination of Selenium in Anodic and Sulfuric Acid Sludges. <u>M. I. Erdenbaeva and Z. M. Usenova</u>	668	543
The Analysis of Manganese-Zinc Ferrites by Means of Extraction. <u>I. A. Shevchuk,</u> <u>N. N. Nikol'skaya, and T. N. Simonova</u>	670	545
The Turbidimetric Titration of Polymer Solutions. <u>M. F. Sorokin and V. K. Latov</u>	672	547
The Chromatographic Determination of Acetylene as a Microimpurity in Ethylene. <u>M. S. Vigdergauz and L. V. Andreev</u>	675	550
The Determination of Phosphorus in High-chromium Steels (Exchange of Experience). <u>K. A. Spektor</u>	678	552
The Chromatographic Analysis of Reaction Products from the Isomerization of Propylene Oxide (Exchange of Experience). <u>S. G. Shagina, A. G. Polkovnikova,</u> <u>M. L. Vlodavets, and E. N. Ovcharova</u>	679	553
The Determination of Di- and Trivalent Iron in Oxalate Solutions (Exchange of Experience). <u>P. M. Aron and E. V. Prytkova</u>	680	553
METHODS OF SPECTRAL ANALYSIS		
A Method for Determining the Paramagnetic Impurities in a Liquid Flow. <u>L. A. Bikbulatova, A. I. Zhernovoi, and S. P. Pivovarov</u>	681	554
A Method for Measuring Large Relaxation Times. <u>A. I. Zhernovoi and S. P. Pivovarov</u> . .	683	556
The Chemico-spectral Analysis of Yttrium and Its Oxides for Impurities. <u>B. L. Slyusareva, L. I. Kondrat'eva, and Sh. I. Peizulaev</u>	685	557
Spectral Analysis of Silicon Carbide. <u>A. N. Pikhtin</u>	687	559

CONTENTS (continued)

	PAGE	RUSS. PAGE
A Spectral Method for Determining Impurities in Silicon Carbide. <u>L. S. Vasilevskaya, A. I. Kondrashina, G. A. Makarova, and N. A. Panarina</u>	689	561
Spectral Analysis of Electrolytes. <u>A. M. Tokareva, M. L. Petukh, P. M. Béchko, and É. I. Zenevich</u>	691	562
Quantitative Determination of Atrazine, Symazine, and Propazines by Infrared Absorption Spectra. <u>V. I. Yakutin, N. P. Makarova, and S. S. Dubov</u>	694	564
Atomic Absorption Determination of Magnesium in Strontium Nitrate with a Continuous Radiation Source (Exchange of Experience). <u>N. P. Ivanov and N. A. Kozyreva</u>	697	566
The Dependence of the Strength of Secondary Spectrum Lines Upon Tube Voltage (Exchange of Experience). <u>A. V. Pivovarov</u>	698	566
 PHYSICAL METHODS OF INVESTIGATION		
Application of the Zone Melting Method to Analytical Chemistry and Physicochemical Investigations. <u>V. N. Vigdorovich</u>	700	568
Determining the Amorphous Phase According to Structurally Independent Scattering Characteristics. <u>A. S. Kagan and V. M. Snovidov</u>	707	573
x-Ray Determination of the β -Phase in Alloys Based on Titanium. <u>M. I. Ermolova</u>	712	577
Radiometric Analysis of Iron in Ore on a Moving Belt. <u>G. A. Grigor'ev, V. G. Guglya, A. A. Zhukhovitskii, I. M. Kostin, and S. E. Khusid</u>	715	579
Potentiostatic Determination of the Propensity of Stainless Steels to Intercrystalline Corrosion. <u>G. G. Kossyi and V. S. Kuzub</u>	718	582
An Accelerated Method of Determining the Propensity of Brasses to Dezincing. <u>I. K. Marshakov and V. P. Bogdanov</u>	721	584
Detecting Inhomogeneities in Silicon Single Crystals with Infrared Transillumination. <u>M. G. Mil'vidskii, S. P. Grishina, and A. V. Berkova</u>	724	586
A Tensometric Method of Determining the Thermal Expansion Coefficients of Materials. <u>E. Yu. Nekhendzi</u>	726	588
Determining the Molecular Weight of Polymethylene Methacrylate by the Single-point Method. <u>M. M. Gerner, E. Yu. Novik, L. V. Ryabina, I. Ya. Boguslavskaya, and V. N. Batovskii</u>	728	590
On the Shrinkage of x-Ray Film (Exchange of Experience). <u>F. I. Bochkaev</u>	730	591
A Method of Etching Sections of High-alloy Steels with an Increased Silicon Content (Exchange of Experience). <u>E. N. Alpatov and D. I. Zalivakin</u>	731	592
 MECHANICAL METHODS OF TESTING		
On the Methods for Evaluating the Tendency of Structural Steels to Cold Brittleness. <u>V. A. Baldin, P. I. Sokolovskii, and R. G. Arone</u>	732	593
On the Method of Assessing the Effect of the Tendency of a Steel to Mechanical Aging on Its Brittleness and Cold Brittleness. <u>V. T. Borisov</u>	735	597
On the Criteria of Cold Brittleness in Testing Steels for Impact Strength. <u>E. S. Nozyreva and K. V. Popov</u>	737	598
A Method for Investigating the Resistance of Steel to Brittle Fracture Under a Load with Varying Amounts of Stored Elastic Energy. <u>P. P. Borisov and M. P. Anuchkin</u>	742	603
On the Effect of the Specimen Thickness on the Position of the Region of Brittle-Ductile Fracture. <u>G. A. Stepanov and A. F. Mikhailova</u>	746	606
A Method for Determining the Effective Stress Concentration Factor Taking into Account the Effect of the Specimen's Length. <u>E. N. Myadzelets and Yu. P. Kukhar'</u>	748	608
The Effect of the Frequency of Cyclic Stress on the Fatigue Strength of Low-carbon Structural Steel. <u>V. I. Shabalin</u>	750	610
 INSTRUMENTS AND LABORATORY TECHNIQUES		
On Tensile Tests in Hydrogen and Other Corrosive Media at High Pressures and Temperatures. <u>L. A. Glikman, V. I. Deryabina, N. N. Kolgatin, and V. P. Teodorovich</u>	752	612

CONTENTS (continued)

	PAGE	RUSS. PAGE
A Device for Programmed Low-frequency Short-cycle Loading. <u>G. Z. Zaitsev</u>	754	614
Device for Studying Strain in Microscopic Metal Samples. <u>L. P. Odinkova and Yu. I. Odinkov</u> . . .	756	615
Device for Relaxation Testing Under Conditions of Hyper-elastic Stress Concentration, <u>I. P. Baushis, A. I. Breskis, and I. I. Nyauronis</u>	759	618
Automatic Stress-Strain Recording Device for Compression Testing of Rocks. <u>V. S. Yamshchikov,</u> <u>V. E. Buglin, and V. G. Egurnov</u>	761	619
Device for a Simultaneous Recording of the Electrical Conductivity Curves and of the x-Ray Diffraction Diagrams of Hard Oxides at High Temperatures. <u>A. F. Bessonov</u> <u>and V. M. Ust'yantsev</u>	763	620
Device for x-Ray Diffraction Analysis of Alloys at High Temperatures Under a Tensile Stress, <u>S. I. Ryabtsev and A. D. Koval'</u>	765	621
x-Ray Chamber for the Investigation of the Mosaic Structure of Crystals. <u>G. Ya. Kozyrskii,</u> <u>V. A. Kononenko, and O. E. Sklyarov</u>	767	623
Device for Taking Samples from a Reaction Vessel for a Flow-type Detecting Unit of the Analyzer, <u>V. Z. Gershenovich</u>	769	624
Airtight Apparatus for Thermogravimetric Research (Exchange of Experience). <u>D. Lambiev</u>	771	625
A Laboratory Electric Heater (Exchange of Experience). <u>N. I. Gel'perin and M. K. Dubinin</u>	772	626
A Programmed Regulator for the ÉPP-09 Potentiometer (Exchange of Experience), <u>B. K. Tyunyukov and V. V. Ovchinnikov</u>	773	626
A Recording Balance with Automatic Compensation (Exchange of Experience). <u>N. G. Ryabtsev</u>	774	627
An Instrument for Determining Oxygen in Gases (Exchange of Experience). <u>V. P. Usacheva</u>	775	627
Apparatus for Continuous Extraction of Radioisotopes (Exchange of Experience). <u>V. A. Muranov</u>	776	628
A Method of Checking the Readiness of Strain-gauge Sensing Elements for Use (Exchange of Experience). <u>N. L. Mukhin</u>	777	628
ORGANIZATION OF LABORATORY WORK AND EXCHANGE OF OPINIONS		
The Analytic Study of Hardness. <u>M. S. Drozd</u>	778	630
CRITICISM AND BIBLIOGRAPHY		
Books on Physical Research Methods. <u>B. S. Faerman</u>	782	633
INFORMATION		
The Eighth Conference on the Use of x-Rays in Materials Research. <u>Yu. S. Terminasov</u>	785	635
The Fourth All-Union Public Inspection of the Realization of the Plans of the New Technology, <u>S. Kuvshinov</u>	787	637
The State Service for Standard Reference Data. <u>O. Obukhova</u>	789	638
Scientific and Technical Conferences in 1965.	791	639
N. M. Turkel'taub	792	640

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 6

June, 1965

CONTENTS

METHODS OF CHEMICAL ANALYSIS	PAGE	RUSS. PAGE
Phase Analysis of WC-TiC-Co Solid Alloys. <u>V. I. Tumanov, Z. S. Trukhanova, V. F. Funke, and K. A. Bystrova.</u>	795	643
Electrochemical Separation of Austenite and Martensite from Tempered High Alloy Steels Alloyed with Manganese. <u>Yu. A. Klyachko and G. K. Baranova.</u>	798	646
Determination of Molybdenum by a Differential Photocolorimetric Method. <u>T. M. Malyutina, B. M. Dobkina, and V. A. Pisareva</u>	800	648
The Use of Photoelectric Colorimeters for Differential Photometric Measurements. <u>T. M. Malyutina and B. M. Dobkina.</u>	802	650
Volumetric Determination of Molybdenum in Molybdenum Disilicide and Ferromolybdenum. <u>E. I. Nikitina and N. I. Adrianova</u>	805	654
Micropolarographic Determination of Microamounts of Lead and Copper in Cooking Salt. <u>K. G. Berezina, L. V. Volkova, and E. I. Gun'ko</u>	807	656
Determination of Chromium in Rubin. <u>V. G. Sil'nichenko and M. M. Gritsenko</u>	809	657
Pulse Polarographic Determination of Thallium in Metallic Indium. <u>B. Ya. Kaplan and O. A. Shiryaeva</u>	811	658
Amperometric Titration of Palladium and Silver in Each Other's Presence. <u>O. A. Songina, A. I. Pashchenko, and P. I. Maslova</u>	814	661
Amperometric Titration Using a Permanganate Reference Electrode. <u>A. A. Usvyatsov and O. A. Songina</u>	816	663
A Method for Analyzing Trichloroacetaldehyde. <u>S. Yu. Sizov and Yu. K. Babina</u>	819	666
Polarographic Determination of Ammonia, Aminoanthracic and Iminodienanthic Acids. <u>B. P. Zhantalai and N. I. Kobylina</u>	821	668
Analysis of Ethylene Glycol Oxidation Products. <u>M. S. Brodskii and A. I. Malyshev</u>	825	672
Determination of Cerium in High Purity Neodymium and Praseodymium Oxides (Exchange of Experience). <u>V. I. Volokhova</u>	828	674
Determination of Sodium Acetate in a Zinc Plating Ammonium Electrolyte (Exchange of Experience). <u>F. I. Kotik and A. A. Luppova</u>	829	675
Rapid Determination of Pyrite Sulfur in Brown Coal (Exchange of Experience). <u>V. I. Volokhova</u>	830	675
Determination of the Acidity of the Reaction Mass in Phenol and Acetone Production (Exchange of Experience). <u>V. Z. Merkuloval and I. M. Tiunova</u>	831	675
Potentiometric Determination of Vinyl Acetate in Its Copolymer with Vinyl Chloride (Exchange of Experience). <u>A. F. Vasil'ev</u>	832	676
Colorimetric Determination of Resin in Production Mixtures from Diphenylpropane Synthesis (Exchange of Experience). <u>M. P. Filippov and L. S. Chasovskikh</u>	833	676

CONTENTS (continued)

	PAGE	RUSS. PAGE
METHODS OF SPECTRAL ANALYSIS		
Improved Accuracy in Quantitative Analysis of Multicomponent Systems from Absorption Spectra. <u>A. F. Vasil'ev</u>	834	677
Quantitative Infrared Assay of Isoprene Dimers in Dimethylformamide. <u>N. M. Pashchenko, V. P. Fedotova, E. D. Sorokina, and V. G. Baranova</u>	841	683
The No-Standard Method of Quantitative Microanalysis of Binary Systems from X-Ray Spectra. <u>T. A. Kupriyanova</u>	843	685
Choice of Slit Width in X-Ray Spectral Analysis with Ionization Recording. <u>Yu. G. Lavrent'ev and É. E. Vainshtein</u>	847	688
Spectral Analysis of Niobium. <u>É. P. Balenko and E. V. Lifshits</u>	849	690
Spectral Analysis of Alloys with a Unipolar Arc. <u>N. K. Rudnevskii and D. P. Milenina</u>	851	692
Simultaneous Spectroscopic Determination of Hydrogen and Oxygen in Metals (Exchange of Experience). <u>S. B. Shubina, S. I. Kilina, and L. A. Bazanova</u>	853	694
PHYSICAL METHODS OF INVESTIGATION		
The Use of Neutron Breeders and Neutron Generators in Activation Analysis <u>D. I. Leipunskaya</u>	854	695
Quantitative Analysis of Complex γ -Spectra of Radioactive Metals and Alloys. <u>V. A. Yanshkevich and L. I. Ivanov</u>	858	699
The Use of Scintillation Granules in Measuring the Beta Radiation of Radioactive Isotopes. <u>Yu. A. Tsirlin, A. Ya. Gel'fman, N. P. Bykovets, and V. M. Solomonov</u>	865	704
Determining the Position of the Maximum of the K_1 Component of a Doublet According to the Profile of a Broadened Doublet X-Ray Diffraction Line. <u>V. V. Kukol'</u>	868	706
A High-Speed Method of Controlling the Carbon Content in Open-Hearth Smelting. <u>V. S. Kocho, P. S. Rudoi, and O. T. Sukachev</u>	871	709
Phase Analysis of Tails from Magnetic Concentration of Iron Quartzites with Magnetite Determination By the Induction Method. <u>K. A. Fomenko, B. I. Kakul', L. K. Obraztsova, and I. N. Tanich</u>	873	711
On Measuring the Linear Thermal Expansion of Solids. <u>L. I. Berger</u>	875	712
On the Vibratory Method of Measuring Viscosity. <u>A. N. Solov'ev and A. B. Kaplun</u>	877	714
A Method for the Microstructural Analysis of Fiber-Glass Plastics (Exchange of Experience). <u>A. A. Severov, V. K. Sergeev, and N. V. Bordovskaya</u>	880	716
MECHANICAL METHODS OF TESTING		
Some Features of Rupture in Low-Cyclic Tension-Compression Loading. <u>A. P. Gusenkov, V. V. Larionov, and R. M. Shneiderovich</u>	885	720
Addition of Fatigue Lives on the Basis of Equal Probability of Equal Damage. <u>R. D. Vagapov</u>	890	725
Analysis of the Fracture of Glass from the Paths of Cracks and from the Structure of Fractures <u>S. S. Solntsev</u>	896	730
Investigation of the Contact Strength of Gear Materials by Means of Roller Simulators. <u>R. R. Gal'per</u>	901	734
Accelerated Method for Determining the Tendency to Aging of Steels. <u>V. M. Zhurakovskii</u>	904	736
Determination of the Actual Area of Contact Between Two Solids by Means of Carbon Films. <u>N. B. Demkin and A. A. Lankov</u>	907	739
Heating of Hollow Specimens by Direct Transmission of Electric Current. <u>V. N. Kiselevskii and A. F. Chuprina</u>	909	740
Statistical Links Between the Chemical Composition and the Mechanical Properties of Cold Rolled Sheet Steel (Exchange of Experience). <u>S. Z. Yudovich and I. M. Fishman</u>	911	742

CONTENTS (continued)

