Contents

Atomic, Molecular & Chemical Physics
A.L. Kholmetskii and T. Yarman
Bound States of Light Hydrogen-Like Atoms and the Possibility of Cold Nuclear Transformations —— 565

Dynamical Systems & Nonlinear Phenomena
Jinbing Chen
Quasi-Periodic Solutions to the Mixed Kaup-Newell Hierarchy —— 579
Sezgin Kacar, Zhouchao Wei, Akif Akgul and Burak Aricioglu
A Novel 4D Chaotic System Based on Two Degrees of Freedom Nonlinear Mechanical System —— 595
Karthikeyan Rajagopal, Serdar Çiçek, Abdul Jalil M. Khalaf, Viet-Thanh Pham, Sajad Jafari, Anitha Karthikeyan and Prakash Duraisamy
A Novel Class of Chaotic Flows with Infinite Equilibriums and Their Application in Chaos-Based Communication Design Using DCSK —— 609

Quantum Theory
Konstantin G. Zloshchastiev
On the Dynamical Nature of Nonlinear Coupling of Logarithmic Quantum Wave Equation, Everett-Hirschman Entropy and Temperature —— 619

Hydrodynamics
M. Devakar, Ankush Raje and Shubham Hande
Unsteady Flow of Couple Stress Fluid Sandwiched Between Newtonian Fluids Through a Channel —— 629
Eduard Marušić-Paloka and Igor Pažanin
On the Viscous Flow Through a Long Pipe With Non-Constant Pressure Boundary Condition —— 639

Solid State Physics & Materials Science
Amjad Khan, M. Sajjad, G. Murtaza and A. Laref
Anion-Cation Replacement Effect on the Structural and Optoelectronic Properties of the LiMX2 (M = Al, Ga, In; X = S, Se, Te) Compounds: A First Principles Study —— 645
Yang Mei, Hong-Gang Liu and Wen-Chen Zheng
Thermal Shifts and Electron-Phonon Coupling Parameters for the Three Luminescence Lines of 5D_J → 7F_J in SrFCl:Sm2+ Crystal —— 657
Chenyang Zhao, Qun Wei, Meiguang Zhang, Haiyan Yan, Xinchao Yang, Yingjiao Zhou, Bing Wei and Jianli Ma
Pressure and Strain Effects on the Structural, Electronic, and Optical Properties of Kq Phosphorus —— 661