

ISSN 0036-0244

# RUSSIAN JOURNAL OF PHYSICAL CHEMISTRY A

Focus on Chemistry

Pleiades  
Publishing Group

Over  
**50** years  
In the service of  
science and education

Editor-in-Chief  
Aslan Yu. Tsivadze

<https://pleiades.online>  
<https://link.springer.com>



PLEIADES GROUP OF COMPANIES

Distributed by **SPRINGER NATURE**



21 articles in this issue

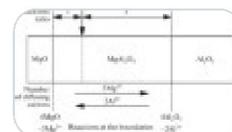
### Studying the Complexation of Mercury(II) with 1-Phenyl-2,3-dimethylpyrazoline-5-thione in 1.0 mol/L HNO<sub>3</sub>



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION “CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS”

23 March 2026 | Pages: 159 - 164

### Influence of Reactant Prehistory on Solid-Phase Synthesis of Magnesia Spinel



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION “CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS”

23 March 2026 | Pages: 165 - 171

### Preparation of a TiO<sub>2</sub>/Diatomite Composite by Hydrothermal Impregnation of a Mechanically Activated Matrix with a Solution of Titanium Polyhydroxocomplexes



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION “CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS”

23 March 2026 | Pages: 172 - 179

### Effects of the Textural Characteristics of the Copper–Zinc–Aluminum Catalyst on Its Catalytic Properties in the Carbon Monoxide Conversion with Water Vapor



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION “CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS”

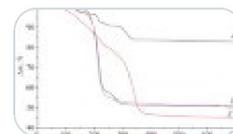
23 March 2026 | Pages: 180 - 186

### Energy Aspects of the Thermal Behavior of Low-Sodium Zeolite ZSM-5



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION “CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS”

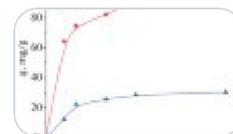
**Synthesis of Bulk Catalysts for Liquid-Phase Hydrogenation Using Metal Ammonia Carbonate Salts**



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS"

23 March 2026 | Pages: 193 - 198

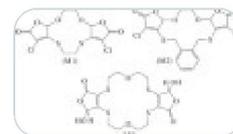
**Extraction of Copper(II) Ions with a Sorbent Based on Cellulose and Sodium Alginate Modified with Guanidine**



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS"

23 March 2026 | Pages: 199 - 206

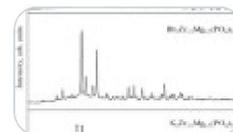
**Complexation of Thia-Crown Ethers with Nickel(II) and Silver(I) Ions in Ethanol and Dimethyl Sulfoxide**



IX ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "CURRENT PROBLEMS OF THEORY AND PRACTICE OF HETEROGENEOUS CATALYSTS AND ADSORBENTS"

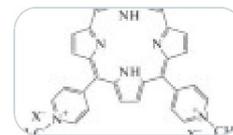
23 March 2026 | Pages: 207 - 211

**Thermochemistry of Framework Zirconium Phosphates  $A_2Zr_{1.5}Mg_{0.5}(PO_4)_3$  (A = K, Rb, Cs) with a Langbeinite Structure**



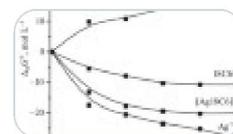
CHEMICAL THERMODYNAMICS AND THERMOCHEMISTRY | 23 March 2026 | Pages: 212 - 219

**Thermochemistry of Dissolution of 5,10,15,20-Tetrakis(1'-methylpyrid-4-yl)porphyrin Tetratosylate at 298.15 K**



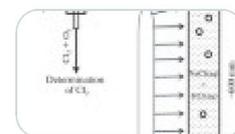
CHEMICAL THERMODYNAMICS AND THERMOCHEMISTRY | 23 March 2026 | Pages: 220 - 224

**Effects of Reagent Solvation on the Stability of the Coordination Compounds of Silver(I) with 18-Crown-6 Ether in Mixed Methanol–Acetonitrile Solvents**