	PAGE	RUSS. PAGE
INSTRUMENTS AND LABORATORY TECHNIQUES		
Device for Measuring Surface Tension of Liquid Metals. <u>K. I. Vashchenko and K. K. Kosnyanu.</u>	912	743
Device for Investigating the Thermomechanical Treatment of Metals. <u>S. Z. Bokshtein, L. M. Mirskii, F. N. Tavadze, and Z. Sh. Kherodinashvili.</u>	915	745
Electron Gun for Zone Melting without a Crucible. <u>L. Yu. Raines and A. I. Makarevich</u>	918	748
Inertialess Dilatometer for Recording Rapid Processes in Metals and Alloys. <u>Yu. Z. Borkovskii and V. V. Parusov</u>	920	749
β -Ray Thickness Gauge for Chromium Coating On Internal Combustion Engine Cylinders. <u>A. S. Karasik, B. S. Kamenev, and A. I. Shafiev</u>	922	750
Device for Determining the Austenite Transformation During Rolling. <u>A. P. Bashchenko, Ya. B. Gurevich, and E. I. Éstrin.</u>	924	751
Device for the Investigation of the Temperature-Time Relationship for Adhesion. <u>M. S. Dyl'kov and A. T. Sanzharovskii</u>	926	752
Thermocouples for the Investigation of Materials in Friction. <u>A. V. Chichinadze, É. D. Braun, and A. G. Abakumkin.</u>	928	753
Automatic Program Loading Attachment to Nu Fatigue Machines. <u>V. Ya. Slobodanyuk.</u>	931	755
Automatic Device for the Investigation of the Elastoplastic Properties of Elastic Foam Plastics. <u>Yu. N. Polyakov</u>	933	757
Spring Dynamometer for Testing Polymer Materials. <u>V. M. Rubshtein, E. I. Gel'perin, V. A. Belynskii, and M. N. Shteding</u>	935	758
The Use of Piezoelectric Sensing Elements in Determining the Dynamic Longitudinal Elastic Modulus of Plastics by the Resonance Method. <u>Yu. F. Leksashev</u>	937	759
A New Device for Luminescence and Colorimeter Analyses. <u>L. N. Kuz'menkov, M. A. Virkhanskii, V. N. Karalis, and G. P. Konopleva.</u>	939	760
Metal Apparatus for Admitting Gas Into the MI-1305 Mass Spectrometer (Exchange of Experience). <u>S. G. Demidenko and I. P. Lugovaya</u>	941	762
IN INDUSTRIAL LABORATORIES		
Organization of Analytic Control at the Ufimsk Synthetic-Alcohol Plant. <u>A. A. Kaluzhskii and M. A. Plan.</u>	950	768
On the Work of the Central Industrial Laboratory of the Chelyabinsk Zinc Electrolyte Plant. <u>I. A. Soiferman.</u>	952	769
FROM THE EDITORIAL OFFICE		
Question. <u>S. I. Zaretskii.</u>	955	770
Question. <u>M. M. Sof'ina and O. G. Timoshina</u>	958	772
CRITICISM AND BIBLIOGRAPHY		
Radioisotope Instruments. <u>V. Ya. Gavrik</u>	959	773
New Books On Analytic Chemistry in 1965. <u>I. Orient</u>	960	774
New Books on Spectral Analysis in 1965. <u>G. B. Preobrazhenskaya.</u>	962	775

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 7

July, 1965

CONTENTS

	PAGE	RUSS. PAGE
Improving the Quality of Metallurgical Production and the Problems of Industrial Laboratories. <u>M. V. Pridantsev</u>	967	779
METHODS OF CHEMICAL ANALYSIS		
Physicochemical Methods for Analyzing Pesticides and Fertilizers (Review). <u>Yu. S. Lyalikov, V. I. Bodyu, and I. V. Kozlova</u>	969	781
A Kinetic Method for Determining Vanadium by Means of H-Acid. <u>S. U. Kreingold' and E. A. Bozhevol'nov</u>	974	784
A New Complexometric Indicator for Copper. <u>I. S. Mustafin, N. N. Goryunova,</u> <u>and N. S. Frumina</u>	976	786
Extraction Photometric Determination of Microamounts of Bismuth. <u>Yu. I. Usatenko, A. M. Arishkevich, and A. G. Akhmetshin</u>	978	788
Photocolorimetric Determination of Vanadium in Steel. <u>V. N. Podchainova,</u> <u>A. V. Dolgorev, and V. Ya. Dergachev</u>	981	790
The Effect of Silicon on the Conditions for the Anodic Deposition of Austenite. <u>G. K. Baranova and Yu. A. Klyachko</u>	983	792
Production Control of the Herbicide 2,4-Dichlorophenoxyacetic Acid by Potentiometric Titration. <u>E. A. Gribova and E. Yu. Khmel'nitskaya</u>	986	795
An Analytical Method for the Insecticide N-Methyl- α -naphthylurethane. <u>Yu. V. Lyande and A. A. Cherkasskii</u>	991	799
Colorimetric Determination of Small Amounts of Hydroquinone in Solutions and Discharge Water. <u>Yu. Yu. Lur'e and Z. V. Nikolaeva</u>	994	802
The Use of Gas-Liquid Chromatography for Analyzing Mixtures from Methyl Cellulose Production. <u>Yu. S. Filippov and Ya. A. Tsarfin</u>	996	803
Determination of Uranium in Ores (Exchange of Experience). <u>F. A. Mukashev</u> <u>and N. G. Syromyatnikov</u>	999	806
Polarographic Determination of Europium and Ytterbium in a Calcium Chloride Supporting Electrolyte (Exchange of Experience). <u>S. B. Il'kova</u> <u>and S. M. Gubel'bank</u>	1000	806
Determination of Hafnium in Carbon Steel (Exchange of Experience). <u>Z. G. Barmotina and L. A. Kvichko</u>	1001	807
A Rapid Method for Solder Analysis (Exchange of Experience). <u>L. N. Luzina</u>	1003	808
Determination of Propylene Oxide in the Presence of Tetrahydrofuran (Exchange of Experience). <u>A. I. Reitburd, N. M. Sher, and B. E. Konovalova</u>	1004	808

CONTENTS (continued)

	PAGE	RUSS. PAGE
PHYSICAL METHODS OF INVESTIGATION		
Measurement of the Surface Effect of Chemical Reactions in Metal-Slag Systems. Yu. A. Minaev and V. A. Grigoryan.	1005	809
On Stress Measurements by Means of the Magnetoelastic Method. R. E. Ershov and M. M. Shel'	1008	811
X-Ray Structural Analysis of Individual Nonmetallic Impurities. Z. A. Shevchenko and Ya. I. Spektor	1012	814
Rapid Method for Estimating the Protective Properties of Anodic Oxide Films on Aluminum. A. F. Bogoyavlenskii, V. T. Belov, A. A. Trofimov, G. V. Shipulina, I. A. Vagina, and G. R. L'vov.	1015	816
Thermocouple Calibration Method for Temperature Measurements in the Grinding Zone. A. V. Yakimov, V. A. Sipailov, and Yu. A. Kazimirchik	1018	818
Use of Spectral Analysis in Effusion Measurements of Vapor Pressure. V. G. Muradov and P. V. Gel'd.	1022	820
Measurement of the Electrical Conductivity of Metals at High Temperatures Without Using High-Temperature Furnaces. D. F. Kalinovich, I. I. Kovenskii, and M. D. Smolin.	1026	823
Automatic Analysis of Aluminate-Alkali Solutions Based on the High-Frequency Method. E. A. Khotskii, V. A. Zarinskii, and Yu. A. Tonkushin	1029	825
Inspection of the Degree of Decarburization of High-Speed Silver Steel by Means of the Thermo-emf Method (Exchange of Experience). N. P. Zhetvin, Ya. L. Frid, and L. T. Gankevich	1031	827
Simple Method for Eliminating the Effect of Grain Orientation on the Intensity (Exchange of Experience). A. S. Kagan	1032	827
Exposure of the Graphite Structure by Means of the Macrophotographic Method (Exchange of Experience). I. I. Pavlenko, T. S. Kas'yanova, and T. V. Rovenskaya	1033	828
Electrolytic Cutting of Indium Antimonide Monocrystals (Exchange of Experience). A. S. Voevodskii, V. V. Isaev, and V. V. Ostroymov	1035	829
X-Ray Structural Analysis of Microimpurities in Glasses (Exchange of Experience). V. A. Minakov and V. P. Stativa.	1036	829
MATHEMATICAL METHODS OF INVESTIGATION		
A Simplex Method for Designing Extremal Experiments. V. G. Gorskii and V. Z. Brodskii	1037	831
A Comparison of Simplex Design with the Box-Wilson Method by the Example of a Chemical Reaction. E. V. Markova	1043	836
On the Problem of Optimizing the Density of Granular Mixtures for Light Concretes. I. G. Zedginidze and N. N. Lominadze.	1047	840
Estimating the Unknown Parameters of Equations of Chemical Kinetics. E. A. Felgin and Ya. A. Kogan	1052	844
The Concept of the Accuracy of Analysis. S. M. Raiskii	1061	851
An Information Retrieval System on the Subject of "The Adhesion of Polymers" Using Edge-Punched Cards (Exchange of Experience). V. E. Basin	1063	853
MECHANICAL METHODS OF TESTING		
On the Factors Causing the Discontinuation of Development of a Fatigue Crack. I. V. Kudryavtsev	1064	854
Low-Temperature Fatigue Strength of Axle Steel in the Interference-Fit Zone. G. S. Pisarenko, L. D. Chernenko, and B. A. Gryaznov	1069	859
The Effect of the Loading Frequency on the Fatigue Strength of "45" and É1612 Steels. I. A. Troyan.	1073	862
Scale Effect in Fatigue Fracture Caused by the Distortion of Similarity. V. Yu. Izakson	1075	864
Relationship Between the Energy of Brittle Fracture and the Resistance to Cyclic Loading in the Damaged Condition. A. V. Velikanov.	1079	867

CONTENTS (continued)

	PAGE	RUSS. PAGE
On the Investigation of Specimens in Bending with Large Plastic Deformation. <u>E. I. Molchanov and A. A. Salamov</u>	1082	869
Determination of the True Strain in the Neck of a Specimen During Fracture. <u>V. A. Skudnov</u>	1084	871
A Method for the Investigation of the Effect of Stress on Gas Corrosion of Steel. <u>Yu. I. Archakov, B. S. Golubovskii, and V. I. Il'ichev</u>	1087	873
A Method for Determining the Strength of Cermet Filtering Elements. <u>Ya. A. Kaminskii</u> and <u>N. I. Agafonov</u>	1090	875
INSTRUMENTS AND LABORATORY TECHNIQUES		
Fatigue Testing with Variable Stress Range on Resonance Machines. <u>V. P. Kogaev</u> and <u>A. A. Golubev</u>	1092	878
Two-Speed Programmed Machine for Fatigue Tests. <u>O. B. Balakovskii</u> and <u>V. É. Pavlovskii</u>	1095	880
Stepping Up the Cyclic Excitation Power for Tests with Hydraulic Vibrators. <u>Yu. E. Tyablikov</u>	1098	883
A Device for Measuring Deformations of a Sample in Tests for Transient Heat Resistance. <u>N. M. Pul'tsin and V. A. Larionov</u>	1101	885
A Lever Force Meter. <u>B. M. Gershkovich</u>	1103	886
A Device for Measuring the Moisture Content of a Gaseous Mixture by the Thermal- Conductivity Method. <u>B. B. Ershov, V. P. Ryabov, and L. E. Kocherov</u>	1104	887
The ÉV-2M Electronic Hygrometer. <u>V. I. Ermakov, E. V. Latyshev, and F. I. Antraptsev</u> . .	1107	889
A Compact Integrating Electric Hygrometer. <u>E. A. Kochetkova</u>	1109	890
A Tubular Device for Studying the Flow of High-Density Coarsely-Dispersed Suspensions. <u>I. G. Bulina</u>	1111	892
Automatic Recording Thermobalance. <u>Yu. S. Remizov, Ya. V. Vasil'ev,</u> and <u>E. V. Margulis</u>	1113	893
Electrical Master Device for Programmed Automatic Control Systems. <u>G. A. Zablotskii</u> . .	1115	894
Application of Corona Discharge for Gas Chromatography Detection. <u>B. P. Okhotnikov,</u> <u>I. V. Bondarenko, and V. P. Shvartsman</u>	1116	895
A Device for Selecting Samples from Various Parts of a Suspended Layer (Exchange of Experience). <u>Yu. G. Egiazarov</u>	1119	898
Automatic Control of Heating and Cooling Rates in the Study of Phase Diagrams (Exchange of Experience). <u>M. A. Gorovoi, N. N. Koigushkii, V. I. Mil'ko, F. M. Kolomitskii,</u> and <u>L. N. Antipin</u>	1120	898
Calibration of Hygrometers for an Oil-Water Emulsion (Exchange of Experience). <u>I. Yu. Klugman</u>	1121	899
Apparatus for Studying the Hydrogen Permeability of Steel Plate (Exchange of Experience). <u>V. G. Moroz and P. N. Zelentsov</u>	1123	899
CRITICISM AND BIBLIOGRAPHY		
Analysis and Experiment Design by the Maximum-Likelihood Method. <u>N. P. Klepikov</u> and <u>S. N. Sokolov</u> . Reviewed by <u>A. N. Shiryaev</u>	1124	901
Books on Mathematical Research Methods in 1965. <u>G. B. Preobrazhenskaya</u>	1126	902
INFORMATION		
The First All-Union Conference on Experiment Design. <u>Yu. P. Adler</u> and <u>G. B. Preobrazhenskaya</u>	1129	904
The All-Union Interuniversity Scientific Conference on Determining Trace Amounts of the Elements. <u>G. P. Rudzit</u>	1131	905
A Conference of Workers of the Chemical and Spectral Laboratories of the Donbas. <u>A. N. Tkachenko</u>	1133	907

CONTENTS (continued)

	PAGE	RUSS. PAGE
A Conference on Analytic Methods of Control in the Manufacture of Fertilizers and Chemical Means of Crop Protection. <u>V. I. Shlenskaya, N. T. Smolova,</u> <u>and T. I. Gudasheva</u>	1134	907
The Second Scientific and Technical Conference on Equipment for Testing Ferromagnetic Materials. <u>I. I. Kifer</u>	1136	909
Correspondence Courses in Metrology and Accurate-Measurement Techniques	1138	910
Sergei Tikhonovich Nazarov.	1139	911
A Collection of Transactions of the All-Union Scientific Research Institute of Spectral Determination. <u>L. S. Studenskaya</u>	1140	912

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 8

August, 1965

CONTENTS

	PAGE	RUSS. PAGE
Standard Samples and Standards—The Way to Increase the Quality of Analysis. <u>V. V. Stepin</u>	1143	915
METHODS OF CHEMICAL ANALYSIS		
The Development of Analytical Chemistry in 1964. <u>A. K. Babko</u>	1145	917
Solid Phase Reactions in Amperometric Titration. <u>E. M. Skonets and V. A. Chernyi</u>	1163	937
Determination of Free Acid in Production Solutions of Nickel and Cobalt Salts. <u>E. Sh. Ioffe</u>	1166	939
Conductometric Determination of Low Concentrations of Ammonia in Gases. <u>M. L. Varlamov and I. V. Kordon</u>	1168	940
Microdetermination of Carbon and Hydrogen in Compounds with a Triterpenoid Structure. <u>V. S. Bazalitskaya, M. K. Dzhamaletdinova, and G. M. L'dokova</u>	1171	943
Determination of Sulfur in Carbon Ferrochrome (Exchange of Experience). <u>M. Sh. Kats, N. M. Khanina, G. L. Povolotskaya, and V. I. Zhuravleva</u>	1173	944
A Potentiometric Method for Cobalt (Exchange of Experience). <u>V. S. Romanova and N. I. Shishkina</u>	1174	945
Determination of Iron in Magnesium and its Alloys (Exchange of Experience). <u>V. N. Tikhonov</u>	1175	945
Determination of Silicon in Aluminum Alloys and Ligatures (Exchange of Experience). <u>T. V. Matrosova and Z. A. Zubkova</u>	1176	945
Spectrophotometric Determination of Vanadium in Titanium Tetrachloride (Exchange of Experience). <u>D. I. Tsekhovol'skaya and B. M. Merenkova</u>	1177	946
Determination of Indium in Production Solutions (Exchange of Experience). <u>Yu. P. Kalina and V. V. Baburina</u>	1178	946
Polarographic Determination of Aluminum in Discharge Water (Exchange of Experience). <u>M. M. Buzlanova and N. A. Kurochkina</u>	1179	947
Rapid Determination of Copper in Alloys (Exchange of Experience). <u>L. N. Luzina</u>	1180	947
Determination of the Acidity of Etching Baths in the Presence of Iron (Exchange of Experience). <u>K. I. Kupershtok and Kh. D. Perkass</u>	1181	947
METHODS OF SPECTRAL ANALYSIS		
Application of Nuclear Magnetic Resonance to the Investigation of Properties of High- Molecular Compounds. <u>A. S. Khachaturov</u>	1182	948
Analysis of Alloys and Galvanic-Bath Electrolytes by the Nuclear Magnetic Relaxation Method. <u>A. A. Popel' and Z. A. Saprykova</u>	1192	957

CONTENTS (continued)

