

UKRAINIAN JOURNAL OF PHYSICS

NATIONAL ACADEMY OF SCIENCES OF UKRAINE
DEPARTMENT OF PHYSICS AND ASTRONOMY

6.2012 Vol. 57

Scientific monthly journal
issued from April 1956

CONTENTS

Nuclei and Nuclear Reactions

- Pravdivy M.M., Korzh I.O., Sklyar M.T.* Average Resonance Parameters of Tellurium and Neodymium Nuclei 593
- Gautam S., Kant R.* Effect of Momentum Correlations on the Properties of Fragments Produced in Heavy-Ion Collisions 599

Plasmas and Gases

- Polatayko M.M.* Determination of Detonation Wave Velocity in an Explosive Gas Mixture 606

Soft Matter

- Bardik V.Yu., Nerukh D., Pavlov E.V., Vlasyuk M.S.* Free Energy Functional Expansion as the Generalized Approach to the Equation of State of Dense Fluids 612
- Alekseev A.D., Feldman E.P.* Non-Equilibrium Thermodynamics and Outburst Hazard of a Coal Bed 619
- Bulavin L.A., Solov'ev D.V., Gorshkova Yu.E., Zhigunov O.M., Ivan'kov O.I., Gordelii V.I., Kuklin O.I.* Structural Transition in a Lipid-Water Liquid System 623

Solid Matter

- Tyutyunnyk N.V., Gusak A.N.* Role of Non-Equilibrium Vacancies in Spinodal Decomposition 628
- Luniov S.V., Panasiuk L.I., Fedosov S.A.* Deformation Potential Constants Ξ_d and Ξ_d in *n*-Si Determined with the Use of the Tensorresistance Effect 636

- Rahmati A., Khanzadeh M.* Effect of Nitrogen Partial Pressure on Reactive Magnetron Sputtering From $Ti_{13}Cu_{87}$ Metalloid Target: Simulation of Chemical Composition 642
- Bedarev V.A., Pashchenko M.I., Merenkov D.N., Bezmaternykh L.N., Temerov V.L.* Magneto-optical Study of Spin-Orientation Phase Transition in $NdFe_3(BO_3)_4$ Single Crystal 648
- Shtepliuk I.I., Lashkarev G.V., Khomyak V.V., Lytvyn O.S., Marianchuk P.D., Timofeeva I.I., Evtushenko A.I., Lazorenko V.I.* Influence of Growth Conditions on Structural and Optical Properties of $Zn_{0.9}Cd_{0.1}O$ Films 653
- Loburets A.T., Zaika S.A., Naumovets A.G.* Influence of Coadsorbed Strontium Atoms on Surface Diffusion in Lithium Submonolayer Films on Tungsten (112) Face 661

General Problems of Theoretical Physics

- Sizhuk A.S., Yezhov S.M.* Derivation of a Model Hamiltonian in the "Short Time Scale" Limit 670

Nonlinear Processes

- Gerasimchuk I.V., Gorbach P.K., Dovhopolyi P.P.* Localized States in a Nonlinear Medium Containing a Plane Defect Layer with Nonlinear Properties 678

Chronicle, Bibliographic Data, and Personalia

- Gennadii Fedorovich Filippov (to the 80th Anniversary of His Birthday) 684