## **UKRAINIAN JOURNAL OF PHYSICS**

NATIONAL ACADEMY OF SCIENCES OF UKRAINE BOGOLYUBOV INSTITUTE FOR THEORETICAL PHYSICS

VOLUME 62 SCIENTIFIC JOURNAL 12 TIMES PER YEAR ISSUED FROM APRIL 19 KYIV

ISSUED FROM APRIL 1956

## **CONTENTS**

Nuclei and Nuclear Reactions	Abubakar D., Mahmoud N., Mahmud Sh. Investigation on	1
Bekh S.V., Kobushkin A.P., Strokovsky E.A. Nucleon Momentum Distributions in <sup>3</sup> He and Three-Body Interactions 927	the Structural and Optical Properties of NiO Nanoflakes. Chemical Bath Deposition of Ni(OH) <sub>2</sub> Thin Films	
Abed Al-Jubbori M. Investigation of Energy Levels and Electromagnetic Transitions for Yb–Pt Nuclei with N=108 Using IBM, IVBM, and BMM 936	Hashim A., Hadi A. Novel Lead Oxide Polymer Nano- composites for Nuclear Radiation Shielding Applica- tions	978
Optics, Lasers, and Quantum Electronics  Glushko E.Ya. Island-Kind 2D Photonic Crystal Resona-	Hrushka V.I., Peleshchak R.M. Polaron State in the Self-Consistent Electron-Deformation Field of the Quantum Dot-Matrix System	984
Gentsar P.O., Vlasenko O.I., Levytskyi S.M. Laser-Stimulated Enhancement of the Reflectance of Single-Crystalline n-GaAs(100)	Bushkova V.S. Magnetic Hysteresis and Curie Temperature in Nickel-Chromium Ferrites Synthesized by Sol-Gel Auto-Combustion Method	992
Solid Matter	<b>General Problems of Theoretical Physics</b>	
Zainabidinov S., Mamatkarimov O.O., Khimmatkulov O., Tursunov I.G. Influence of Deep-Level Impurities on the Strain Electric Properties of Monocrystalline Silicon 957	Silvestrov A.M., Zimenkov D.K. Analysis of Theoretical and Experimental Studies of the Huber Effect	1001
Nanosystems	Astrophysics and Cosmology	
Abramov A.A., Tkachenko V.G. Features of the Formation of Cluster Compounds in Metal Solid Solutions	Pelykh V.O., Taistra Y.V. Null One-Way Fields in the Kerr Spacetime	1007