	PAGE	RUSS. PAGE
Assay of Gold in Geological Samples by Chemical Spectroscopy. <u>E. I. Savichev and E. V. Shugurov</u>	1195	959
Use of a Plasma Light Source in Spectrochemical Analysis of Mineral Raw Material. <u>E. I. Granovskii</u>	1197	962
Rapid Assay of Tin and Antimony in Ores and Dressing Products. <u>F. V. Nikitin</u>	1201	966
Spectral Determination of the Relative Content of 1,4-Cis, 1,4-Trans, and 1,2-Configurations in Polybutadiene Samples. <u>N. V. Kozlova, F. F. Sukhov, and V. P. Bazov</u>	1204	968
Determining Zinc in Aluminum Alloys with the FES-1 Stylometer (Exchange of Experience). <u>L. N. Komlev</u>	1207	970
Thermostatic Control of Samples in High-Resolution NMR Spectrometers (Exchange of Experience). <u>E. E. Zaeu and Yu. N. Molin</u>	1208	971
 PHYSICAL METHODS OF INVESTIGATION		
X-Ray Methods of Stress Measurements. <u>D. M. Vasil'ev</u>	1209	972
On Some Distinctive Features of the X-Ray Method of Measuring Elastic Stresses. <u>M. Ya. Fuks and L. I. Gladkikh</u>	1217	978
A Comparison of Various Methods of Measuring the Texture of Cold-Rolled Transformer Steel. <u>G. M. Vorob'ev, Ya. V. Grechnyi, L. I. Kotova, and I. P. Shmyrev</u>	1222	983
The Effect of Particle Size on the Results of Quantitative X-Ray Phase Analysis. <u>L. L. Zav'yalova and A. S. Ivoilov</u>	1225	986
Quantitative Separate X-Ray Structural Analysis of Multiphase Carbides Without Their Extraction from the Steel. <u>V. A. Landa</u>	1229	989
 MECHANICAL METHODS OF TESTING		
Measurement of Microhardness as a Method of Testing Materials. <u>V. N. Vigdorovich</u>	1233	993
On a Method for Determining the Microhardness of Cementite in Preeutectic White Cast Iron. <u>R. P. Todorov</u>	1243	1002
The Effect of Some Factors on the Hardness Value Determined by the Method of Scratching. <u>U. S. Boyarskaya and D. Z. Grabko</u>	1246	1004
Relationship Between the Hardness and the Ultimate Strength of Steel and Cast Iron Forgings and Castings. <u>M. A. Kirsanova and P. V. Sklyuev</u>	1251	1009
On the Method of Investigation of Plastic Strain by Measuring Hardness. <u>G. L. Kufarev, G. D. Del', and M. G. Gol'dshmidt</u>	1253	1011
Removal of Perspective Distortions in Photographing Deformations (Exchange of Experience). <u>V. P. Pivovarov</u>	1256	1013
 INSTRUMENTS AND LABORATORY TECHNIQUES		
Attachment to the PMT-3 Hardness Tester for the Automation of Measurements. <u>M. S. Ablova and A. A. Averkin</u>	1257	1015
Device for Determining the Hardness of Plastics by the Method of Scratching. <u>B. M. Gershkovich, N. V. Chepik, and M. A. Predtechenskii</u>	1260	1017
Device for Taking Long-Time Corrosion Fatigue Curves on Small Cross-Section Specimens at High Temperatures and Pressures. <u>A. V. Ryabchenkov, V. P. Sidorov, and N. F. Pongil'skii</u>	1262	1019
Device for Measuring Interphase Tension Between Metal and Slag at High Temperatures. <u>B. C. Lomberg, A. A. Vertman, A. M. Yakobson, V. I. Zheladnov, and A. Yu. Polyakov</u>	1264	1020
Loop Oscillograph Attachment for Measuring Small Displacements. <u>V. M. Shestakov, V. A. Fateev, and V. K. Serikov</u>	1266	1021
Investigation of Permanent Magnets. <u>B. M. Zhiryakov, A. I. Larkin, and E. A. Protasov</u>	1267	1022
Method of Setting the Magnet of a High-Resolution Nuclear Magnetic Resonance Spectrometer. <u>A. N. Lyubimov, A. F. Varenik, K. I. Zimina, E. L. Mateev, and E. M. Malakhaev</u>	1269	1023

CONTENTS (continued)

	PAGE	RUSS. PAGE
Changing the Loading Mechanism of the MP-1200 (Exchange of Experience). <u>A. I. Kosarev, A. I. Volkov, A. T. Pronin, and V. S. Platonov.</u>	1272	1025
Modernizing the MI-1 Laboratory Friction Machine (Exchange of Experience). <u>V. I. Boitsov</u> . .	1273	1026
Tube Substitution in Imported Machines of Type ZM and ZP (Exchange of Experience). <u>A. V. Kuznetsov</u>	1275	1026
A Device for Preparing Film Samples (Exchange of Experience). <u>V. V. Livanov</u>	1276	1027
Changing the Measurement Limits of the ÉPP-09 Recording Potentiometer (Exchange of Experience). <u>N. P. Galushko, D. N. Gritsan, and G. L. Shatrovskii</u>	1277	1027
Using ÉPP-09 Potentiometers for Recording Weak EMF (Exchange of Experience). <u>A. V. Sidorovich</u>	1278	1028
An External Indicator for the 8AN4-7M Eight-Channel Amplifier (Exchange of Experience). <u>A. F. Vinogradov and A. V. Fedotov</u>	1279	1028
Tubes for X-Ray Spectral Study of Fractures in Metals and Alloys (Exchange of Experience). <u>A. M. Zherdev and B. Ya. Petrenko</u>	1280	1029
Using the Akulov Torque Magnetometer to Study Steel Transitions in the Presence of Heating (Exchange of Experience). <u>N. N. Lipchin, V. M. Shardakov, and S. M. Rapoport</u>	1281	1029
A Device for Checking the Gas Saturation of Foundry Aluminum Alloys (Exchange of Experience). <u>G. B. Stroganov, S. A. Shneider, and L. Kh. Éntin</u>	1282	1030
Automatic Photometric Titrators (Exchange of Experience). <u>L. B. Shaginyan</u>	1283	1030
CRITICISM AND BIBLIOGRAPHY		
M. I. Vinograd. Impurities in Steel and its Properties. Review by <u>Yu. A. Shul'te</u>	1284	1032
Scientific Plan for Literature Publication by "Metallurgiya" in 1966.	1285	1034

NOTE

The article appearing on page 1033 in the original has
not been translated since it does not contain material
of a technical nature.

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	S. T. Nazarov
A. I. Bysev	M. V. Pridantsev
A. M. Dymov	(Editor-in-chief)
Ya. B. Fridman	N. P. Shchapov
B. V. Gnedenko	F. M. Shemyakin
P. L. Gruzin	A. P. Striganov
Yu. A. Klyachko	P. Ya. Yakovlev
I. I. Kornilov	A. A. Zhukhovitskii

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 9

September, 1965

CONTENTS

	PAGE	RUSS. PAGE
METHODS OF CHEMICAL ANALYSIS		
Applications of Diantiprylmethane in Analytical Chemistry (A Review). V. P. Zhivopistsev.	1295	1043
Development Chromatography without a Carrier Gas. <u>A. A. Zhukhovitskii,</u> <u>M. L. Sazonov, A. F. Shlyakhov, and A. I. Karymova</u>	1301	1048
Use of Gas Chromatography to Determine Admixtures of Acetaldehyde and Propylene Oxide in Ethylene Oxide. <u>R. N. Mokeeva and Ya. A. Tsarfin</u>	1306	1053
Differential Spectrophotometric Determination of Titanium with Diantiprylmethane. <u>T. M. Malyutina, R. S. Tramm, and K. S. Pevzner</u>	1308	1054
Aspects of the Use of Complexons in the Analysis of Polymetallic Systems. <u>M. M. Sochevanova and V. G. Sochevanov</u>	1311	1058
Rapid Analysis of Organometallic Compounds by means of Reflected Beta- Radiation. <u>F. B. Ashbel', A. M. Parshina, M. S. Goizman, L. I. Zhizhina,</u> <u>and K. M. Kuptsova</u>	1316	1062
Differential Spectrophotometry by Measuring the Photocurrent in a Photoelectric Colorimeter. <u>A. I. Lazarev, V. I. Lazareva, and Z. V. Reguzova</u>	1318	1064
Chemical Phase Analysis of the Scandium Borides. <u>M. D. Lyutaya</u> <u>and Z. S. Akinina</u>	1321	1066
Automatic Determination of Gases in Steel Using the EA-1 Exhalograph. <u>N. N. Timoshenko, T. A. Izmanova, and E. M. Chistyakova</u>	1323	1068
Determination of Magnetite in Ferruginous Hornstones (Exchange of Experience). <u>O. P. Lebedev, T. A. Frantsuzova, and V. N. Kudelin</u>	1325	1069
Use of Flame-Ionization Detector to Determine Carbon in Metals (Exchange of Experience). <u>O. A. Sukhorukov and N. T. Ivanova</u>	1326	1070
Determination of Copper in Ferrites (Exchange of Experience). <u>V. T. Vasilenko</u>	1327	1070
METHODS OF SPECTRAL ANALYSIS		
Elimination of Degeneracy in X-Ray Spectral Analysis by an Admixture of Diluent or of the Element Being Determined. <u>Sh. I. Duimakaev,</u> <u>and M. A. Blokhin</u>	1328	1072
Influence of the Spectral Composition of Primary Radiation on the Accuracy of the Calibration Method of X-Ray Fluorescent Analysis. <u>G. V. Pavlinskii, N. F. Losev, and V. M. Makov</u>	1334	1077
External-Standard Method of X-Ray Secondary-Spectrum Analysis Taking into Account Sample Absorption. <u>A. V. Pivovarov</u>	1339	1081

CONTENTS (continued)

	PAGE	RUSS. PAGE
An Automated Method of Quick Determination of Mercury in Powder Samples. <u>Yu. N. Kuznetsov and L. P. Chabovskii</u>	1344	1085
Using Fluorination Reactions to Increase the Sensitivity of Spectral Analysis. <u>A. S. Sambueva and S. A. Shipitsyn</u>	1348	1087
Determining Sodium in Lead of Increased Purity (Exchange of Experience). <u>A. M. Ustimov, N. Ya. Chalkov, and A. V. Yakovleva</u>	1351	1090
Spectral Analysis of Niobium Chloride and Technical Niobium Hydroxide by the Condensed-Spark Method (Exchange of Experience). <u>V. I. Bokova</u> and <u>G. V. Gorina</u>	1352	1090
Determining Sodium and Potassium in Titanium Dioxide by the Flame Photometry Method (Exchange of Experience). <u>Z. G. Fratin</u> , <u>G. N. Moshkovich</u> , and <u>Zh. A. Filippova</u>	1353	1090
A Cryostat for Studying the Electrical, Photoelectric, and Optical Properties of Liquids (Exchange of Experience). <u>R. G. Romanets</u> , <u>V. A. Alyab'ev</u> , <u>V. F. Ushakov</u> , and <u>V. G. Bobyl'</u>	1354	1091
 PHYSICAL METHODS OF INVESTIGATION		
A Single-Probe Method of Measuring the Resistivity of Semiconductors with Alternating Current. <u>M. I. Iglitsyn</u> , <u>A. A. Meier</u> , <u>O. V. Karagioz</u> , <u>D. I. Levinzon</u> , and <u>A. V. Ivanov</u>	1355	1092
Exposing Heterogeneities of the Impurity Distribution in Gallium Arsenide Crystals. <u>A. V. Berkova</u> , <u>M. G. Mil'vidskii</u> , and <u>V. B. Ovenskii</u>	1358	1095
Quantitative Determination of the Degree of Reaction of Oxidizing Agents in the Liquid Phase with Corrosion-Resisting Synthetic Materials. <u>B. I. Borisov</u>	1360	1096
Measuring the Permeability of Ferromagnetic Powders. <u>I. I. Kifer</u> and <u>I. B. Semenovskaya</u>	1364	1100
Quick Analysis of Iron-Bearing Components of Partially Reduced Pellets of Krivoi Rog Ore. <u>V. N. Andronov</u> , <u>É. F. Syrovatskii</u> , and <u>B. V. Chekin</u>	1367	1102
A High-Temperature Method of Measuring the Activity of Oxygen in Oxide Systems. <u>N. G. Korshikova</u> and <u>L. L. Kunin</u>	1370	1104
An Improvement of the Local Method of Extracting Nonmetallic Inclusions. <u>V. P. Pirozhkova</u> , <u>T. I. Litvinova</u> , and <u>S. G. Chernyavskaya</u>	1372	1106
A Mass Spectrometric Method of Determining the Hydrogen Permeability of High-Temperature Materials. <u>Yu. I. Belyakov</u> and <u>Yu. I. Zvezdin</u>	1374	1107
A Three-Thermometer Method for Measuring Vapor Supersaturation in a Stream. <u>M. L. Mikhel'son</u> , <u>D. N. Karlikov</u> , and <u>V. F. Alferov</u>	1376	1109
Exposing the Granular Structure of Cementite in White Iron. <u>Yu. N. Taran</u> and <u>V. I. Novik</u>	1378	1110
Microscopic Separation of the Carbide Phases in Fe-C-Cr Alloys (Exchange of Experience). <u>Yu. N. Taran</u> , <u>V. M. Snagovskii</u> , and <u>I. E. Lev</u>	1380	1111
A Method of Determining Magnetically Susceptible Reguli in Metallurgical Slags (Exchange of Experience). <u>P. P. Kazakov</u> and <u>S. V. Radilov</u>	1382	1112
On the Catalytic Decomposition of Some Oxygen-Containing Organic Substances in Stainless Steel (Exchange of Experience). <u>S. T. Kozlov</u> , <u>G. D. Tantsyrev</u> , and <u>V. L. Tal'roze</u>	1384	1113
Measuring the Surface Tension of Slags at 1400-1800°C (Exchange of Experience). <u>P. P. Evseev</u>	1386	1114
Measuring the Surface Temperature of Materials during High-Frequency and Acoustical Drying (Exchange of Experience). <u>N. N. Dolgoplov</u> and <u>S. G. Simonyan</u>	1387	1114

CONTENTS (continued)

	PAGE	RUSS. PAGE
MECHANICAL METHODS OF TESTING		
A Method of Studying Elasto-Plastic Deformations with Repeatedly Varying Loads. P. T. Bogdyl', V. V. Larionov, and N. I. Prigorovskii	1388	1116
A Photoelectronic Method of Determining the Stressed State of Models by means of Photoelasticity under Dynamic and Static Conditions. A. V. Kortnev, Yu. V. Rublev, F. A. Shil'gorin, and B. I. Tsesler	1392	1119
A Method of Studying the Advance of a Plastic-Deformation Front According to the Slip Bands within Grains. A. V. Gur'ev and L. V. Kuksa	1395	1122
A Test of Nonuniformity of Deformation under Tension. L. G. Kharitonov	1397	1123
On the Uniform Deformation of Bimetals. A. P. Kofman, P. O. Pashkov, and A. A. Yavor	1400	1125
Method of Determination of Specific Elongation of Metal Sheets. N. P. Kolesnikov	1402	1127
The Influence of the Compliance of General-Purpose Test Machines on the Rate of Deformation of Metal Samples. G. Z. Lomaev	1406	1130
Determining Residual Stresses with Conversion of the Readings of the Sensing Element by a Computer. N. A. Karasev, V. I. Morozov, and N. M. Varchak	1410	1133
INSTRUMENTS AND LABORATORY TECHNIQUE		
Apparatus for Testing Metals for Creep in a Compound Stressed State. L. A. Prishchepionok and N. S. Danilov	1413	1136
A Rotary Machine for High-Speed Fracture of Samples. Ya. I. Balakhontsev and Yu. P. Paramzin	1416	1138
An Improved Device for Studying the Abrasion Resistance of Alloys at High Temperatures. O. G. Chernykh	1418	1140
An Electric Furnace for Torsional Testing of Metals at High Temperatures in a Protective Medium. N. I. Nistratov and L. T. Timoshuk	1420	1141
Apparatus for Measuring the Thermal Conductivity of Solid and Liquid Metals. R. P. Yurchak and L. P. Filippov	1421	1142
A Highly Stable Thermostat. V. A. Verbitskii, A. I. Ganf, and A. M. Sazonov	1424	1145
A Thermoelectric Condensation Hygrometer. E. A. Kolenko	1426	1146
Apparatus for Studying the Friction and Adhesive Interaction of High-Melting Materials. A. P. Semenov and V. V. Pozdnyakov	1428	1147
Automation of X-Ray Line Recording on Type URS-50 I Apparatus (Exchange of Experience). A. M. Mikhailov	1430	1149
Arrangement for the Study of Texture on Type URS-50 IM X-Ray Apparatus (Exchange of Experience). V. I. Papchenko, N. M. Fedosov, and V. I. Potapov	1432	1150
Heating Attachment for a Type URS-50I Diffractometer (Exchange of Experience). A. S. Bystrikov	1434	1151
Improved Measuring Circuit for a Type ÉPPV-60 Automatic Compensator (Exchange of Experience). V. Zalkin	1435	1151
Electrode System for the Electrical Breakdown of Thin Dielectric Specimens (Exchange of Experience). S. N. Kolesov	1436	1152
Reference Electrode for the Measurement of Contact Potentials by the Vibrating Capacitor Method (Exchange of Experience). D. L. Kondrashov and N. I. Kamkin	1437	1152
Improvement in Laboratory Arc Equipment for Spectral Analysis (Exchange of Experience). N. M. Zhuk	1438	1153
IN INDUSTRIAL LABORATORIES		
Team for the Study of Organization and Operating Practices in Centralized Plant Laboratories. V. S. German	1439	1154

CONTENTS (continued)

	PAGE	RUSS. PAGE
The Work of the Central Industrial Laboratory of the Gor'kii Metallurgical Works. <u>A. I. Chichkanov</u>	1441	1155
 CRITICISM AND BIBLIOGRAPHY		
V. K. Markov, E. A. Vernyi, A. V. Vinogradov, S. V. Elinson, A. E. Klygin, and I. V. Moiseev. Uranium: Methods for Determining It. Reviewed by <u>V. I. Kuznetsov</u> ,	1443	1156
 INFORMATION		
The Pittsburgh Conference on Analytic Chemistry and Applied Spectroscopy	1445	1157
All-Union Conference on Polarography	1448	1159
Yulii Abelevich Chernikhov	1449	1160

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	M. V. Pridantsev
A. I. Busev	(Editor-in-Chief)
A. M. Dymov	N. P. Shchapov
Ya. B. Fridman	F. M. Shemyakin
V. B. Gnedenko	A. R. Striganov
P. L. Gruzin	P. Ya. Yakovlev
Yu. A. Klyachko	A. A. Zhukhovitskii
I. I. Kornilov	

