

UKRAINIAN JOURNAL OF PHYSICS

NATIONAL ACADEMY OF SCIENCES OF UKRAINE
BOGOLYUBOV INSTITUTE FOR THEORETICAL PHYSICS

11 VOLUME 60
2015

SCIENTIFIC JOURNAL
12 TIMES PER YEAR
ISSUED FROM APRIL 1956
KYIV

CONTENTS

Atoms and Molecules

- Chernolevska Ye.A., Doroshenko I.Yu., Pogorelov V.E., Vaskivskyi Ye.V., Sablinskas V., Balevicius V., Isaev A.* Theoretical and Experimental Researches of Methanol Clusters in Low-Temperature Matrices 1089
Simulik V.M., Zajac T.M., Tymchyk R.V. Application of the Method of Interacting Configurations in the Complex Number Representation to Calculating the Spectroscopic Characteristics of the Autoionizing States of Be, Mg, and Ca Atoms 1094

Plasmas and Gases

- Kovtun Yu.V., Pinos I.B., Ozerov A.N., Skibenko A.I., Skibenko E.I., Yuferov V.B.* Microwave Device on the Basis of a Barrel Resonator for Determining the Average Density and the Density Profile in Plasma Formations 1101

Soft Matter

- Bulavin L.A., Gotsulskiy V.Ya., Malomuzh N.P., Stirnats M.V.* Refractometry of Water-Ethanol Solutions near Their Contraction Point 1108
Vakarchuk I.O., Hryhorchak O.I. Structure Functions of Many-Boson System with regard for Direct Three- and Four-Particle Correlations 1115

Solid Matter

- Danilevich A.G.* Interaction of Elastic and Spin Waves in a Uniaxial Ferromagnet 1126

Nanosystems

- Goriachko A., Melnik P.V., Nakhodkin M.G.* New Features of the Ge(111) Surface with Co-existing c(2×8) and 2×2 Reconstructions Investigated by Scanning Tunneling Microscopy 1132
Bolesti I.M., Rovetskii I.N., Yaremko Z.M., Karbovnyk I.D., Velgosh S.R., Partyka M.V., Gloskovskaya N.V., Lesivtsiv V.M. On the Mechanism of Nanostructure Growth on the Surface of CdI₂ Crystals 1143
Pinchuk-Rugal T.M., Dmytrenko O.P., Kulish M.P., Bulavin L.A., Nychyporenko O.S., Grabovskyi Yu.E., Zabolotnyi M.A., Strelchuk V.V., Nikolenko A.S., Shlapatska V.V., Tkach V.M. Radiation-Induced Damages in Multi-Walled Carbon Nanotubes at Electron Irradiation 1150

General Problems of Theoretical Physics

- Vaskivskyi V.I.* Correlation Functions of Coulomb Pair 1155
Teslenko V.I., Kapitanchuk O.L. Fractional Cooperativity of a Few-State System in the Environment 1163

Astrophysics and Cosmology

- Singh K.P., Dewri M.* Some Spherically Symmetric R/W Universe Interacting with Vacuum B-D Scalar Field 1177