

CONTENTS

Fields and Elementary Particles

- Bondarenko E.A.* Two Systems of Maxwell's Equations and Two Corresponding Systems of Wave Equations for Electromagnetic Field Vectors **E** and **B** in a Rotating Frame of Reference: a Linear Approximation 99

Atoms and Molecules

- Uvarov V.N., Uvarov N.V., Bepalov S.A., Nemoshkalenko M.V.* Atomic Disorder and Electron Band Structure in the Heusler Alloy CoTiSb 106

Optics, Lasers, and Quantum Electronics

- Plutenko D.O., Vasnetsov M.V.* Symmetry in a Spherical-Particle Light Scattering and a Phase Shift Induced by a Particle Translation 112

Soft Matter

- Mudryi S.I., Lytvyn M.A.* Influence of Low Nickel Contents on the Surface Tension and Density of Nickel–Indium Melts 118
- Vakarchuk I.O., Panochko G.* The Effective Mass of an Impurity Atom in the Bose Liquid with a Deformed Heisenberg Algebra 123

Solid Matter

- Hovorun T.P., Bilous O.A., Gaponova O.P., Dekhtyaruk L.V., Chornous A.M.* Research of Conductivity in Polycrystalline Films with a Thin Coating Using the Modified Mayadas–Shatzkes Model 132

- Gemechu N., Senbeta T., Mesfin B., Mal'nev V.N.* Thermoluminescence from Silicon Quantum Dots in the Two Traps–One Recombination Center Model 140
- Choudhury M.D., Sen R., Sharma B.I.* Vibrational IR Spectra of Solid Carbon Monoxide 146
- Khudher H.H., Hasan A.K., Sharrad F.I.* Calculation of Energy Levels, Transition Probabilities, and Potential Energy Surfaces for ^{120–126}Xe Even-Even Isotopes 152
- Veleschuk V.P., Vlasenko O.I., Vlasenko Z.K., Gnatyuk V.A., Levytskyi S.N.* Dependence of the CdTe Melting Threshold on the Pulse Duration and Wavelength of Laser Radiation and the Parameters of Non-Equilibrium Charge Carriers 159

Nanosystems

- Olenych I.B., Monastyrskiy L.S., Koman B.P.* Electrical Properties of Silicon-Oxide Heterostructures on the Basis of Porous Silicon 166

General Problems of Theoretical Physics

- Prykarpatsky A.K.* The Quantum Fermionic Charged Particle Self-Interaction Problem within the Fock Multi-time and Feynman Proper Time Paradigms 172

Physics Experiment Techniques

- Rode G.G.* Propagation of the Measurement Errors and Measured Means of Physical Quantities for the Elementary Functions x^2 and \sqrt{x} 184