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 10

October, 1965

CONTENTS

	PAGE	RUSS. PAGE
METHODS OF CHEMICAL ANALYSIS		
Amperometric Titration (A Review). <u>O. A. Songina</u>	1453	1163
Continuous Polarographic Determination of Heavy Metals in Electrolytes. <u>Kh. Z. Brainina</u> and <u>V. B. Belyavskaya</u>	1464	1172
The Feasibility of Determining 10^{-10} – $10^{-12}\%$ Impurities by the C. A. P. Method. <u>A. G. Stromberg</u>	1467	1175
Use of Oscillographic Polarography to Determine Ge, Se and Sn in Semiconductor Materials. <u>I. A. Tserkovnitskaya</u> and <u>V. I. Epimakhov</u>	1471	1178
Determining Cadmium in Salts by Means of Oscillographic Cumulative Amalgam Polarography. <u>E. N. Vinogradova</u> , <u>A. I. Kamenev</u> , and <u>N. V. Lisenkova</u>	1473	1180
Determining Metals on Solid Electrodes by Pulse Polarography. <u>L. G. Madan</u> , <u>Yu. S. Lyalikov</u> , and <u>V. I. Bodyu</u>	1476	1182
Polarographic Determination of Copper, Nickel and Cobalt in Rocks. <u>V. V. Astaf'eva</u>	1478	1184
Freeing Polarographic Solutions from Oxygen. <u>A. G. Stromberg</u> and <u>Yu. N. Zhikharev</u>	1480	1185
Rapid Polarography Using a Vibrating Mercury Drop Electrode. <u>V. G. Mairanovskii</u>	1482	1187
Polarographic Determination of Aliphatic Diamines. <u>Yu. S. Ignat'ev</u>	1484	1188
Pulsed Polarographic Method for Determining "Tsineb" (Exchange of Experience). <u>Yu. S. Lyalikov</u> , <u>V. I. Bodyu</u> , and <u>I. V. Kozlova</u>	1486	1190
Sensitivity of Vacuum Melting for Detecting Oxygen in Niobium (Exchange of Experience). <u>Yu. A. Karpov</u> , <u>G. G. Glavin</u> , <u>O. V. Zav'yalov</u> , and <u>R. V. Ivanova</u>	1487	1190
Potentiometric Determination of Nitroguanidine (Exchange of Experience). <u>V. M. Aksenenko</u> , <u>E. G. Aksenenko</u> , and <u>E. N. Gromova</u>	1488	1191
Determining Boric Acid in a Nickel-Plating Bath (Exchange of Experience). <u>P. K. Norkus</u> and <u>O. K. Gal'dikene</u>	1489	1191
Determination of Gallium in Niobium-Gallium Alloys (Exchange of Experience). <u>I. E. Makasheva</u> , <u>I. S. Kirin</u> , and <u>Yu. A. Makashev</u>	1490	1192
PHYSICAL METHODS OF INVESTIGATION		
Determination of Thermal Coefficients for the Initial Period of Heating of a Specimen from the Regularities of the Quasi-Stationary Conditions. <u>L. A. Brovkin</u>	1491	1193
The Use of Thermal Analysis in the Investigation of the Processes Taking Place During the Metallization of Ceramics in Industrial Furnaces. <u>V. N. Pyatnitskii</u> and <u>B. K. Kazurov</u>	1496	1197
Radioactive Tracer Method for Monitoring and Investigating Electrolytic Metal Plating Processes. <u>D. G. Tochil'nikov</u>	1499	1199
Method of Determining the Adhesion Strength of Electrodepositions on a Base Metal. <u>I. E. Klyushkin</u> and <u>M. P. Pankratov</u>	1503	1202
Determining the Primary Places of the Accumulation and Diffusion of Hydrogen in Steel in Electrolytic Hydrogenation. <u>V. A. Orlov</u> and <u>L. A. Glikman</u>	1505	1203

CONTENTS (continued)

	PAGE	RUSS. PAGE
Determining Nitrogen and Boron by Fast-Neutron Activation. <u>I. I. Naumova</u>	1508	1205
Using the Four-Probe Method to Measure the Resistivity of High-Alloy Germanium. <u>P. I. Baranskii, D. I. Levinson, and V. Ya. Shapoval</u>	1510	1207
Quantitative X-Ray Absorption Microradiography. <u>L. B. Ber and Yu. M. Vainblat</u>	1513	1210
A Rapid Method of Measuring the Water Content of Granulated Nitrophosphate Fertilizer. <u>A. I. Ioffe, A. A. Uverskii, and V. V. Gavelya</u>	1516	1212
Determination of the Electrical Conductivity for Ion-Exchange Membranes. <u>N. I. Isaev</u> and <u>V. A. Shaposhnik</u>	1518	1213
The Magnetization of Annular Parts. <u>M. É. Khurgin</u>	1520	1215
A Procedure for Studying Polymers at High Temperatures (Exchange of Experience). <u>M. G. Stolyar</u>	1522	1217
Automatic Recording of the Temperature Field in High-Frequency Drying of Materials (Exchange of Experience). <u>S. G. Simonyan</u>	1524	1218
The Use of Crude Rubber for Making Boats for Carbide Analysis (Exchange of Experience). <u>P. M. Ganich</u>	1525	1218
MATHEMATICAL METHODS OF INVESTIGATION		
Macrostructure Standards for Determining the Dislocation-Density Heterogeneity of Germanium Single Crystals. <u>I. P. Kaganovskii, L. S. Okun', A. V. Ovodova,</u> <u>L. V. Ryabikina, and E. E. Lepikhova</u>	1526	1219
Metrological Determination of the Resistivity Heterogeneity of Germanium Single Crystals. <u>I. P. Kaganovskii, L. S. Okun', and E. E. Lepikhova</u>	1529	1222
The Use of Regression Equations for Modeling Processes. <u>G. P. Golysheva, Z. N. Inyutina,</u> <u>G. S. Kirichenko, B. I. Makalets, and N. B. Ryabinskaya</u>	1531	1224
Taking Measurement Error into Account in Regression Equations for a Linear Relation. <u>A. I. Samoilenko and L. A. Khaustova</u>	1534	1226
The Method of Steep Ascent with the Use of Ranked Data. <u>A. I. Tsimel'zon</u>	1537	1227
Application of Methods of Mathematical Statistics to the Study of Burden Preparation. <u>V. S. Sherman</u>	1539	1229
Comparison of the Effectiveness of Operations for Mixing Sampled Materials. <u>N. R. Romanov</u> . Experience in Summarizing and Coding Information on Mineral Concentration. <u>I. N. Plaksin and L. A. Barskii</u>	1543	1231
The Use of Methods of Mathematical Processing of Experimental Data in the Civil Engineering Laboratory of the Scientific Research Civil Engineering Institute of Heavy Machine Building of the Ural Heavy Machine Plant. <u>A. V. Tret'yakov,</u> <u>B. E. Lokshin, É. A. Garber, and G. K. Trofimov</u>	1547	1235
MECHANICAL METHODS OF TESTING		
Method of Testing Plastics for Long-Term Static Strength. <u>G. G. Popov, G. A. Voloskov,</u> and <u>E. A. Perchikhina</u>	1552	1239
Investigations into the Effect of Rest Periods in the Fatigue Testing of Plastics Under a Static Load. <u>K. V. Panferov and Yu. G. Korabel'nikov</u>	1556	1243
On the Shape of Specimens for the Tensile Testing of Anisotropic Fiberglass Plastics. <u>E. K. Ashkenazi and A. A. Pozdnyakov</u>	1559	1245
The Determination of Instantaneous Strength and Strain Characteristics of Reinforced Plastics. <u>B. A. Lyashenko and G. V. Isakhanov</u>	1562	1248
A Method for Determining the Adhesion of Cast Plastics and Foam Plastics to Various Building Materials. <u>Yu. N. Polyakov</u>	1564	1249
Transparent Plastics as Materials for Models. <u>D. V. Monakhenko</u>	1567	1251
The Assessment of the Service Life of Glued Joints from Data on Accelerated Thermal Aging. <u>V. M. Khrulev</u>	1569	1253

CONTENTS (continued)

	PAGE	RUSS. PAGE
On the Dynamic Investigation of Shock-Absorber Rubber. <u>V. A. Kudryavtsev</u> and <u>V. A. Shvalyuk</u>	1572	1256
INSTRUMENTS AND LABORATORY TECHNIQUES		
Device for the Investigation of the Thermo-optical and Thermomechanical Properties of Polymers. <u>Yu. N. Lesnichii</u>	1575	1259
Determination of the Strain of Plastics by Means of Detachable Tensometers. <u>Yu. G. Korabel'nikov</u> and <u>A. B. Renskii</u>	1577	1261
A Spring Device for the Long Term Testing of Hard Plastics. <u>E. D. Vdovin</u> and <u>K. N. Kan.</u> . .	1579	1262
Type VDZL-64 Induction Flaw Detector for the Inspection of Blade Grooves. <u>P. I. Beda</u> and <u>I. P. Parshin</u>	1581	1263
Automatic Recording of Stress Relaxation Curves in Polymers. <u>B. S. Bobrov</u> and <u>K. N. Kan.</u> . .	1583	1265
Apparatus for Corrosion Testing of Parts Under Stress at High Temperature and Pressure. <u>A. V. Ryabchenkov</u> , <u>N. F. Pongil'skii</u> , <u>E. G. Zaitsev</u> , and <u>V. I. Gerasimov</u>	1584	1265
Compton-Anticoincidence Spectrometer Using an NaI(Tl) Crystal and a Plastic Scintillator. <u>V. T. Tustanovskii</u>	1587	1268
On Electrometric Methods of Ultramicrochemical Analysis. <u>I. N. Maslova</u> and <u>A. D. Esikov</u>	1590	1270
An Ultraviolet Irradiator for Large-Scale Tests of Polymers (Exchange of Experience). <u>Yu. A. Ershov</u> , <u>L. N. Raspopov</u> , and <u>K. F. Volkov</u>	1593	1272
Microscope Attachments for Observing Electropolishing and Etching (Exchange of Experience). <u>A. I. Pekarev</u> and <u>Yu. D. Chistyakov</u>	1594	1273
Using the BU-3 Ballistic Apparatus for Testing Wire (Exchange of Experience). <u>L. A. Krasil'nikov</u> , <u>V. A. Chertousov</u> , and <u>S. A. Silant'ev</u>	1595	1273
A Laboratory Cryostat (Exchange of Experience). <u>B. V. Erzh</u> and <u>A. V. Liven</u>	1596	1274
Apparatus for Automatic Potentiometric and Conductometric Titration (Exchange of Experience). <u>V. F. Evdokimov</u> , <u>I. Ya. Poddybnyi</u> , and <u>I. A. Kuzin</u>	1597	1274
An Attachment for Recording Oscillographic Polarograms on Tracing Paper (Exchange of Experience). <u>Yu. S. Gorodetskiĭ</u> and <u>Sh. A. Seider</u>	1598	1275
CRITICISM AND BIBLIOGRAPHY		
A. B. Shaevich. Methods of Determining the Accuracy of Spectral Analysis. <u>I. M. German.</u> .	1599	1276
F. M. Shemyakin and V. V. Stepin. Ion-Exchange Chromatographic Analysis of Metals. <u>A. I. Lazarev</u>	1602	1278
V. D. Bezuglyĭ. Polarography in Chemistry and Polymer Technology. <u>P. M. Zaitsev</u> and <u>B. P. Zhantalai</u>	1604	1279
INFORMATION		
On the Work of the Mathematics Team of the Kola Branch of the Academy of Sciences, USSR. <u>A. G. Babkin</u> , <u>R. A. Kravchenko-Berezhnoi</u> , and <u>M. Yu. Medvedev</u>	1605	1280
Problems of Analytic Chemistry at the 20th International Congress. <u>I. Orient</u>	1606	1281
New Instruments for Scientific Research. <u>O. B. Andreev</u>	1608	1282
A Rational Assortment of Organic Reagents for Inorganic Ions. <u>V. G. Brudz'</u>	1610	1284
On the Universal Decimal System.	1612	1285
Anatolii Kirillovich Babko (on his 60th Birthday)	1614	1287
ADVERTISEMENTS		
Reotest Rotary Viscometer.	1616	1288A
FO-1 Objective Fluorometer	1617	1288B

CONTENTS (continued)

	PAGE	RUSS. PAGE
UÉMV-100V Electron Microscope	1618	1288C
B3-15 Digital Printing Unit	1620	1288D

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	M. V. Pridantsev
A. I. Busev	(Editor-in-Chief)
A. M. Dymov	N. P. Shchapov
Ya. B. Fridman	F. M. Shemyakin
V. B. Gnedenko	A. R. Striganov
P. L. Gruzin	P. Ya. Yakovlev
Yu. A. Klyachko	A. A. Zhukhovitskii
I. I. Kornilov	

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 11

November, 1965

CONTENTS

	PAGE	RUSS. PAGE
METHODS OF CHEMICAL ANALYSIS		
Determination of Manganese Traces in Very Pure Substances by a Kinetic Method. <u>A. B. Blank and A. Ya. Voronkova</u>	1623	1299
Photometric Determination of Indium in Ores and Metals by Trihydroxyfluorones. <u>V. A. Nazarenko and R. V. Ravitskaya</u>	1625	1301
Photometric Determination of a Trace Amount of Sulfur in Pure Metals and Semiconductor Compounds. <u>V. G. Goryushina and E. Ya. Biryukova</u>	1628	1303
Photometric Determination of Tin with Pyrocatechol Violet. <u>P. Ya. Yakovlev and G. P. Razumova</u>	1632	1307
Determination of Trace Amounts of Calcium in Amphoteric Metals, Their Compounds and Alloys. <u>F. P. Gorbenko and L. I. Degtyarenko</u>	1634	1309
Amperometric Titration of Gold with Thiourea. <u>A. I. Pashchenko, O. A. Songina, and N. I. Kargina</u>	1637	1312
Determination of Heavy-Metal Impurities in Reagents by the Reversion Dithizonate Method. <u>L. A. Bazhanova and I. G. Shafran</u>	1640	1314
Determination of Sulfuryl Chloride in Mixtures of Sulfur Chlorides and Oxychlorides. <u>G. V. Zavarov</u>	1642	1316
Analysis of Blast-Furnace Gas by Chromatography Without a Carrier Gas. <u>V. E. Shevtsov and A. A. Zhukhovitskii</u>	1645	1318
Gas-Chromatographic Analysis of Products of Polyformaldehyde Manufacture. <u>D. N. Sokolov and R. T. Golovatenko</u>	1649	1321
Extraction-Photometric Determination of Naphthalene Monosulfonic Acids in Industrial Sulfonic Material. <u>V. V. Kuznetsov and Yu. V. Glukhova</u>	1652	1324
Determination of Uranium, Thorium and Zirconium with Arsenazo III Without Chemical Separation (Exchange of Experience). <u>L. A. Trofimova and N. G. Syromyatnikov</u>	1654	1325
Extraction Determination of Arsenic in Ores (Exchange of Experience). <u>K. V. Minasyan</u>	1655	1326
Indirect Complexometric Determination of Carbon (Exchange of Experience). <u>A. F. Kuteinikov, N. V. Petrov, and V. D. Chumakov</u>	1656	1326
Determining Moisture in Hydrogen Chloride (Exchange of Experience). <u>T. B. Beider</u>	1657	1327
Determining Gamma Quantities of Cadmium in Natural Waters (Exchange of Experience). <u>E. M. Mal'kov, V. G. Kosyreva, and A. G. Fedoseeva</u>	1658	1327
Speeding Up Gas Chromatography of Multicomponent Systems (Exchange of Experience). <u>A. A. Potatuev, I. K. Shelomov, and A. I. Parimskii</u>	1659	1328
Gas Chromatography of Methyl- and Ethylacroleins (Exchange of Experience). <u>B. G. Belen'kii and V. A. Orestova</u>	1660	1328
A Technique for Determining Halogens and Sulfur by Combustion (Exchange of Experience). <u>T. V. Reznitskaya and V. P. Grigor'yan</u>	1661	1329
Chromatographic Determination of C ₁ -C ₅ Alcohols in Mixtures of Aliphatic Hydrocarbons and Oxygen-Containing Substances (Exchange of Experience). <u>L. P. Kolesnikova, E. G. Simonyants, and Yu. B. Kryukov</u>	1662	1330

CONTENTS (continued)

	PAGE	RUSS. PAGE
METHODS OF SPECTRAL ANALYSIS		
Calculation of Deviation of Concentrations for Additive Multicomponent Mixtures. <u>A. F. Vasil'ev</u>	1664	1331
Experimental Verification of Expressions for Average Deviations of Concentrations of Multicomponent Mixtures. <u>A. F. Vasil'ev</u>	1671	1337
The Effect of Diffusion of Components in the Sparking Zone on the Results of Spectral Analysis of Alloys. <u>Yu. M. Buravlev</u>	1676	1341
A Spectral Method for Determining Carbon by Cyanogen Bands. <u>N. N. Sorokina</u> and <u>P. A. Kondrat'ev</u>	1680	1344
Spectral-Luminescent Determination of 3,4,-Benzpyrene in Highly Refined Industrial Paraffins. <u>L. M. Shabad</u> and <u>A. Ya. Khesina</u>	1682	1345
Simultaneous Determination of Gases in Metals by Emission Spectroscopy (Exchange of Experience). <u>L. M. Fedorova</u> , <u>E. P. Zanina</u> , and <u>V. P. Korneenko</u>	1684	1347
Spectrographic Determination of Niobium, Tantalum, Zirconium, Hafnium, and Cerium in Steel (Exchange of Experience). <u>O. I. Nikitina</u> , <u>N. K. Ivanova</u> , and <u>A. E. Gorevaya</u> .	1685	1347
Spectral Analysis of Powdered Iron for Silicon and Manganese (Exchange of Experience). <u>A. P. Kravchenko</u>	1686	1348
PHYSICAL METHODS OF INVESTIGATION		
Determination of Size of Blocks and Lattice Microdistortions from Debye Lines with Different Indices. <u>V. I. Iveronova</u> and <u>N. N. Osipenko</u>	1687	1349
A Method for Investigating the Distribution of Impurities Between Metal and Slag by Melting in a Suspended State. <u>V. T. Burtsev</u> and <u>V. G. Glebovskii</u>	1692	1352
A Method for Investigation of the Thermodynamic Properties of Alloys. <u>V. I. Alekseev</u> and <u>Yu. N. Surovoi</u>	1696	1356
The Determination of Small Boundary Wetting Angles. <u>B. G. Balashov</u> and <u>Yu. D. Egorova</u> . .	1699	1358
A Method for Determining the Through Porosity of Capillary-Porous Bodies. <u>F. M. Ivanov</u> and <u>K. M. Akimova</u>	1701	1360
Simultaneous Measurement of the Thermal Effects in Coals and Their Viscosity During Heating. <u>Yu. N. Bogoslovskii</u> , <u>L. D. Zhvakina</u> , <u>V. I. Kudryashov</u> , and <u>G. N. Makarov</u> . .	1703	1362
The Possibility of the Use of the VDK-4 Ultramicroscope for Dispersion Analysis of Aerosols (Exchange of Experience). <u>V. A. Kolganov</u>	1706	1364
The Measurement of Temperature of a Converter Blow with the PRK-600 Radiation Pyrometer (Exchange of Experience). <u>A. R. Bazilevskii</u> and <u>R. V. Starov</u>	1708	1365
A Radiometric Method for Determining the Sulfur Content of Naphthalene (Exchange of Experience). <u>V. N. Maklakov</u> , <u>P. N. Gorelov</u> , <u>A. G. Rogovoi</u> , and <u>A. A. Zborovskii</u> .	1709	1365
Electrically Conductive Transparent Coatings for Mica (Exchange of Experience). <u>B. P. Kryzhanovskii</u> , <u>A. V. Kruglova</u> , and <u>A. Ya. Kuznetsov</u>	1710	1366
The Determination of the Surface Roughness of Selenium Intended for Selenium Rectifier Elements (Exchange of Experience). <u>R. A. Solov'ev</u>	1711	1366
MECHANICAL METHODS OF TESTING		
On the Criteria Involved and the Methods Used in the Evaluation of the Tendency of Steels to Brittle Fracture. <u>L. S. Livshits</u> and <u>A. S. Rakhmanov</u>	1712	1368
Plastic Strain during the Fracture of Specimens Used in Determining Brittle Strength. <u>Yu. L. Vol'berg</u>	1715	1371
On the Relationship between the Macroscopic and Microscopic Structures of Brittle Fractures. <u>R. G. Arone</u> , <u>P. I. Sokolovskii</u> , <u>S. V. Bernshtein</u> , and <u>G. E. Arnol'd</u>	1719	1376
On the Dependence of Impact Strength on the Notch Radius and Test Temperature. <u>B. M. Ovsyannikov</u>	1724	1380