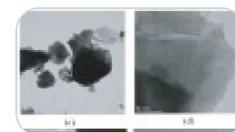
CHEMICAL THERMODYNAMICS AND THERMOCHEMISTRY | 23 March 2026 | Pages: 225 - 229

## Kinetics of Molecular Chlorine Release during Photochemical Ozonation of Acidic Chloride Solutions



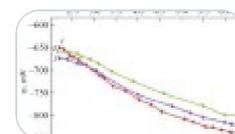
CHEMICAL KINETICS AND CATALYSIS | 23 March 2026 | Pages: 230 - 237

## Effects of Boron Concentration and Introduction Method on the Physicochemical and Catalytic Properties of Zeolite ZSM-5



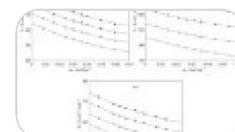
CHEMICAL KINETICS AND CATALYSIS | 23 March 2026 | Pages: 238 - 245

## Investigation of Complex Formation Processes in the Fe(II) with 1-Methyl-2-mercaptoimidazole System by Oxidation–Reduction Method at $T = 318$ K and Different Ionic Strengths



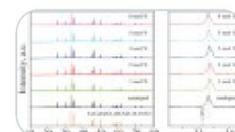
PHYSICAL CHEMISTRY OF SOLUTIONS | 23 March 2026 | Pages: 246 - 250

## Electrical Conductivity of Tetrabutylammonium Bromide, Sodium Tetraphenylborate, and Sodium Bromide in the Presence of Dimethyl Sulfoxide + Water Mixtures at Different Temperatures (298.15, 303.15, 308.15, and 313.15) K



PHYSICAL CHEMISTRY OF SOLUTIONS | 23 March 2026 | Pages: 251 - 261

## Structure and Properties of a Novel Orange-Red Phosphor $\text{CaGdAlO}_4:\text{Sm}^{3+}$ for w-LEDs



STRUCTURE OF MATTER AND QUANTUM CHEMISTRY | 23 March 2026 | Pages: 262 - 268

## Structure and Properties of the Lithium Bis(fluorosulfonyl)imide (LiFSI) in Sulfolane. Molecular Dynamics Simulation



CHEMOINFORMATICS AND COMPUTER SIMULATION | 23 March 2026 | Pages: 269 - 280

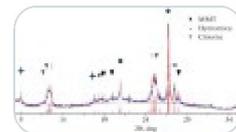
## Comparison of the Adsorption Properties of the Mesoporous Sorbents Modified with Chelate Complexes of Rare-Earth Benzoyl Acetonates Studied by Gas Chromatography



PHYSICAL CHEMISTRY OF DISPERSED SYSTEMS AND SURFACE PHENOMENA | 23 March 2026 |

---

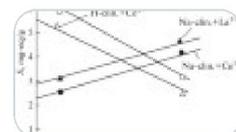
**Studying the Adsorption of Copper, Zinc, and Cadmium Ions on Native and Modified Montmorillonite-Containing Clay**



PHYSICAL CHEMISTRY OF DISPERSED SYSTEMS AND SURFACE PHENOMENA | 23 March 2026 |  
Pages: 289 - 295

---

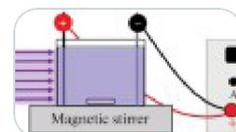
**Sorption of La(III) and Ce(III) Ions on the Monocationic Na and H Forms of Clinoptilolite**



PHYSICAL CHEMISTRY OF DISPERSED SYSTEMS AND SURFACE PHENOMENA | 23 March 2026 |  
Pages: 296 - 301

---

**Photoelectrochemical Oxidation of Ceftriaxone in Aqueous Solutions Using a KrCl Excilamp (222 nm)**



PHOTOCHEMISTRY, MAGNETOCHEMISTRY, MECHANOCHEMISTRY | 23 March 2026 | Pages: 302 - 307

---