

CONTENTS

K.Kuchitsu , Quantities, Units and Symbols in Physical Chemistry.....	5
M.I. Kjachukova, S.D. Vitkova, O.L. Blagiev, V.V. Ivanova, G.M. Raichevski , X-Ray Photoelectron Spectroscopic Studies of the Anodic Behaviour of Amorphous Chromium-Carbon and Crystalline Chromium Electrodeposits.....	25
V.B. Konsulov, Z.S. Grozeva , Copolymerization of 2-Hydroxyethyl Metacrylate with <i>n</i> -(4-Bromophenyl) Maleimide.....	38
M.R. Kosseva, V.N. Beschkov, C. Peres, S.N. Agathos , Removal of 2,4-Dinitrophenol by Simultaneous Adsorption and Bacteria <i>Pseudomonas putida</i> Fixed on Solid Supports.....	45
Ch. V. Dodev, R.D. Darakchiev , Study on the Gas Flow Distribution in Columns with Honeycomb Packing.....	51
P.R. Bonchev, I.N. Pantcheva, B.B. Ivanova, D.R. Mehandjiev , Complexation of Copper (II) with the Beta-Blocker Acetobutolol.....	59
S. Balova , Polymer Autodeposition Coating on Aluminum.....	68
Tz. P. Cholakova, A.A. Dobrev, L.V. Nechev - Study of the 1,4-Addition Reaction of 3-Morpholinones to 2,3-Saturated Esthers and Ketones.....	76
Y. Stefanov, M. Petrova, Z. Moncheva, Tz. Dobrev , Kinetics of the Anodic Processes during the Electrowinning of Zinc from Sulphate Electrolytes.....	84
M.P. Mladenova, M.G. Biserkova , Stereocontrolled Synthesis of Crossconjugated Unsaturated ω -Chloro-substituted Ketones.....	98
D. S. Yankov, I.B. Gugov (Sofia) , Comparative Study of Glucoamylase Immobilization onto Porous Inorganic Supports.....	105
A. Anastassov, V. Nikolov , Optimal Performance of a Fixed Bed Reactor. Part I. Dual Salt Bath.....	116
A. Anastassov, V. Nikolov , Optimal Performance of a Fixed Bed Reactor. Part II. Dual Catalyst Bed.....	129
D.R. Mehandjiev, R.B. Boncheva, N.B. Stankova , "Chromatographic Effect" During the Preparation of Nickel-Manganese Catalyst by Impregnation of γ -Alumina Supports.....	141

BULGARIAN CHEMICAL COMMUNICATIONS
Volume 31, Number 2, 1999

M. Bojinov, I. Kanazirski, Tz. Tzvetkoff, A. Girginov , A Surface Charge Approach to the Anodic Oxidation of Refractory Metals Niobium, Tantalum, Molybdenum and Tungsten.....	153
G. I. Ivanova, E. W. Randall , ¹ H and ¹³ C NMR Study of Soil Organic Matter at 14.1 T.....	172
I. V. Seikova, P. S. Varbanov, E. A. Ivanova , Minimum Topology Changes Retrofit of a Crude Oil Preheating System.....	184
G. D. Gentsheva, N. N. Daskalova, E. H. Ivanova , Analysis of Single Crystals of Copper-Doped Double Lithium-Barium Phosphates by Means of Inductively Coupled Plasma Atomic Emission Spectrometry and Atomic Absorption Spectrometry.....	200
E. H. Ivanova , Sample Pretreatment for Increasing the Efficiency of Atomic Absorption Spectrometry for Trace Element Determination in Complicated Matrices.....	213
I.I. Timcheva, Peter St. Nikolov , Formation of Intermolecular Hydrogen Bonds in the Fluorescence Excited State of Carbonyl Containing Heteroaromatic Organic Luminophores.....	223
A. D. Dakashev, V. T. Dimitrova , Determination of Weak Acids and Weak Bases by Flow Injection Analysis with Amperometric Detection.....	243
V. N. Ivanova, D. Pashkoulov, E.P. Dobрева , Study of Serine Proteinases from <i>Bacillus licheniformis</i> Strains.....	249
V. N. Ivanova, D. Pashkoulov, E.P. Dobрева , Thermostable Amylases from <i>Bacillus licheniformis</i> Strains (Purification and Properties).....	256
I. A. Avramov, V. D. Tonchev , Relaxation Through a Spatial Rearrangement.....	263
I. M. Boneva, P. Y. Malakov, G. Y. Papanov, K. Tomova , Diterpenoids and Sterols from <i>Scutellaria galericulata</i>	269
I.I. Boevski, N.N. Daskalova, I.P. Havezov, S. S. Davidkova , Determination of Chromium in Samples Collected in the Workplaces by Inductively Coupled Plasma and Direct Current ARC Emission Spectroscopy.....	276
D. I. Mihov , Molar Heat Capacities of Alkali-Copper Double Selenates $Me_2Cu(SeO_4)_2$ (Me = Na, K, Rb, Cs).....	288