CONTENTS (continued)

	PAGE	RUSS. PAGE
The Determination of the Tendency of Beams with Stress Concentrations and Various Dimensions to Brittle Failure. <u>M. Ya. Gal'perin</u>	1727	1384
On the Abnormal Effect of Specimen Thickness on Impact Strength. <u>G. A. Stepanov</u>	1729	1386
A Method for Determining the Tendency to Brittle Fracture of Dispersion-Hardening Austenitic Multi-Component Alloys. <u>B. I. Medovar and A. V. Chekotilo</u>	1732	1388
A Method for Eliminating the Edge Effect in the Optically Active Material Based on ÉD-6 Epoxy Resin (Exchange of Experience). <u>A. S. Efimov and B. A. Morozov</u>	1734	1389
INSTRUMENTS AND LABORATORY TECHNIQUES		
Apparatus for Simultaneously Determining the Elastic and Shear Moduli and the Vibration Damping Over a Wide Temperature Range. <u>M. A. Krishtal and B. M. Drapkin</u>	1735	1391
Apparatus for Investigating Strength Under Repetitive Static Loads. <u>Yu. A. Petrov</u>	1738	1393
High-Temperature Apparatus for Determining the Tensile Strength of Ceramic Oxides. <u>I. S. Mayauskas and A. Ya. Peras</u>	1741	1396
Polyester Maleic Resin as a Material for Models in the Polarization-Optical Method of Stress Analysis. <u>M. S. Zlotnikov</u>	1744	1398
The Production of Optically Sensitive Plates in Steel Molds. <u>V. A. Oleneva</u>	1747	1400
On the Preparation of Composite Metal Molds for Casting Epoxy-Resin Plates. <u>A. D. Shishlov</u>	1749	1401
The Calibration of an Apparatus for Cyclic-Impact Tests. <u>N. A. Karasev and V. I. Morozov</u>	1750	1402
Sensing Element for Volume Grain-Size Analysis. <u>O. A. Myazdrikov</u>	1751	1402
Inductive Two-Frequency Flaw Detector. <u>V. V. Sukhorukov and A. D. Pokrovskii</u>	1754	1404
Acoustic Device for Ultrasonic Wire Inspection. <u>A. N. Butenko and V. S. Gumenyuk</u>	1757	1407
Apparatus for Crucibleless Zone-Refining of High-Melting Metals by Electron Beams in Vacuum. <u>V. Ya. Shlyuko and V. D. Derkach</u>	1759	1408
Automatic Apparatus for Measuring Physicothermal Constants of Ceramic Materials. <u>D. N. Poluboyarinov and I. G. Duderov</u>	1761	1410
Measuring Surface Temperature of Aluminum and Magnesium Alloy Products with Partial-Emission Pyrometers. <u>A. A. Poskachei and M. P. Ural'skii</u>	1764	1412
A Compact High-Power X-Ray Tube for Fluorescent X-Ray Spectral Analysis. <u>G. D. Sobolevskaya, Yu. K. Ioffe, G. M. Nikolaenko, and E. M. Fridman</u>	1766	1414
Apparatus for Determining the Nature and Magnitude of the Wear of Eccentrically Loaded Cylindrical Parts (Exchange of Experience). <u>S. G. Babaev, A. M. Ganiev, and M. A. Babaev</u>	1768	1415
A Chuck for Mechanical Tests of Thin-Walled Tubular Samples (Exchange of Experience). <u>A. I. Kosarev, A. N. Kuznetsov, A. T. Pronin, and A. I. Volkov</u>	1769	1416
A Furnace for Zone-Refining of Semiconductor Materials (Exchange of Experience). <u>L. A. Egorov and Z. S. Medvedeva</u>	1770	1416
A Rotary Electric Furnace with a Kryptol Resistor (Exchange of Experience). <u>Z. A. Livson, N. S. Shchepilov, E. D. Lisovaya, and E. I. Kozlova</u>	1771	1417
A Press for Determining the Volume Electrical Resistance of Powders Under Various Pressures (Exchange of Experience). <u>A. P. Polevodov, V. I. Danilin, B. G. Krasil'nikov, and L. G. Vlasov</u>	1772	1417
A Laboratory System for Purifying an Inert Gas (Exchange of Experience). <u>M. Ya. Arkin, V. S. Mirotvorskii, and A. Ya. Nikiforov</u>	1773	1418
An Atomizer for Microflame Photometric Analysis of Organic Extracts. (Exchange of Experience). <u>G. I. Ksandopulo and E. Ya. Makievskaya</u>	1775	1419
Experience in the Use of Iron-Molybdenum Thermocouples (Exchange of Experience). <u>I. N. Anikin and E. E. Kochetkova</u>	1776	1419
A Cooled Ground-Glass Joint for Vacuum Apparatus (Exchange of Experience). <u>A. P. Rummyantsev</u>	1778	1420

CONTENTS (continued)

	PAGE	RUSS. PAGE
A Glass Stopcock for Batching Gases (Exchange of Experience). <u>A. I. Subbotin</u>	1779	1421
CRITICISM AND BIBLIOGRAPHY		
A. M. Dymov. Commercial Analysis. Reviewed by <u>P. Ya. Yakovlev, F. M. Shemyakin,</u> <u>I. P. Kharlamov, and V. I. Ushakov</u>	1780	1422
INFORMATION		
The Work of the Council of Industrial Laboratories of the Light-Alloy Metallurgical Enterprises. <u>F. L. Lokshin</u>	1782	1423
The Conference of Analytic Chemists of Chelyabinsk. <u>I. A. Korobova and V. L. Zueva</u> . . .	1784	1424

I. P. Alimarin	I. V. Kudryavtsev
A. M. Borzdyka	N. F. Lashko
A. P. Boyarinova	V. V. Nalimov
N. V. Buyanov	M. V. Pridantsev
A. I. Busev	(Editor-in-Chief)
A. M. Dymov	N. P. Shchapov
Ya. B. Fridman	F. M. Shemyakin
V. B. Gnedenko	A. R. Striganov
P. L. Gruzin	P. Ya. Yakovlev
Yu. A. Klyachko	A. A. Zhukhovitskii
I. I. Kornilov	

Industrial Laboratory

*A translation of Zavodskaya Laboratoriya, a publication of the
State Scientific-Technical Committee of the
Council of Ministers of the USSR*

Vol. 31, No. 12

December, 1965

CONTENTS

	PAGE	RUSS. PAGE
METHODS OF CHEMICAL ANALYSIS		
Chronoconductometric Method for Determining Salts of Weak Acids. <u>T. A. Khudyakova</u> and <u>A. P. Kreshkov</u>	1787	1427
Determination of Phosphite in Hypophosphites of Alkali Metals. <u>V. M. Masalovich</u> , <u>E. R. Nikolaeva</u> , and <u>P. K. Agasyan</u>	1791	1431
Spectrophotometric Determination of Niobium in Steels by PAR Reagent. <u>S. V. Elinson</u> , <u>L. L. Pobedina</u> , and <u>A. T. Rezova</u>	1795	1434
Extraction-Photometric Determination of Bismuth in Cast Iron. <u>V. I. Lazareva</u> and <u>A. I. Lazarev</u>	1798	1437
Turbidimetric Titration of Copper with Dimercaptothiopyrone. <u>A. I. Danilevskaya</u> , <u>A. M. Arishkevich</u> , and <u>Yu. I. Usatenko</u>	1800	1439
Accelerated Titrimetric Method for Determining Aluminum. <u>V. E. Sokolovich</u>	1803	1441
Vacancy-Ionization Method for Determining Microvolumes of Gases and Its Use in the Study of Heterogeneous Processes. <u>A. P. Somov</u> and <u>A. A. Zhukhovitskii</u>	1805	1442
Determination of Hydrocarbons Dissolved in Tertiary Butylsulfuric Acid. <u>A. G. Liakumovich</u> , <u>Yu. I. Michurov</u> , and <u>S. D. Feklyaeva</u>	1809	1445
Determination of Trace Amounts of Copper in Silicon Tetrachloride (Exchange of Experience). <u>Yu. M. Martynov</u> , <u>E. A. Kreingol'd</u> , and <u>B. M. Maevskaya</u>	1811	1447
Determination of Dissolved Gases in Liquid Titanium Tetrachloride (Exchange of Experience). <u>V. N. Zavadovskaya</u> and <u>V. M. Mal'shin</u>	1812	1447
Volumetric Iodometric Method of Determining Inorganic Sulfide Sulfur in Sedimentary Rocks (Exchange of Experience). <u>G. I. Timofeev</u> and <u>O. M. Zinger</u>	1813	1448
Determination of Dicarboxylic Acids by Paper Chromatography (Exchange of Experience). <u>R. A. Kiseleva</u> and <u>M. S. Dudkin</u>	1814	1443
Detection of Barbituric Acid and Its Derivatives by Fluorescence (Exchange of Experience). <u>F. M. Shemyakin</u> and <u>A. I. Berdnikov</u>	1815	1449
METHODS OF SPECTRAL ANALYSIS		
The Use of ÉPR in Determining the Nitrogen Content of α -SiC. <u>M. I. Iglitsyn</u> , <u>I. I. Ivanova</u> , <u>G. E. Konstantinova</u> , <u>M. G. Kosaganova</u> , and <u>N. M. Pavlov</u>	1816	1450
Removing Degeneration in X-Ray Spectral Analysis by Taking into Account the Intensity of Scattered Radiation. <u>M. A. Blokhin</u> , <u>Sh. I. Duimakaev</u> , and <u>V. I. Karmanov</u>	1818	1452
Dispersionless X-Ray Spectral Analysis of Mixtures of Elements with Similar Atomic Numbers. <u>Yu. P. Betin</u> , <u>M. I. Bursukova</u> , and <u>L. S. Shelkov</u>	1821	1454
On the Application of X-Ray Spectral Analysis in Electron Microscopy. <u>B. N. Vasichev</u>	1826	1458
Calculation of Activity of Gamma-Emitters Used in X-Ray Absorption Analysis. <u>I. N. Plaksin</u> and <u>F. V. Nikitin</u>	1829	1461
Analysis of Alloy ATsK-12 with the FÉS-1 (Exchange of Experience). <u>Yu. N. Novikova</u>	1835	1466

CONTENTS (continued)

	PAGE	RUSS. PAGE
PHYSICAL METHODS OF INVESTIGATION		
Methods of Metallographic Study of Cast and Deformed Tungsten (Survey).		
<u>Yu. D. Chistyakov and A. I. Pekarev</u>	1836	1467
Determining Heterogenization of Alloys by the Relative Difference in Microhardness.		
<u>V. M. Vozdvizhenskii, L. I. Lifanova, and S. S. Voevodina</u>	1843	1473
On the Quenching of Metal Powders for X-Ray Structural Analysis. <u>Ya. P. Selisskii</u>	1846	1476
Standard Networks of Extrabase Axes of Projection for a Hexagonal Close-Packed Lattice.		
<u>I. E. Kontorovich and E. V. Lainer</u>	1851	1480
Radiographic Study of the Mosaic Structure of Single Crystals. <u>G. V. Anan'eva</u>		
<u>and Z. F. Smirnova</u>	1854	1483
Measuring the Resistivity of Semiconductors Having a Periodic Inhomogeneity by Means		
of the Four-Probe Method. <u>A. A. Meier</u>	1857	1485
MECHANICAL METHODS OF TESTING		
Fatigue Testing with Variable Loads at High Temperatures. <u>V. P. Kogaev and V. V. Kirin</u>	1863	1490
The Comparison of the Low-Cycle Fatigue Curves Obtained in Testing with Gradual and Rapid		
Load Application. <u>A. P. Gusenkov, V. V. Larionov, and R. M. Shneiderovich</u>	1867	1494
On the Effect of Specimen Length on the Cyclic Strength of Steel. <u>R. G. Pogoretskii</u>		
<u>and G. V. Karpenko</u>	1871	1497
The Dependence of the Fatigue Life of Steels on Plastic Strain During Cycling Under Uniform		
and Nonuniform Stresses. <u>V. T. Troshchenko and V. I. Bugai</u>	1875	1501
The Impact Strength of Steel Under Nonuniform Stress Amplitudes. <u>Yu. G. Bystrov</u>		
<u>and G. V. Toporov</u>	1878	1504
On a Method for the Fatigue Testing of Cast Machine Parts. <u>A. R. Vishnevskii,</u>		
<u>L. V. Mamatkazin, and I. F. Pastukhov</u>	1881	1506
On the Effect of Heating in Limited-Fatigue-Life Tests with Overstress. <u>L. N. Molchanov</u>		
<u>and N. I. Kharitonov</u>	1884	1508
INSTRUMENTS AND LABORATORY TECHNIQUES		
Application of Computing Techniques to Optical Spectrum Analysis (Review). <u>I. A. Maiorov</u>	1888	1512
Electrodynamic Apparatus for Investigation by the Mössbauer-Effect Method. <u>L. A. Korytko,</u>		
<u>I. P. Suzdalev, and V. A. Trukhtanov</u>	1896	1519
High-Vacuum Apparatus for Studying Sublimation by the Continuous-Weighing Method.		
<u>M. B. Bronfin and V. A. Marichev</u>	1900	1522
A Refractometric Detector-Analyzer of Flue Gases for CO ₂ . <u>B. P. Kozyrev</u>		
<u>and V. A. Korotchenko</u>	1902	1524
A Gas Chromatograph with Automatic Sampling from a Stream. <u>M. I. Yanovskii,</u>		
<u>G. A. Gaziev, V. P. Nikiforov, V. G. Makarenko, R. A. Zimin, P. I. Marinin,</u>		
<u>and Yu. A. Frank</u>	1904	1526
Apparatus for Testing Frictional Materials in a Vacuum. <u>V. L. Memelov, L. A. Khasin,</u>		
<u>and É. I. Khasin</u>	1907	1528
Automatic Loading Machines for Fatigue Tests of Natural Constructions. <u>V. I. Litvak</u>	1910	1530
A Device for Accurate Measurement of Variable Loads in Fatigue Tests. <u>B. I. Aleksandrov</u>		
<u>and G. I. Yankov</u>	1914	1533
Mounting Samples in the Wedge-Shaped Holders of Fatigue Machines. <u>A. K. Kazantsev</u>	1916	1535
A Vibrometer for Measuring the Dynamic Characteristics of Elastic Materials (Exchange		
of Experience). <u>G. S. Rosin and A. N. Kleshchev</u>	1917	1536
Use of the SVD-120A Lamp for Calibration of Infrared Spectrometers (Exchange of Experience).		
<u>R. B. Tagirov</u>	1918	1536
Apparatus for Spectral Analysis of Powders and Solutions (Exchange of Experience).		
<u>É. Yu. Davletshin and T. K. Aidarov</u>	1919	1537

CONTENTS (continued)

	PAGE	RUSS. PAGE
ORGANIZATION OF LABORATORY WORKS AND EXCHANGE OF OPINION		
On the Quality of Highly Refractory Boats for Determining Sulfur and Carbon in Metals. <u>G. N. Duderov.</u>	1920	1538
INFORMATION		
A General-Purpose Testing Machine with a Device for Small-Cycle Repeated Variable Loading. <u>V. V. Tsybalyuk and A. S. Shaginyan</u>	1922	1539
DI-8 Laboratory Balance Hygrometers. <u>E. A. Gershkovich</u>	1924	1541
On a Rational Assortment of Organic Reagents for Inorganic Ions. <u>V. G. Brudz'</u>	1926	1542
Author Index, Volume 31, 1965	1929	
Tables of Contents, Volume 31, 1965.	1938	

NOTE

The article appearing on pages 1425-1426 of the original has not been translated because it does not contain material of a technical nature.

The Russian press date (podpisano k pechati) of this issue was 11/12/1965. Publication therefore did not occur prior to this date, but must be assumed to have taken place reasonably soon thereafter.

