# **CONTENTS**

#### 99 Rovenchak A., Trokhymchuk A.

From Brownian motion to molecular simulations

#### 108 Bomba A., Safonyk A., Voloshchuk V.

Spatial modeling of multicomponent pollution removal for liquid treatment under identification of mass transfer coefficient

## 119 Chekurin V., Postolaki L.

Residual stresses in a finite cylinder.

Direct and inverse problems and their solving using the variational method of homogeneous solutions

# 134 Hachkevych O., Hachkevych M., Torskyy A., Dmytruk V.

Mathematical model of optimization of annealing regimes by the stress state for heat-sensitive glass elements of structures

## 147 Klapchuk M., Grygorchak I.

The effect of additional off-diagonal disorder of interionic interaction on charge-storage in sub-nanometer pores of supramolecular carbon supercapacitors

## 158 Kostrobij P., Ryzha I., Markovych B.

Mathematical model of carbon monoxide oxidation: influence of the catalyst surface structure

# 169 Labay V., Dovbush O., Yaroslav V., Klymenko H.

Mathematical modeling of a split-conditioner operation for evaluation of exergy efficiency of the R600A refrigerant application

## 178 Limarchenko O., Nefedov A.

Resonant modes of the motion of a cylindrical reservoir on a movable pendulum suspension with a free-surface liquid

# 184 Markovych B.

Investigation of effective potential of electron-ion interaction in semibounded metal

## 193 Musii R., Melnyk N., Dmytruk V.

Investigation of properties of contact connector of bimetallic hollow cylinder under the influence of electromagnetic pulse

## 201 Pelykh V., Taistra Y.

On the null one-way solution to Maxwell equations in the Kerr space-time

## 207 Raskin L., Sira O., Sagaydachny D.

Multi-criteria optimization in terms of fuzzy criteria definitions

#### 221 Shopa T.

Vibration of orthotropic doubly curved panel with a set of inclusions of arbitrary configuration with different types of connections with the panel

## 235 Stasyuk I., Stetsiv R., Farenyuk O.

Low-frequency dynamics of 1d quantum lattice gas: the case of local potential with double wells

# 242 Vdovych A., Zachek I., Levitskii R.

Calculation of transverse piezoelectric characteristics of quasi-one-dimensional glycine phosphite ferroelectric