

CONTENTS

Main Session

| | |
|--|----|
| Charles Campbell at Sixty-Five: A Tribute to Innovation and Enduring Dedication <i>J. W. Clark</i> | 3 |
| Many-Boson Dynamic Correlations <i>C. E. Campbell and E. Krotscheck</i> | 8 |
| An Efficient Density Functional Algorithm in a Strong Magnetic Field <i>S. Janecek and E. Krotscheck</i> | 15 |
| Strongly Correlated Bosons at Nonzero Temperatures <i>K. A. Gernoth, M. Serhan and M. L. Ristig</i> | 27 |
| Dynamic Structure Function of Quantum Bose Systems; Condensate Fraction and Momentum Distribution <i>M. Saarela, F. Mazzanti and V. Apaja</i> | 39 |
| Helium in Pores and Irregular Surfaces <i>E. S. Hernández, A. Hernando, R. Mayol and M. Pi</i> | 50 |

Condensed Matter

| | |
|---|----|
| Collective Modes of Trapped Interacting Bosons <i>G. Gnanapragasam and M. P. Das</i> | 61 |
| p -Wave Pairing in Fermi Systems with Unequal Population Near Feshbach Resonance <i>K. F. Quader, R. Liao and F. Popescu</i> | 70 |
| Intriguing Role of Hole-Cooper-Pairs in Superconductors and Superfluids <i>M. Grether, M. de Llano, S. Ramírez and O. Rojo</i> | 79 |
| Superfluid to Bose Metal Transition in Systems with Resonant Pairing <i>J. Ranninger</i> | 91 |
| DC Resistivity of Charged Cooper Pairs in a Simple Boson-Fermion Model of Superconductors <i>T. A. Mamedov and M. de Llano</i> | 98 |

| | |
|--|-----|
| Ground State Energy of Bose-Einstein Condensation in a Disordered System <i>V. Sa-Yakanit and W. Lim</i> | 110 |
| Implications of Relativistic Configurations and Band Structures in the Physics of Bio-Molecules and Solids <i>M. Fhokrul Islam, H. G. Bohr and F. B. Malik</i> | 119 |
| The Sawtooth Chain: From Heisenberg Spins to Hubbard Electrons <i>J. Richter, O. Derzhko and A. Honecker</i> | 130 |
| Magnetoresistance in Copper <i>S. Fujita, N. Demez and J.-H. Kim</i> | 146 |
| Calculation and Interpretation of Surface-Plasmon-Polariton Features in the Reflectivity of Metallic Nanowire Arrays <i>P. Scholz, S. Schwieger, P. Vasa and E. Runge</i> | 154 |
| The Surprising Phenomenon of Level Merging in Finite Fermi Systems <i>J. W. Clark, V. A. Khodel, H. Li and M. V. Zverev</i> | 164 |
| The Effective Mass of a Charged Carrier in a Nonpolar Liquid: Applications to Superfluid Helium <i>A. Varlamov, I. Chikina and V. Shikin</i> | 176 |
| Dependence of Non-Abelian Matrix Berry Phase of a Semiconductor Quantum Dot on Geometric Properties of Adiabatic Path <i>S. C. Kim, N. Y. Hwang, P. S. Park, Y. J. Kim, C. J. Lee and S.-R. E. Yang</i> | 183 |
| Physics of the Mind: Opinion Dynamics and Decision Making Processes Based on a Binary Network Model <i>F. V. Kusmartsev and K. E. Kürten</i> | 194 |
| Nanolayered Max Phases From <i>ab initio</i> Calculations <i>W. Luo, C. M. Fang and R. Ahuja</i> | 207 |
| Effect of Disorder on the interacting Fermi Gases in a One-Dimensional Optical Lattice <i>X. Gao, M. Polini, M. P. Tosi and B. Tanatar</i> | 212 |
| A New Look at Super Heavy Nuclei <i>G. S. Anagnostatos</i> | 223 |
| Asymmetric Nuclear Matter: A Variational Approach <i>S. Sarangi, P. K. Panda, S. K. Sahu and L. Maharana</i> | 236 |