Publisher

INDUSTRIAL LABORATORY

Volume 31, 1965

(A translation of Zavodskaya Laboratoriya)

A

Abakumkin, A. G. - 928
 Ablova, M. S. - 1257
 Adler, Yu. P. - 1129
 Adrianova, N. I. - 805
 Afanas'ev, M. K. - 101
 Agafonov, N. I. - 1090
 Agasyan, P. K. - 1791
 Ageev, P. Ya. - 560
 Aidarov, T. K. - 1919
 Airapetyants, É. G. - 500
 Akimova, K. M. - 1701
 Akinina, Z. S. - 1321
 Akhmetshin, A. G. - 978
 Aksenenko, E. G. - 1488
 Aksenenko, V. M. - 1488
 Aleksandrov, B. I. - 1914
 Alekseev, L. A. - 606
 Alekseev, N. V. - 160
 Alekseev, V. I. - 1696
 Alferov, V. F. - 1376
 Alkhimenkova, G. I. - 62
 Alpatov, E. N. - 731
 Alyab'ev, V. A. - 1354
 Anan'eva, G. V. - 1854
 Andreev, L. V. - 675
 Andreev, O. B. - 633, 1608
 Andrianov, Yu. E. - 438
 Andronov, V. N. - 1367
 Anikeeva, M. I. - 628
 Anikin, I. N. - 1776
 Anishkin, V. P. - 143
 Anisimova, Z. I. - 627
 Antipin, L. N. - 1120
 Antrapsev, F. I. - 1107
 Anuchkin, M. P. - 742
 Archakov, Yu. I. - 1087
 Arishkevich, A. M. - 978, 1800
 Arkin, M. Ya. - 1773
 Arnol'd, G. E. - 1719
 Aron, P. M. - 680
 Arone, R. G. - 1719
 Arone, R. G. - 119, 732
 Artamonov, V. G. - 312

Ashbel, F. B. - 1316
 Ashkenazi, E. K. - 1559
 Astaf'eva, V. V. - 1478
 Avdeenko, V. P. - 299
 Averbukh, M. A. - 310
 Ayerkin, A. A. - 1257

B

Babaev, M. A. - 1768
 Babaev, S. G. - 1768
 Babkin, A. G. - 1605
 Babina, Yu. K. - 819
 Babko, A. K. - 189, 1145
 Baburina, V. V. - 1178
 Baeva, O. M. - 149
 Baguzin, V. I. - 115
 Balakovskii, O. B. - 1095
 Balakhontsev, Ya. I. - 1416
 Balandina, V. A. - 350
 Balashov, B. G. - 1699
 Balashova, N. N. - 462
 Baldin, V. A. - 732
 Balenko, É. P. - 849
 Barabanshchikova, N. F. - 360
 Baranova, G. K. - 798, 983
 Baranova, V. G. - 215, 841
 Baranskii, P. I. - 1510
 Barmotina, Z. G. - 1001
 Barskii, L. A. - 1547
 Barskii, V. D. - 410
 Basargin, N. N. - 661
 Bashchenko, A. P. - 924
 Basin, V. E. - 1063
 Basko, P. T. - 450
 Batovskii, V. N. - 728
 Baushis, I. P. - 759
 Bazalitskaya, V. S. - 1171
 Bazanova, L. A. - 853
 Bazhanova, L. A. - 1640
 Bazilevskii, A. R. - 1708
 Bazov, V. P. - 1204
 Béchko, P. M. - 691
 Beda, P. I. - 1581
 Beider, T. B. - 1657
 Belen'kii, B. G. - 1660
 Belinskii, B. A. - 569
 Belkin, I. M. - 225
 Belkin, M. Ya. - 590
 Belkina, G. L. - 517, 520
 Belov, V. T. - 90, 1015
 Belyakov, Yu. I. - 1374
 Belyavskaya, V. B. - 1464
 Belynskii, V. A. - 935
 Bendryshev, O. L. - 72
 Ber, L. B. - 1513
 Berdnikov, A. I. - 1815
 Berezina, K. G. - 807
 Berezkin, V. G. - 343
 Berger, L. I. - 875
 Berkova, A. V. - 724, 1358
 Bernshtein, S. V. - 1719
 Bessonov, A. F. - 763
 Betin, Yu. P. - 1821
 Bikbulatova, L. A. - 681
 Biryukova, E. Ya. - 1628
 Blank, A. B. - 1623
 Blokhin, M. A. - 517, 1328, 1818
 Bobrov, B. S. - 1583
 Bobyl', V. G. - 1354
 Bobyrenko, Yu. Ya. - 294
 Bochagov, Yu. N. - 397
 Bochkayev, F. I. - 730
 Bodyu, V. I. - 153, 969, 1476, 1486
 Bogdanov, V. G. - 618
 Bogdanov, V. P. - 721
 Bogdyl', P. T. - 1388
 Bogoslovskii, Yu. N. - 1703
 Bogovina, V. I. - 191, 338, 358
 Bogoyavlenskii, A. F. - 90, 1015
 Boguslavskaya, I. Ya. - 278
 Boiko, Yu. P. - 182
 Boitsov, V. I. - 1273
 Bokova, V. I. - 1352
 Bokshtein, S. Z. - 629, 915
 Bondarenko, I. V. - 1116
 Bordovskaya, N. V. - 880
 Borisov, B. I. - 1360
 Borisov, P. P. - 742

Borisov, V. T. - 278, 735
 Borkovskii, Yu. Z. - 720
 Borovikov, A. S. - 391
 Borzov, V. P. - 636
 Boyarskaya, U. S. - 1246
 Bozhevol'nov, E. A. - 620, 974
 Brainina, Kh. Z. - 24, 1464
 Brander, A. I. - 310
 Braun, É. D. - 928
 Breskis, A. I. - 759
 Brodskii, M. S. - 825
 Brodskii, V. Z. - 1037
 Bronfin, M. B. - 1900
 Brovkin, L. A. - 1491
 Brudz', V. G. - 1610, 1926
 Budagova, E. M. - 639
 Bugai, V. I. - 1875
 Buglin, V. E. - 761
 Bukl, Yu. M. - 130
 Bulanova, Z. L. - 510
 Bulina, I. G. - 1111
 Buravlev, Yu. M. - 1676
 Burmakin, N. M. - 209
 Bursukova, M. I. - 1821
 Burtsev, V. T. - 93, 1692
 Butakov, D. K. - 173
 Butenko, A. N. - 1757
 Butko, N. I. - 394
 Buvalits, A. I. - 299
 Buzlanova, M. - 637
 Buzlanova, M. M. - 1179
 Bykova, A. P. - 336
 Bykova, L. N. - 504
 Bykovets, N. P. - 865
 Bystrikov, A. S. - 1434
 Bystrov, Yu. G. - 1878
 Bystrova, K. A. - 795

C

Chabovskii, L. P. - 1344
 Chalkov, N. Ya. - 1351
 Chakhlov, V. L. - 283
 Chalaya, Z. I. - 189
 Chekin, B. V. - 1367
 Chekotilo, A. V. - 1732
 Chasovskikh, L. S. - 833
 Chelyabinsk, O. G. - 958
 Chepelevetskii, M. L. - 311
 Chepik, N. V. - 1260
 Cherkasskii, A. A. - 991
 Chernenko, L. D. - 1069
 Chernyaeva, V. A. - 538
 Chernyavskaya, S. G. - 1372
 Chernyi, V. A. - 1163

Chernykh, O. G. - 1418
 Chernyshev, V. M. - 248
 Chernysheva, A. N. - 200
 Chertousov, V. A. - 1595
 Chichinadze, A. V. - 928
 Chichkanov, A. I. - 1441
 Chikryzova, E. G. - 21
 Chistyakov, Yu. D. - 1594, 1836
 Chistyakova, E. M. - 1323
 Chumakov, V. D. - 1656
 Chuprina, A. F. - 909
 Chursina, N. Ya. - 553

D

Danilevskaya, A. I. - 1800
 Danilevskaya, V. V. - 205
 Danilin, V. I. - 1772
 Danilov, N. S. - 1413
 Davletshin, É. Yu. - 1919
 Dedkov, Yu. M. - 185
 Degtyarenko, L. I. - 1634
 Del', G. D. - 1253
 Demidenko, S. G. - 941
 Demkin, N. B. - 907
 Dergachev, V. Ya. - 981
 Derkach, V. D. - 1759
 Deryabina, V. I. - 752
 Ditsman, S. A. - 618
 Dobkina, B. M. - 800, 802
 Dolgoplov, N. N. - 1387
 Dologrev, A. V. - 981
 Dolzhenkov, F. E. - 241
 Dontsova, V. A. - 360
 Dorosheva, N. V. - 72
 Drapkin, B. M. - 1735
 Drozd, M. S. - 778
 Drozdov, V. A. - 193
 Drozdovskii, B. A. - 414
 Dryuchenko, A. K. - 77
 Dubinin, M. K. - 772
 Dubov, S. S. - 694
 Duderov, G. N. - 1920
 Duderov, I. G. - 1761
 Dudkin, M. S. - 1814
 Duimakaev, Sh. I. - 1328, 1818
 Dunaevskii, V. I. - 590
 D'yakov, L. A. - 391
 Dyl'kov, M. S. - 926
 Dzhamaletdinova, M. K. - 1171

E

Efimov, A. S. - 1734
 Efimov, I. A. - 462
 Eganyan, I. L. - 443
 Egiazarov, Yu. G. - 1119

Egorov, L. A. - 1770
 Egorova, Yu. D. - 1699
 Egurnov, V. G. - 761
 Elinson, S. V. - 1443, 1795
 Emelin, E. A. - 514
 Emkov, A. A. - 466
 Éntin, L. Kh. - 1282
 Epimakhov, V. I. - 1471
 Erdenbaeva, M. I. - 668
 Erkovich, G. E. - 469
 Ermakov, V. I. - 1107
 Ermolaev, A. A. - 309
 Ermolova, M. I. - 712
 Ershov, B. B. - 1104
 Ershov, É. B. - 101
 Ershov, R. E. - 1008
 Ershov, Yu. A. - 1593
 Erzh, A. P. - 348
 Erzh, B. V. - 1596
 Esikov, A. D. - 1590
 Éstrin, E. I. - 924
 Evdokimov, V. P. - 159, 1597
 Evseev, P. P. - 1386
 Evstifeev, M. M. - 187
 Evstratova, G. A. - 336

F

Faerman, B. S. - 782
 Fainberg, L. I. - 520
 Fateev, V. A. - 1266
 Fedorova, L. M. - 1684
 Fedoseeva, A. G. - 1658
 Fedosenko, Yu. K. - 555
 Fedosov, N. M. - 1432
 Fedotov, A. V. - 1279
 Fedotova, V. P. - 841
 Feigin, E. A. - 1052
 Feklyaeva, S. D. - 1809
 Feoktistova, N. D. - 520
 Fillipov, M. P. - 356
 Filipp, G. I. - 93
 Filippov, L. P. - 615, 1421
 Filippov, M. P. - 833
 Filippov, Yu. S. - 996
 Filippova, Zh. A. - 1353
 Fishman, I. M. - 911
 Fokin, M. M. - 558
 Fomenko, K. A. - 873
 Frank, Yu. A. - 1904
 Frantsuzova, T. A. - 1325
 Frantz, L. - 601
 Fratkin, Z. G. - 1353
 Frenkel', R. Sh. - 132
 Frid, Ya. L. - 1031
 Fridman, B. P. - 458

Fridman, E. M. - 1766
 Fridman, Ya. B. - 1, 573
 Frolova, G. S. - 340
 Frumina, N. S. - 976
 Fuks, M. Ya. - 1217
 Funke, V. F. - 795

G

Gal'dikene, O. K. - 1489
 Gal'per, R. R. - 901
 Gal'perin, M. Ya. - 1727
 Gal'pern, G. M. - 502
 Galushko, N. P. - 1277
 Galuzo, L. V. - 346
 Ganf, A. I. - 1424
 Ganich, P. M. - 1525
 Ganiev, A. M. - 1768
 Gankevich, L. T. - 1031
 Ganzburg, G. M. - 492
 Garber, É. A. - 1550
 Gavar, R. A. - 42
 Gavelya, V. V. - 1516
 Gavrik, V. Ya. - 959
 Gaziev, G. A. - 1904
 Gel'd, P. V. - 1022
 Gel'fman, A. Ya. - 865
 Gel'perin, E. I. - 935
 Gel'perin, N. I. - 772
 Gerasimov, V. I. - 610, 1584
 German, I. M. - 1599
 German, V. S. - 1439
 Gerner, M. M. - 728
 Gershenovich, V. Z. - 769
 Gershkovich, B. M. - 625, 1103, 1260
 Gershkovich, E. A. - 1924
 Giller, S. A. - 42
 Ginzburg, V. L. - 302
 Gladkikh, L. I. - 1217
 Gladshtein, L. I. - 109
 Glavin, G. G. - 169, 1487
 Glebovskii, V. G. - 1692
 Glikman, L. A. - 752, 1505
 Glukhova, Yu. V. - 1652
 Goizman, M. S. - 1316
 Gol'danskii, V. I. - 67
 Gol'din, M. L. - 241
 Gol'dshmidt, M. G. - 1253
 Golovatenko, R. T. - 1649
 Golubev, A. A. - 1092
 Golubev, T. I. - 36
 Golubovskii, B. S. - 1087
 Golubtsova, R. B. - 489, 657
 Golyseva, G. P. - 1531
 Gopienko, V. G. - 571

Gorbenko, F. P. - 1634
 Gorbunov, B. I. - 283
 Gorelov, P. N. - 1709
 Gorevaya, A. E. - 1685
 Gorina, G. V. - 1352
 Gorodetskii, Yu. S. - 1598
 Gorovoi, M. A. - 1120
 Gorskii, V. G. - 1037
 Goryunova, N. N. - 976
 Goryushina, V. G. - 1628
 Grabko, D. Z. - 1246
 Granovskii, E. I. - 1197
 Grechnyi, Ya. V. - 1222
 Grib, V. V. - 265
 Gribora, E. A. - 506
 Gribova, E. A. - 986
 Grigor'ev, G. A. - 715
 Grigoryan, V. A. - 1005
 Grigor'yan, V. P. - 1661
 Grishina, S. P. - 724
 Gritsan, D. N. - 1277
 Gritsenko, M. N. - 809
 Gromova, É. N. - 1488
 Gruzlov, A. P. - 259
 Gruzin, P. L. - 606
 Gryaznov, B. A. - 1069
 Gubel'bank, S. M. - 1000
 Gudasheva, T. I. - 1134
 Guglya, V. G. - 715
 Gulyaev, A. P. - 103, 362
 Gulyaev, V. N. - 87
 Gumenyuk, V. S. - 1757
 Gun'ko, E. I. - 807
 Gur'ev, A. V. - 1395
 Gurevich, Ya. B. - 924
 Gurchik, D. V. - 350
 Gusenkov, A. P. - 885, 1867
 Gutermakher, T. M. - 553

I

Iglitsyn, M. I. - 1355, 1816
 Ignat'ev, Yu. S. - 1484
 Ignatova, M. V. - 299
 Il'ichev, V. I. - 1087
 Il'kova, S. B. - 1000
 Inyutina, Z. N. - 1531
 Ioffe, A. I. - 1516
 Ioffe, E. Sh. - 1166
 Ioffe, Yu. K. - 1766
 Isaev, N. I. - 1518
 Isaev, V. V. - 1035
 Isakhanov, G. V. - 1562
 Ishutkin, S. I. - 452
 Ivanov, A. V. - 1355
 Ivanov, F. M. - 1701

Ivanov, L. I. - 858
 Ivanov, N. P. - 697
 Ivanova, I. I. - 1816
 Ivanova, N. K. - 1685
 Ivanova, N. T. - 1326
 Ivanova, N. V. - 659
 Ivanova, R. V. - 1487
 Ivanovskii, F. P. - 360
 Ivanyuk, A. G. - 350
 Iveronova, V. I. - 1687
 Ivoilov, A. S. - 1225
 Izakson, V. Yu. - 1075
 Izhak, I. G. - 509
 Izmanova, T. A. - 1323

K

Kachanova, E. A. - 500
 Kagan, A. S. - 707, 1032
 Kaganovskii, I. P. - 1526, 1529
 Kakul', B. I. - 873
 Kalina, Yu. P. - 1178
 Kalinovich, D. F. - 1026
 Kalmykov, V. A. - 560
 Kaluzhskii, A. A. - 950
 Kamaletdinov, Kh. S. - 291
 Kamenev, B. S. - 922
 Kamenev, A. I. - 1473
 Kaminskii, Ya. A. - 1090
 Kamkin, N. I. - 1437
 Kan, K. N. - 1579, 1583
 Kaplan, B. Ya. - 39, 811
 Kaplan, L. K. - 360
 Kaplun, A. B. - 877
 Kapustin, I. A. - 567
 Karabasov, Yu. S. - 460
 Karagioz, O. V. - 1355
 Karalis, V. N. - 939
 Karasev, N. A. - 1410, 1750
 Karasik, A. S. - 922
 Karev, V. N. - 534
 Kargina, N. I. - 1637
 Karlikov, D. N. - 1376
 Karmanov, V. I. - 1818
 Karmazin, A. I. - 424
 Karpenko, G. V. - 1871
 Karpov, Yu. A. - 169, 1487
 Karpova, N. G. - 119
 Karyakin, A. V. - 391
 Karymova, A. I. - 1301
 Kasatkina, L. A. - 41
 Kas'yanova, L. V. - 299
 Kas'yanova, T. S. - 1033
 Katal'nikov, S. G. - 567
 Kats, M. Sh. - 1173
 Kazakov, P. P. - 1382

