

## CONTENTS

### Optics, Atoms and Molecules

*Zavilopulo A., Shpenik O.* Electron-Impact Mass Spectrometry of PTCDA Molecules in the Gas Phase ..... 3

### General Physics

*Majeed F.A., Iraq Hillah, Mahdi F.A.* Quantum Mechanical Calculations of a Fusion Reaction for Some Selected Halo Systems ..... 11

*Skurativskiy S.I., Skurativska I.A.* Solutions of the Model of Liquid and Gas Filtration in the Elastic Mode with Dynamic Filtration Law ..... 19

*Antia A.D., Okon I.B., Umoren E.B., Isonguyo C.N.* Relativistic Study of the Spinless Salpeter Equation with a Modified Hylleraas Potential ..... 27

### Physics of Liquids and Liquid Systems, Biophysics and Medical Physics

*Bulavin L.A., Zabashta Yu.F., Vergun L.Yu., Svechnikova O.S., Yefimenko A.S.* Interfacial Layers and the Shear Elasticity of the Collagen–Water System ..... 34

*Neimash V.B., Kupianskyi H.D., Olkhovyk I.V., Styopkin V.I., Lytvynchuk P.M., Povarchuk V.Yu., Roguts'kyi I.S., Furmanov Yu.A., Titarenko S.M.* Formation of Silver Nanoparticles in PVA-PEG Hydrogel under Electron Irradiation ..... 41

### Liquid Crystals and Polymers

*Lev B.I., Zagorodny A.G.* Collective Diffusion of Colloidal Particles in a Liquid Crystal ..... 48

### Semiconductors and Dielectrics

*Sai P.O., Safryuk-Romanenko N.V., But D.B., Cywiński G., Boltovets N.S., Brunkov P.N., Jmeric N.V., Ivanov S.V., Shynkarenko V.V.* Features of the Formation of Ohmic Contacts to n<sup>+</sup>-InN ..... 56

### Surface Physics

*Golovanova V.V., Nazarchuk B.V., Postnyi O.V., Rantala T.T., Tkachenko N.V., Golovanov V.V.* Photoreactions of Macrocyclic Dyes on (10 $\bar{1}$ 0) Wurtzite Surface – Interplay Between Conformation and Electronic Effects ..... 63

### Structure of Materials

*Kuyliev B.T., Jumaboev A.J., Khushvaktov Kh.A., Meyliev L.O., Absonov A.A., Hudoyberdiev B.G.* Calculated Spectra of Hydrocarbon Components of Natural Gas ..... 72

### Chronicle

*Tan'shyna A.* Titans of Ukraine. UPTI–Laboratory No. 1–KhPTI ..... 79