BULGARIAN CHEMICAL COMMUNICATIONS
Volume 31, Number 3/4, 1999

Dedicated to Professor Dimiter Elenkov on the occasion of his 80th anniversary

L. Boyadzhiev, V.N. Beschkov, The 80th anniversary of Professor Dimiter G. Elenkov.....301

CHEMICAL ENGINEERING FUNDAMENTALS

Chr. Boyadjiev, Concentration and Temperature Effects on the Non-Linear Mass Transfer and Hydrodynamic Stability.....304
S. Slavchev, P.G. Kalitzova-Kurteva, I. A. Kurtev, Marangoni Convection at Non-Isothermal Gas Absorption and Desorption.....339
J. Gyenis, J. Szepvolgyi Jr., Virtual Experiments in Particle Technology.....362
T. Blickle, B. G. Lakatos, Cs. Mihalyko, Modelling of Interacting Populations of Solid Particles.....378

TRANSPORT PROCESSES

N.N. Kolev, E. Razkazova-Velkova, Study on the Absorption of Sulphur Dioxide into Solutions of Sodium Sulphite-Hydrosulphite at Extremely Low Liquid Superficial Velocity.....392
K.A. Semkov, N.N. Kolev, R.G. Popov, Axial Mixing in Liquid Phase in Packed Columns with Honeycomb Structured Packing.....403
Ch.V. Dodev, N.N. Kolev, R.D. Darakchiev, Gas Distributor for Packed Bed Columns.....414
I.V. Mishonov, G. D. Kyuchoukov, Removal of Copper from Hydrochloric Etching Solutions in a Pilot Plant.....424
F. A. Poposka, J. Prochazka, R. Tomovska, Prediction of Mass Transfer Coefficients for Tartaric Acid Extraction with Triethylamine.....433
D.S. Yankov, J. Molinier, G.D. Kyuchoukov, Extraction of Tartaric acid by Trioctylamine.....446
Sh. Tassev, Zh. Stefanov, P.M. Petrov, Mass Transfer in a Binary Distillation.....457
V. Taseva, I. Mitov, T. Peev, B. Kunev, B. Bonev, Phase Composition of Corrosion Products in Water Circulation Cooling Systems.....464
S.D. Vlaev, M. Martinov, Average Shear Rate and Power Consumption of a Curved Blade Impeller for Agitation of Non-Newtonian Fluids.....471
R. Pohorecki, W. Moniuk, A. Zdrojkowski, Hydrodynamics and Mass Transfer in a Small Stirred Tank Gas-Liquid Reactor.....477
J. Horak, Analysis of the Coolant Recycling on the Maximum Cooling Rate in Tank Reactors.....493

CHEMICAL & BIOCHEMICAL REACTOR ENGINEERING

V. Nikolov, A. Anastassov, Productivity of Modern Industrial Heterogeneous Catalytic Twin Processes – the Phtalic and Maleic Anhydride Syntheses.....505
V. Beschkov, S. Velizarov, T. Georgieva, Simultaneous Intraparticle Diffusion, Reaction and Aerobic Cell Growth in a Spherical Gel Biocatalyst: Model and Experiment.....521
M.R. Kosseva, Alternative Biocatalysts for Control of Malolactic Fermentation in Wine: Lyophilised or Immobilised Culture.....536
J. Klein, S. Godo, V. Bales, Comparison of Various Types of Bioreactors for the Production of Citric Acid Using *Aspergillus niger*547

ENVIRONMENT PROTECTION

I.D. Dobrevski, E. Sabeva, N. Petkova, Electrochemical Behaviour of Aluminum by Electrolysis in Black Sea Water.....565
I.D. Dobrevski, M. Dimova-Todorova, T. Panayotova, Purification of Wastewater from Small and Medium Size Electroplating Plants.....573

<i>D.R. Mehandjiev, S.V. Dimitrova</i> , Sorption Activity and Heavy Metal Removal from Aqueous Solutions by Metallurgical Slag.....	580
<i>K.T. Dinkov, N.D. Menkov</i> , Research on the Process of Ultrafiltration of Brine for the Salting of Cheese.....	590
<i>U. Viesturs, G. Telysheva, T. Dizhbite</i> , Chemical Processing of Photosynthesized Biomass for Industry and Energy.....	596
<i>M. Iovchev</i> , Desalination of Water. Discussing Approaches to Face the Challenges of the Next Century.....	615

MODELLING & PROCESS ENGINEERING

<i>N.D. Menkov, I.O. Obreshkov</i> , The Guggenheim-Anderson-DeBoer(GAB)-Model Application Possibilities by Means of Interpolation and Extrapolation.....	626
--	-----