- Kazakova, V. M. - 361
 Kazantsev, A. K. - 1916
 Kazaryan, N. A. - 504
 Kazimirchik, Yu. A. - 1018
 Kazurov, B. K. - 1496
 Khachaturov, A. S. - 1182
 Khanina, N. M. - 1173
 Kharitonov, L. G. - 1397
 Kharitonov, N. I. - 273, 586, 1884
 Kharitonovich, K. F. - 311
 Kharlamov, I. P. - 1780
 Khasin, É. I. - 1907
 Khasin, L. A. - 1907
 Khaustova, L. A. - 1534
 Kherodinashvili, Z. Sh. - 915
 Khesina, A. Ya. - 1682
 Khmel'nitskaya, E. Yu. - 506, 515, 986
 Khotskii, E. A. - 1029
 Khrulev, V. M. - 1569
 Khshivo, L. N. - 147
 Khudyakova, T. A. - 1787
 Khurgin, M. É. - 1520
 Khusid, S. E. - 715
 Kifer, I. I. - 1136, 1364
 Kilina, S. I. - 853
 Kirichenko, G. S. - 1531
 Kirilov, A. I. - 62
 Kirin, I. S. - 1490
 Kirin, V. V. - 1863
 Kirsanova, M. A. - 1251
 Kiryushkin, V. V. - 309
 Kiseleva, R. A. - 1814
 Kiselevskii, V. N. - 909
 Kislik, V. A. - 424
 Kleiman, V. Ya. - 497
 Kleshchev, A. N. - 1917
 Klimchuk, Yu. F. - 431
 Klugman, I. Yu. - 1121
 Klyachko, Yu. A. - 798, 983
 Klygin, A. E. - 1443
 Klyuchnikova, E. F. - 571
 Klyushkin, I. E. - 1503
 Knyazeva, R. N. - 497
 Kobrin, M. M. - 608
 Kobylina, N. I. - 821
 Kocherov, L. E. - 1104
 Kochetkova, E. A. - 1109
 Kochetkova, E. E. - 1776
 Kochevanov, V. A. - 244
 Kocho, V. S. - 871
 Kofman, A. P. - 1400
 Kogaev, V. P. - 1092, 1863
 Kogan, L. M. - 209
 Kogan, Ya. A. - 1052
 Koigushskii, N. N. - 1120
 Kokoshkin, V. A. - 562
 Kokoulin, V. G. - 353
 Kolchina, N. A. - 193
 Kolchinskaya, L. M. - 400
 Kolenko, E. A. - 1426
 Kolesnikov, N. P. - 1402
 Kolesnikova, L. P. - 1662
 Kolesov, S. N. - 1436
 Kolganov, V. A. - 1706
 Kolgatin, N. N. - 752
 Kolomiichenko, G. P. - 464
 Kolomitskii, F. M. - 1120
 Komlev, L. N. - 1207
 Kondrashina, A. I. - 689
 Kondrashov, D. L. - 1437
 Kondratenko, M. I. - 456
 Kondrat'ev, P. A. - 1680
 Kondrat'eva, L. I. - 685
 Kononenko, V. A. - 767
 Konopleva, G. P. - 939
 Konovalova, B. E. - 1004
 Konstantinov, A. A. - 288
 Konstantinova, G. E. - 1816
 Kontorovich, I. E. - 1851
 Konyukh, I. V. - 145
 Korabel'nikov, Yu. G. - 1556, 1577
 Korchemkina, A. S. - 173
 Kordon, I. V. - 1168
 Korneeko, V. P. - 1684
 Korobova, I. A. - 1784
 Korotchenko, V. A. - 1902
 Korotkova, O. I. - 359
 Korovin, Yu. I. - 46
 Korshikova, N. G. - 1370
 Kortnev, A. V. - 1392
 Korytko, L. A. - 1896
 Kosaganova, M. G. - 1816
 Kosarev, A. I. - 1272, 1769
 Kosarev, A. I. - 1769
 Kosenko, N. N. - 346
 Kosnyanu, K. K. - 912
 Kossyi, G. G. - 718
 Kostin, I. M. - 715
 Kosyrev, Yu. M. - 627
 Kosyreva, V. G. - 1658
 Kotik, F. I. - 829
 Kotova, L. I. - 1222
 Koval', A. D. - 765
 Kovalenko, P. N. - 187
 Kovalev, G. N. - 241
 Kovalevskii, N. S. - 606
 Kovenskii, I. I. - 1026
 Kozhevnikova, L. P. - 35
 Kozlov, S. T. - 1384
 Kozlova, E. I. - 1771
 Kozlova, I. V. - 969, 1204, 1486
 Kozyrev, B. P. - 1902
 Kozyreva, N. A. - 697
 Kozyrskii, G. Ya. - 767
 Kragel'skii, I. V. - 265
 Krashenninnikov, S. K. - 225
 Krasil'nikov, B. G. - 1172
 Krasil'nikov, L. A. - 1595
 Krasil'shchik, V. Z. - 305
 Krasovskii, A. Ya. - 126
 Kravchenko, A. F. - 151
 Kravchenko, A. P. - 1686
 Kravchenko-Berezhnoi, R. A. - 530; 1605
 Kreingol'd, E. A. - 1811
 Kreingol'd, S. U. - 620, 974
 Kreshkov, A. P. - 27, 193, 333, 1787
 Krishtal, M. A. - 1735
 Krivonosov, Yu. I. - 241
 Kruglova, A. V. - 1710
 Kryukov, Yu. B. - 1662
 Kryzhanovskii, B. P. - 1710
 Ksandopulo, G. I. - 1775
 Kudashevich, S. R. - 583
 Kudelin, V. N. - 1325
 Kudryashov, V. I. - 1703
 Kudryavtsev, I. V. - 1064
 Kudryavtsev, V. A. - 1572
 Kufarev, G. L. - 1253
 Kukhar', Yu. P. - 748
 Kukhtevich, G. M. - 77
 Kukol', V. V. - 868
 Kuksa, L. V. - 1395
 Kul'bakh, A. A. - 446
 Kulik, O. P. - 180
 Kunin, L. L. - 1370
 Kupalova, I. K. - 362
 Kupershtok, K. I. - 1181
 Kupriyanova, T. A. - 843
 Kuptsova, K. M. - 1316
 Kurochkina, N. A. - 1179
 Kuroedov, V. A. - 520
 Kuteinikov, A. F. - 1656
 Kuvshinov, S. - 787
 Kuzin, I. A. - 1597
 Kuz'menkov, L. N. - 456, 939
 Kuznetsov, A. N. - 1769
 Kuznetsov, A. V. - 1275
 Kuznetsov, A. Ya. - 1710
 Kuznetsov, R. A. - 244
 Kuznetsov, V. I. - 661
 Kuznetsov, V. V. - 1652
 Kuznetsov, Yu. N. - 219, 1344
 Kuznetsova, A. V. - 54

Kuzub, V. S. - 718
Kvichko, L. A. - 1001

L

Lainer, E. V. - 1851
Lambiev, D. - 771
Landa, V. A. - 362, 1229
Landa, V. A. - 1229
Lankov, A. A. - 907
Lapovok, V. I. - 520
Larionov, L. V. - 558
Larionov, V. A. - 1101
Larionov, V. V. - 885, 1388, 1867
Larkin, A. I. - 1267
Latyshev, E. V. - 1107
Latov, V. K. - 672
Lavrent'ev, Yu. G. - 847
Lavrova, E. A. - 54
Lazarev, A. I. - 1318, 1602, 1798
Lazareva, V. I. - 1318, 1798
L'dokova, G. M. - 1171
Lebed', N. B. - 197
Lebedev, D. V. - 438
Lebedev, O. P. - 1325
Leipunskaya, D. I. - 854
Leksashev, Yu. F. - 937
Lepikhova, E. E. - 1526, 1529
Lesnichii, Yu. N. - 1575
Lev, I. E. - 1380
Levinzon, D. I. - 1355, 1510
Liakumovich, A. G. - 1809
Lifanova, L. I. - 1843
Lifshits, E. F. - 65
Lifshits, E. V. - 223, 849
Likhachev, Yu. I. - 454
Likhterov, I. M. - 520
Limina, L. P. - 141
Lipchin, N. N. - 1281
Lipskaya, V. I. - 201
Lisenkova, N. V. - 1473
Lisovaya, E. D. - 1771
Litvak, V. I. - 1910
Litvinova, T. I. - 1372
Livanov, V. V. - 1276
Liven, A. V. - 1596
Livshits, L. S. - 1712
Livson, Z. A. - 1771
Lizunov, G. I. - 460
Logashev, O. P. - 633
Lokshin, B. E. - 1550
Lokshin, F. L. - 1782
Lomaev, G. Z. - 1406
Lomberg, B. C. - 1264
Lominadze, N. N. - 1047
Lomonosov, S. A. - 511

Losev, N. F. - 201, 1334
Lozinskii, M. G. - 296
Lugovaya, I. P. - 941
Luppova, A. A. - 829
Lur'e, Yu. Yu. - 512, 513, 994
Lutsker, I. Sh. - 465
Luzina, L. N. - 1003, 1180
L'vov, G. R. - 1015
Lyalikov, Yu. S. - 969, 1476, 1486
Lyande, Yu. V. - 991
Lyashenko, B. A. - 1562
Lyubimov, A. N. - 1269
Lyutaya, M. D. - 1321

M

Madan, L. G. - 1476
Maevskaya, B. M. - 1811
Maiorov, I. A. - 1888
Mairanovskii, V. G. - 1482
Maizil', É. E. - 522
Makalets, B. I. - 1531
Makarenko, V. G. - 1904
Makarevich, A. I. - 918
Makarevich, L. A. - 502
Makarov, E. F. - 67
Makarov, G. N. - 1703
Makarova, G. A. - 689
Makarova, N. P. - 694
Makarychev, B. A. - 446
Makashev, Yu. A. - 1490
Makasheva, I. E. - 1490
Makievskaya, E. Ya. - 1775
Maklakov, V. N. - 1709
Makov, V. M. - 1334
Malakhaev, E. M. - 1269
Mal'kov, E. M. - 1658
Mal'shin, V. M. - 1812
Mal'tsev, V. F. - 51, 191, 338, 358
Mal'tseva, G. V. - 492
Malyshev, A. I. - 825
Malyutina, T. M. - 800, 802, 1308
Mamatkazin, L. V. - 1881
Mamonov, Yu. M. - 517
Margulis, E. V. - 1113
Marichev, V. A. - 1900
Marinets, T. K. - 623
Marinin, P. I. - 1904
Markochev, V. M. - 414
Markov, V. K. - 1443
Markova, E. V. - 1043
Marshakov, I. K. - 721
Martynov, Yu. M. - 1811
Martynyuk, G. F. - 401
Masalovich, V. M. - 1791
Mashinskaya, S. Ya. - 21

Maslova, I. N. - 1590
Maslova, P. I. - 814
Mastyayev, V. Ya. - 310
Matrosova, T. V. - 38, 1176
Mateev, E. L. - 1269
Matveeva, N. N. - 547
Mayauskas, I. S. - 1741
Mazan, L. K. - 51
Medovar, B. I. - 1732
Medvedev, M. Yu. - 1605
Medvedeva, G. A. - 173
Medvedeva, Z. S. - 1770
Meier, A. A. - 1355, 1857
Mel'nikov, L. M. - 173
Mel'nikov, S. I. - 205
Memelov, V. L. - 1907
Merenkov, B. M. - 1177
Merkulova, V. Z. - 831
Mermel'shtein, G. R. - 520
Michurov, Yu. I. - 1809
Mikhailov, A. M. - 1430
Mikhailova, A. F. - 746
Mikhailovskii, I. Ya. - 466
Mikhal'chenko, A. S. - 599
Mikhel'son, M. L. - 1376
Miklayev, P. G. - 573
Mileiko, S. T. - 433
Milenina, D. P. - 851
Mil'ko, V. I. - 1120
Miloslavskii, K. V. - 159
Mil'vidskii, M. G. - 724, 1358
Minaev, Yu. A. - 1005
Minakov, V. A. - 1036
Minasyan, K. V. - 1655
Mirkin, V. A. - 477
Mirotvorskii, V. S. - 1773
Mirskii, L. M. - 915
Mishchenko, V. S. - 405
Mityaeva, A. A. - 40
Mizetskaya, I. B. - 180
Moiseev, I. V. - 1443
Mokeeva, R. N. - 1306
Mokhov, G. D. - 468
Molchanov, E. I. - 1082
Molchanov, L. N. - 273, 586, 1884
Molin, Yu. N. - 1208
Monakhenko, D. V. - 1567
Moroz, V. G. - 1123
Morozov, B. A. - 1734
Morozov, V. I. - 1410, 1750
Morozova, V. V. - 427
Moshkin, L. N. - 151
Moshkovich, G. N. - 1353
Mosova, L. N. - 223
Mukashev, F. A. - 999

Mukhin, N. L. - 777
 Mulyarskii, Ya. V. - 155
 Muradov, V. G. - 1022
 Muranov, V. A. - 628, 776
 Murdasov, A. V. - 147
 Mustafin, I. S. - 976
 Myadzelets, E. N. - 748
 Myagkov, P. I. - 517
 Myazidrikov, O. A. - 1751
 Mysak, A. E. - 343

N

Naumova, I. I. - 1508
 Navrotskii, I. V. - 115
 Nazarenko, V. A. - 1625
 Nekhendzi, E. Yu. - 726
 Neuimin, Yu. A. - 299
 Nevskaya, V. N. - 333
 Nichiporchik, S. N. - 441
 Nikiforov, A. Ya. - 1773
 Nikiforov, V. P. - 1904
 Nikitin, F. V. - 1201, 1829
 Nikitin, V. M. - 623
 Nikitin, V. N. - 103
 Nikitina, E. I. - 805
 Nikitina, O. I. - 1685
 Nikolaenko, G. M. - 1766
 Nikolaeva, E. R. - 1791
 Nikolaeva, Z. V. - 994
 Nikol'skaya, N. N. - 670
 Nisnevich, A. I. - 565
 Nistratov, N. I. - 1420
 Norkus, P. K. - 1489
 Noskov, V. V. - 410
 Novak, V. P. - 191, 338, 358
 Novik, E. Yu. - 728
 Novik, V. I. - 1378
 Novikova, Yu. N. - 1835
 Nozdrev, V. F. - 569
 Nozyreva, E. S. - 737
 Nyauronis, I. I. - 759

O

Obraztsova, L. K. - 873
 Obukhova, O. - 789
 Odinokov, Yu. I. - 756
 Odinokova, L. P. - 756
 Odumanova-Dunaeva, G. A. - 36
 Okhapkina, L. L. - 336
 Okhotnikov, B. P. - 1116
 Okun', L. S. - 1526, 1529
 Oleinik, A. S. - 583
 Oleneva, V. A. - 1747
 Olerskaya, S. M. - 173
 Orestova, V. A. - 1660

Orient, I. - 960, 1606
 Orlov, V. A. - 1505
 Oshchepkova, N. V. - 397
 Osipenko, N. N. - 1687
 Ostroymov, V. V. - 1035
 Osvenskii, V. B. - 1358
 Ovcharenko, E. Ya. - 517, 520, 524
 Ovcharova, E. N. - 679
 Ovchinnikov, V. V. - 773
 Ovodova, A. V. - 1526
 Ovsyannikov, B. M. - 438, 1724

P

Panarina, N. A. - 689
 Panferov, K. V. - 1556
 Panfilov, V. A. - 269
 Pankratov, M. P. - 1503
 Panova, V. A. - 512, 513
 Pantaler, R. P. - 197
 Papchenko, V. I. - 1432
 Paramzin, Yu. P. - 1416
 Parimskii, A. I. - 1659
 Parshin, I. P. - 1581
 Parshina, A. M. - 1316
 Parusov, V. V. - 920
 Paryshev, Yu. M. - 255
 Pashchenko, A. I. - 814, 1637
 Pashchenko, N. M. - 215, 841
 Pashkov, P. O. - 1400
 Pastukhov, I. F. - 1881
 Pavlenko, I. I. - 1033
 Pavlinskii, G. V. - 1334
 Pavlov, N. M. - 1816
 Pavlova, V. K. - 645
 Pavlovskii, R. - 601
 Pavlovskii, V. É. - 1095
 Pavlyukevich, T. M. - 456
 Pedenko, V. A. - 299
 Peizulaev, Sh. I. - 685
 Pekarev, A. I. - 1594, 1836
 Peras, A. Ya. - 1741
 Perchikhina, E. A. - 1552
 Perezhogin, G. A. - 486
 Perkas, Kh. D. - 1181
 Petrenko, B. Ya. - 1280
 Petrichenko, I. P. - 464
 Petrov, N. V. - 1656
 Petrov, Yu. A. - 1738
 Petukh, M. L. - 691
 Pevnyi, N. I. - 626
 Pevzner, K. S. - 196, 1308
 Pikhtin, A. N. - 687
 Pilipenko, A. T. - 182
 Pil'kevich, L. A. - 612
 Pirozhkova, V. P. - 1372