| | |
|--|-----|
| Progress in the Description of Nuclear Physics From Lattice QCD <i>A. S. B. Tariq</i> | 250 |
| Dilute Alpha-Particle Condensation in ^{12}C and ^{16}O <i>T. Yamada, Y. Funaki, H. Horiuchi, A. Tohsaki, G. Röpke and P. Schuck</i> | 257 |
| Jaynes-Cummings Model as a Case Study for the Derivation of Time-Dependent Schrödinger Equation <i>S. Khemmani and V. Sa-Yakanit</i> | 269 |
| Tunneling and Hopping Between Domains in the Metal-Insulator Transition in Two-Dimensions <i>D. Neilson and A. Hamilton</i> | 277 |
| Birkhoff Theorem and Ergometer: Meeting of Two Cultures <i>M. H. Lee</i> | 284 |
| Towards Ballistic Transport in Graphene <i>X. Du, I. Skachko and E. Y. Andrei</i> | 291 |
| Empirical Aspects of Statistical Mechanics' Axiomatics <i>A. Plastino and E. M. F. Curado</i> | 301 |
| Ferromagnetism in Doped Semiconductors Without Magnetic Ions <i>R. N. Bhatt and E. Nielsen</i> | 307 |
| Kidney-Boojum-Like Solutions and Exact Shape Equation of Solid-Like Domains in Lipid Monolayer <i>H. Tong, F. Liu, M. Iwamoto and Z.-C. Ou-Yang</i> | 319 |
| Excited State Processes in Photosynthesis Molecules <i>H. Bohr, P. Greisen and B. Malic</i> | 329 |
| Optical and Transport Properties in Dense Plasmas Collision Frequency from Bulk to Cluster <i>H. Reinholz, T. Raitza, G. Röpke and I. V. Morozov</i> | 339 |
| On the N -Representability and Universality of $F[\rho]$ in the Hohenberg-Kohn-Sham Version of Density Functional Theory <i>E. V. Ludeña, F. Illas and A. Ramirez-Solis</i> | 354 |
| Dynamic Pair Excitation in Aluminum <i>H. M. Böhm, R. Holler, E. Krotscheck and M. Panholzer</i> | 367 |
| On Time Dependent DFT With SIC <i>J. Messud, P. M. Dinh, E. Suraud and P.-G. Reinhard</i> | 378 |

| | |
|--|-----|
| Dynamical Phase Transitions in Opinion Networks: Coexistence of Opportunists and Contrarians <i>K. E. Kürten</i> | 386 |
| Probing the Equation of State of Nuclear Matter in the Nuclear Rainbow Scattering <i>D. T. Khoa</i> | 396 |
| Non-Monotonic Alpha- and ${}^6\text{Li}$ -Potentials from Energy Density Functional Formalism <i>S. Hossain, A. K. Basak, M. A. Uddin, M. N. A. Abdullah, I. Reichstein and F. B. Malik</i> | 409 |
| Resonances and Angular Distribution in α Decay <i>F. F. Karpeshin</i> | 421 |
| Giant Dielectric Behavior of $\text{BaFe}_{0.5}\text{Nb}_{0.5}\text{O}_3$ Perovskite Ceramic <i>U. Intatha, S. Eitssayeam and T. Tunkasiri</i> | 429 |
| Structural and Piezoelectric Properties of $(1 - x)\text{PZT-xBFN}$ ($x = 0.1 - 0.2$) Solid Solution <i>K. Sutjarittangtham, S. Eitssayeam, K. Pengpat, G. Rujijanagul, T. Tunkasiri, G. Satittada and U. Intatha</i> | 436 |
| Effects of Heat Treatment on Spin Hamiltonian Parameters of Cr^{3+} Ions in Natural Pink Sapphire <i>T. Kittiauchawal, P. Limsuwan, S. Eitssayeam and T. Tunkasiri</i> | 442 |
| The Spin Hamiltonian Parameters Calculation of ${}^{14}\text{N}$ and ${}^{15}\text{N}$ in Natural Type I Diamond <i>C. Kedkaew, P. Limsuwan, K. Thongcham and S. Meejoo</i> | 452 |
| Low Sintering Temperature of Lead Magnesium Niobate-Lead Titanate (0.9PMN–0.1PT) by Adding Oxide Additives <i>N. Pisitpipathsin, K. Pengpat, S. Eitssayeam, T. Tunkasiri, S. Sirisoonthorn, S. Budchan and U. Intatha</i> | 461 |
| Quantum Brownian and the Constrained Path Integral <i>S. Boonchui, V. Sa-Yakanit and P. Palotaidamkerng</i> | 470 |
| Author Index | 477 |