Pisarenko, G. S. - 1069
 Pisarev, V. E. - 567
 Pisareva, V. A. - 800
 Pivovarov, A. V. - 698, 1339
 Pivovarov, S. P. - 681, 683, 1256
 Plaksin, I. N. - 1547, 1829
 Plan, M. A. - 950
 Platonov, V. S. - 1272
 Pobedina, L. I. - 1795
 Podchainova, V. N. - 511, 981
 Poddbynyi, I. Ya. - 1597
 Pogoretskii, R. G. - 1871
 Pokrovskaya, L. A. - 340
 Pokrovskii, A. D. - 1754
 Polak, L. S. - 343
 Polevodov, A. P. - 1772
 Polezhaeva, L. I. - 530
 Polkovnikova, A. G. - 679
 Poluboyarinov, D. N. - 1761
 Polyakov, A. Yu. - 93, 1264
 Polyakov, Yu. N. - 933, 1564
 Pongil'skii, N. F. - 610, 1262, 1584
 Ponomar', V. I. - 520
 Popel', A. A. - 1192
 Popov, G. G. - 1552
 Popov, K. V. - 737
 Popov, L. N. - 467
 Popova, N. N. - 394
 Poskachei, A. A. - 1764
 Postnikov, I. V. - 539
 Potapov, E. É. - 291
 Potapov, V. I. - 1432
 Potapova, L. I. - 158
 Potatuev, A. A. - 1659
 Povolotskaya, G. L. - 1173
 Pozdnyakov, A. A. - 1559
 Pozdnyakov, V. V. - 1428
 Predtechenskii, M. A. - 1260
 Preobrazhenskaya, G. B. - 962, 1126, 1129
 Pridantsev, M. V. - 967
 Prigorovskii, N. I. - 1388
 Prishchepionok, L. A. - 1413
 Pronin, A. T. - 1272, 1769
 Proshko, V. M. - 608
 Protasov, E. A. - 1267
 Prytkova, E. V. - 680
 Pul'tsin, N. M. - 1101
 Pyatnitskii, I. V. - 3
 Pyatnitskii, V. N. - 1496

R

Rabinovich, A. G. - 82
 Radchik, V. S. - 285
 Radilov, S. V. - 1382

Radushkevich, B. V. - 622
 Raff, E. L. - 224
 Raines, L. Yu. - 918
 Raiskii, S. M. - 1061
 Rakhmanov, A. S. - 1712
 Rapoport, S. M. - 1281
 Rashevskaya, S. T. - 504
 Raspopov, L. N. - 1593
 Ravitskaya, R. V. - 1625
 Razumova, G. P. - 1632
 Reguzova, Z. V. - 1318
 Reitburd, A. I. - 1004
 Rekkolainen, G. I. - 536
 Remizov, Yu. S. - 1113
 Renskii, A. B. - 1577
 Reshchikova, A. A. - 199
 Reshetova, L. I. - 534
 Reznitskaya, T. V. - 516, 1661
 Rezova, A. T. - 1795
 Rogovoi, A. G. - 1709
 Romanets, R. G. - 1354
 Romanov, A. N. - 296
 Romanov, N. R. - 1543
 Romanova, V. S. - 1174
 Rosin, G. S. - 1917
 Rovenskaya, T. V. - 1033
 Rubinshtein, R. N. - 539
 Rublev, Yu. V. - 1392
 Rubshtein, V. M. - 935
 Rubtsova, E. S. - 504
 Ruch'eva, N. I. - 356
 Rudchenko, A. V. - 109
 Rudnevskii, N. K. - 851
 Rudoï, P. S. - 871
 Rudzit, G. P. - 1131
 Rumyantsev, A. P. - 1778
 Rutman, L. M. - 130
 Rutto, R. A. - 280
 Ryabchenkov, A. V. - 610, 1262, 1584
 Ryabchikov, D. I. - 185
 Ryabina, L. V. - 728
 Rybina, V. - 511
 Ryabinskaya, N. B. - 1531
 Ryabov, V. P. - 1104
 Ryabtsev, N. G. - 774
 Ryabtsev, S. I. - 765
 Ryabykina, L. V. - 1526
 Rygailo, T. A. - 24

S

Sabaev, V. I. - 520
 Sakyants, G. S. - 626
 Salamov, A. A. - 1082
 Salli, I. V. - 141

Samarin, A. M. - 93
 Sambueva, A. S. - 1348
 Samoilenko, A. I. - 1534
 Sanzharovskii, A. T. - 926
 Saprykova, Z. A. - 1192
 Satarina, G. I. - 302
 Savel'ev, N. T. - 153
 Savichev, E. I. - 1195
 Savitskaya, I. S. - 315
 Savvateeva, S. M. - 489
 Savvin, S. B. - 185
 Sazonov, A. M. - 1424
 Sazonov, M. L. - 1301
 Schshavelin, V. M. - 446
 Seider, Sh. A. - 1598
 Selisskii, Ya. P. - 1846
 Semenov, A. P. - 1428
 Semenovskaya, I. B. - 1364
 Sergeev, V. K. - 880
 Serikov, V. K. - 1266
 Severov, A. A. - 880
 Shabad, L. M. - 1682
 Shabalin, V. I. - 750
 Shaevich, A. B. - 205
 Shafiev, A. I. - 922
 Shafran, I. G. - 1640
 Shagina, S. G. - 679
 Shaginyan, A. S. - 161, 1922
 Shaginyan, L. B. - 1283
 Shakhova, P. G. - 359, 494
 Shamov, I. V. - 599
 Shapiro, M. Ya. - 41
 Shaposhnik, V. A. - 1518
 Shapoval, V. Ya. - 1510
 Shardakov, V. M. - 1281
 Shatenshtein, V. G. - 97
 Shatrovskii, G. L. - 1277
 Shchapov, N. P. - 255
 Shchepilov, N. S. - 1771
 Shelkov, L. S. - 1821
 Shemyakin, F. M. - 1780, 1815
 Shemyatenkova, V. T. - 40
 Shel', M. M. - 1008
 Shelkov, L. S. - 524
 Shelomov, I. K. - 1659
 Sher, N. M. - 1004
 Sherman, V. S. - 1539
 Shestakov, V. M. - 1266
 Shevchenko, Z. A. - 1012
 Shevchuk, I. A. - 670
 Shevtsov, V. E. - 1645
 Shil'gorin, F. A. - 285, 1392
 Shipitsyn, S. A. - 309, 1348
 Shipulina, G. V. - 1015
 Shiryayev, A. N. - 1124

Shiryayeva, O. A. - 39, 811
 Shishkina, N. I. - 1174
 Shishlov, A. D. - 1749
 Shlenskaya, V. I. - 1134
 Shlyakhov, A. F. - 1301
 Shlyuko, V. Ya. - 1759
 Shmyrev, I. P. - 1222
 Shneider, S. A. - 1282
 Shneiderovich, R. M. - 885, 1867
 Shpak, É. A. - 182
 Shpeizer, G. M. - 331
 Shtan', I. I. - 606
 Shteding, M. N. - 935
 Shteinberg, A. N. - 58
 Shtifman, L. M. - 40
 Shuremel', M. A. - 259
 Shtutman, M. N. - 299
 Shubenko, G. L. - 394
 Shubina, S. B. - 853
 Shugurov, E. V. - 1195
 Shul'te, Yu. A. - 1284
 Shvalyuk, V. A. - 1572
 Shvartsman, V. P. - 1116
 Shvindlerman, G. S. - 30
 Sidorov, V. P. - 610, 1262
 Sidorovich, A. V. - 1278
 Silant'ev, S. A. - 1595
 Sil'nichenko, V. G. - 809
 Simonova, T. N. - 670
 Simonyan, S. G. - 308, 1387, 1524
 Simonyants, E. G. - 1662
 Sinii, L. L. - 569
 Sinitsyn, V. V. - 288
 Sinyaver, L. G. - 620
 Sipailov, V. A. - 1018
 Sizov, S. Yu. - 819
 Sklyarov, O. E. - 767
 Sklyuev, P. V. - 1251
 Skonets, E. M. - 1163
 Skorodumov, N. N. - 177
 Skudnov, V. A. - 1084
 Skuratov, V. I. - 645
 Sladkov, A. Z. - 470
 Slobodanyuk, V. Ya. - 931
 Slyusareva, B. L. - 685
 Smagunova, A. N. - 201
 Smirnova, Z. F. - 1854
 Smolin, M. D. - 1026
 Smolova, N. T. - 1134
 Smyslova, N. F. - 514
 Snagovskii, V. M. - 1380
 Snegarev, K. A. - 35
 Snovidov, V. M. - 707
 Sobol', V. E. - 143
 Sobolev, G. I. - 149

Sobolev, V. S. - 251
 Sobolevskaya, G. D. - 1766
 Sochevanov, V. G. - 665, 1311
 Sochevanova, M. M. - 1311
 Sof'ina, M. M. - 958
 Soiferman, I. A. - 198, 952
 Sokiryanskii, L. F. - 58
 Sokolov, D. N. - 1649
 Sokolov, L. D. - 452
 Sokolovich, V. E. - 1803
 Sokolovskii, P. I. - 732, 1719
 Solntsev, S. S. - 896
 Solomonov, V. M. - 865
 Solov'ev, A. N. - 877
 Solov'ev, R. A. - 1711
 Somov, A. P. - 1805
 Songina, O. A. - 315, 814, 816,
 1453, 1637
 Sorkin, L. S. - 608
 Sorokin, M. F. - 672
 Sorokin, O. V. - 454
 Sorokina, E. D. - 215, 841
 Sorokina, N. N. - 1680
 Sotnikov, V. A. - 517, 520, 522
 Spektor, A. N. - 460
 Spektor, K. A. - 678
 Spektor, Ya. I. - 1012
 Srapenyants, R. A. - 565
 Starov, R. V. - 1708
 Stativa, V. P. - 1036
 Stepanov, G. A. - 746, 1729
 Stepnov, M. N. - 419
 Stolyar, M. G. - 1522
 Stolyarov, A. A. - 213
 Stradyn', Ya. P. - 42
 Stroganov, G. B. - 1282
 Stromberg, A. G. - 1467, 1480
 Studennikov, Yu. A. - 469
 Studenskaya, L. S. - 1140
 Subbotin, A. I. - 1779
 Sukachev, O. T. - 871
 Sukhorukov, I. F. - 397
 Sukhorukov, O. A. - 1326
 Sukhorukov, V. V. - 1754
 Sukhov, F. F. - 1204
 Suprunovich, V. I. - 319
 Surovoi, Yu. N. - 1696
 Suzdalev, I. P. - 1896
 Svershkov, Yu. V. - 560
 Syromyatnikov, N. G. - 999, 1654
 Syrovatskii, É. F. - 1367

T

Taganov, K. I. - 158
 Tagirov, R. B. - 1918

Tal'roze, V. L. - 1384
 Tanich, I. N. - 873
 Tantsyrev, G. D. - 1384
 Taran, Yu. N. - 1378, 1380
 Taskaeva, T. P. - 217
 Tavadze, F. N. - 915
 Tenenbaum, M. M. - 431
 Teodorovich, V. P. - 752
 Terent'ev, V. A. - 213
 Terminasov, Yu. S. - 785
 Terminasova, M. D. - 276
 Tibanov, P. V. - 209
 Tikhonov, V. N. - 200, 1175
 Timofeev, G. I. - 1813
 Timoshenko, N. N. - 1323
 Timoshuk, L. T. - 1420
 Titov, G. V. - 283
 Tiunova, I. M. - 831
 Tkachenko, A. N. - 1133
 Tobol'skii, M. B. - 241
 Tochil'nikov, D. G. - 1499
 Todorov, R. P. - 1243
 Tokareva, A. M. - 691
 Tolubara, A. I. - 32
 Tomas, V. K. - 550
 Tonkushin, Yu. A. - 1029
 Toporov, G. U. - 427, 1878
 Tramm, R. S. - 196, 1308
 Tret'yakov, A. V. - 1550
 Trofimov, A. A. - 1015
 Trofimov, G. K. - 1550
 Trofimova, L. A. - 1654
 Tronina, E. M. - 328
 Troshchenko, V. T. - 126, 1875
 Troyan, I. A. - 604, 1073
 Trukhanova, Z. S. - 795
 Trukhtanov, V. A. - 1896
 Tsarfin, Ya. A. - 996, 1306
 Tsagolov, K. A. - 565
 Tsekhovol'skaya, D. I. - 1177
 Tserkovnitskaya, I. A. - 1471
 Tsesler, B. I. - 1392
 Tsimel'zon, A. I. - 1537
 Tsirlin, Yu. A. - 865
 Tsybalyuk, V. V. - 1922
 Tumanov, V. I. - 795
 Tustanovskii, V. T. - 1587
 Tutorskii, I. A. - 291
 Tuzov, L. V. - 276
 Tyablikov, Yu. E. - 594, 1098
 Tyunyukov, B. K. - 773

U

Uksusnikova, A. A. - 173
 Ural'skii, M. P. - 1764

Usacheva, V. P. - 775
 Usatenko, Yu. I. - 32, 319, 978,
 1800
 Usenova, Z. M. - 668
 Ushakov, V. F. - 1354
 Ushakov, V. I. - 1780
 Ustimov, A. M. - 510, 1351
 Ust'yantsev, V. M. - 763
 Usvyatsov, A. A. - 816
 Uverskii, A. A. - 1516

V

Vagapov, R. D. - 890
 Vagina, I. A. - 1015
 Vainblat, Yu. M. - 1513
 Vainshtein, É. E. - 847
 Vandyshev, V. P. - 138
 Varchak, N. M. - 1410
 Varenik, A. F. - 1269
 Varlamov, M. L. - 1168
 Vashchenko, K. I. - 912
 Vasichev, B. N. - 1826
 Vasilenko, V. T. - 1327
 Vasil'ev, A. F. - 209, 832, 834,
 1664, 1671
 Vasil'ev, D. M. - 1209
 Vasil'ev, V. I. - 27
 Vasil'ev, Ya. V. - 1113
 Vasil'ev, Yu. V. - 622
 Vasilevskaya, L. S. - 689
 Vdovin, E. D. - 1579
 Velikanov, A. V. - 124, 1079
 Venkova, L. V. - 87
 Venzhega, A. S. - 590
 Verbitskii, V. A. - 1424
 Veretennikov, E. A. - 161
 Vernyi, E. A. - 1443
 Vertman, A. A. - 1264
 Vigdergauz, M. S. - 675
 Vigdorovich, V. N. - 700, 1233
 Vikulov, A. P. - 558
 Vil'yams, O. S. - 583
 Vinogradov, A. F. - 1279
 Vinogradov, A. V. - 1443
 Vinogradov, G. V. - 133, 145, 288
 Vinogradova, E. N. - 1473
 Virkhanskii, M. A. - 939
 Vishnevskii, A. R. - 1881
 Vlasov, L. G. - 1772
 Vlodavets, M. L. - 679
 Voevodina, S. S. - 1843
 Voevodskii, A. S. - 1035
 Voiteskovskii, R. V. - 400
 Voitovich, V. A. - 307
 Vol'berg, Yu. L. - 1715

Volkov, A. I. - 1272, 1769
 Volkov, K. F. - 1593
 Volkova, G. A. - 665
 Volkova, L. V. - 807
 Volkova, V. A. - 36
 Volokhova, V. I. - 828, 830
 Voloskov, G. A. - 1552
 Vorob'ev, G. G. - 402
 Vorob'ev, G. M. - 1222
 Vorob'ev, V. A. - 283
 Voronkova, A. Ya. - 1623
 Voronova, E. D. - 189
 Vosdvizhenskii, V. M. - 1843
 Voyakin, V. N. - 590
 Vronskaya, V. P. - 143
 Vyaselev, M. R. - 16
 Vybornov, B. I. - 388

Y

Yakimov, A. V. - 1018
 Yakobson, A. M. - 383, 1264
 Yakovlev, P. Ya. - 1632, 1780
 Yakovleva, A. V. - 1351
 Yakutin, V. I. - 694
 Yamnitskii, É. L. - 558
 Yamshchikov, V. S. - 761
 Yankauskas, V. F. - 322
 Yankov, G. I. - 1914
 Yanovskii, M. I. - 1904
 Yanovskii, Yu. G. - 133
 Yanshkevich, V. A. - 858
 Yarovenko, A. N. - 333

Yatsimirskii, K. B. - 645
 Yavor, A. A. - 1400
 Yavorskii, A. K. - 307
 Yudovich, S. Z. - 911
 Yurchak, R. P. - 615, 1421
 Yurist, I. M. - 325
 Yusfin, Yu. S. - 460
 Yushkevich, I. N. - 237

Z

Zablotskii, G. A. - 1115
 Zabugina, M. P. - 145
 Zaev, E. E. - 1208
 Zaichko, L. F. - 322
 Zaidman, N. M. - 331
 Zaitsev, E. G. - 1584
 Zaitsev, G. Z. - 754
 Zaitsev, P. M. - 1604
 Zakharov, M. S. - 322
 Zakharov, V. S. - 622
 Zaliivakin, D. I. - 731
 Zalkin, V. - 1435
 Zal'tsman, M. Ya. - 164, 631
 Zanina, E. P. - 1684
 Zaretskii, S. I. - 955
 Zarinskii, V. A. - 1029
 Zarochentsev, G. V. - 237
 Zasimchuk, T. K. - 400
 Zaslavskaya, L. V. - 659
 Zavadovskaya, É. N. - 30
 Zavadovskaya, V. N. - 1812
 Zavarov, G. V. - 1642

Zav'yalov, O. V. - 1487
 Zav'yalova, L. L. - 1225
 Zborobskii, A. A. - 1709
 Zedginidze, I. G. - 1047
 Zelentsov, P. N. - 1123
 Zelentsova, L. V. - 219
 Zelinskii, Yu. V. - 612
 Zenevich, É. I. - 691
 Zhantalai, B. P. - 821, 1604
 Zheladnov, V. I. - 1264
 Zherdev, A. M. - 1280
 Zhernovoi, A. I. - 681, 683
 Zhervin, N. P. - 1031
 Zhikharev, Yu. N. - 1480
 Zhiryakov, B. M. - 1267
 Zhivopistsev, V. P. - 1295
 Zhizhina, L. I. - 1316
 Zhuk, N. M. - 1438
 Zhukhovitskii, A. A. - 715, 1301, 1645, 1805
 Zhurakovskii, V. M. - 904
 Zhuravleva, V. I. - 1173
 Zhvakina, L. D. - 1703
 Ziborova, E. N. - 82
 Zimin, R. A. - 1904
 Zimina, K. I. - 1269
 Zinger, O. M. - 1813
 Zlotnikov, M. S. - 1744
 Zolotavin, V. L. - 361
 Zubkova, Z. A. - 1176
 Zueva, V. L. - 1784
 Zvezdin, Yu. I. - 1374