

List of Publication

1. Pratik P Ray, **Sankarsan Tarai**, B. Mishra, S. K. Tripathy, "Cosmological models with *Big rip and Pseudo rip Scenarios in extended theory of gravity*", **Fortschr. Phys.**, **69(10)**, **2100086 (2021)**. Impact factor: 6.099
2. **Sankarsan Tarai**, Pratik P Ray, B. Mishra, S. K. Tripathy, "Viscous fluid accelerating model in modified gravity", arXiv:2102.0905v1[gr-qc], 2021(accepted, **Int. J. Geom. Methods Mod. Phys**). Impact factor: 1.874

Manuscript under review

- Y. Shaikh, **Sankarsan Tarai**, S.K. Tripathy, B. Mishra, "Bouncing cosmological model with general relativistic hydrodynamics in extended gravity" (Under Review in **Physica Scripta**).
 - **Sankarsan Tarai**, Jagdish Kumar, "Dynamical features of anisotropic cosmological models with exponential function of curvature in modified gravity" (Under review in **Universe**)
1. Subhasmita Mishra, Nimmala Narendra, Prafulla Kumar Panda, **Nirakar Sahoo**, "Scalar Dark Matter and Radiative Dirac Neutrino Mass in an Extended $U(1)_{B-L}$ Model", arXiv: 2112.12569. Under review in **Nucl.Phys.B**.
 2. Bibhabasu De, Debottam Das, Manimala Mitra, **Nirakar Sahoo**, "Magnetic Moments of Leptons, Charged Lepton Flavor Violations and Dark Matter Phenomenology of a minimal Radiative Dirac Neutrino Mass Model", arXiv:2106.00979. Under review in **Phys.Rev.D**.
 3. Ujjal Kumar Dey, Tapoja Jha, Ananya Mukherjee, **Nirakar Sahoo**, "Leptogenesis in an Extended Seesaw Model with $U(1)_{B-L}$ symmetry", arXiv: 2102.04494. Under review in **Nucl.Phys.B**.

2016 -2017

Publications in Peer Reviewed Journals:

1. Accretion of radiation and rotating Primordial black holes, **Swapna Mahapatra** and Bibekananda Nayak, JETP, 122, no. 2, 243-247 (2016)
2. A comparative study of 2d Ising model at different boundary conditions using Cellular Automata, Jahangir Mohammed and **Swapna Mahapatra**, e-Print arXiv: 1601.00518 , p1-19 (2016)

3. QMC approach based on the Bogoliubov independent quark model of the nucleon
Henrik Bohr, Steven A. Moszkowski, **Prafulla K. Panda**, Constanca Providencia and Joao da Providencia, Int J Mod Phys E24, 1650007 (2016)
4. Thickness effect on nano-multilayered Sb/As₂S₃ chalcogenide **Ramakanta Naik**,
Advanced Materials Letters, 7(10), 861 (2016)
5. Effect of laser irradiation on the optical properties of As₄₀Se₅₅Sb₅ thin films
Ramakanta Naik, Tribikram Panda, R. Ganesan, Adv. Sci. Lett. 22, 294 (2016)
6. Generalization of SUSY quantum mechanics for PT symmetric systems.” Biswanath
Rath, Asiri Nanayakkara, P.Mallick and **P.K. Samal**, Accepted in Proceedings of the
National Academy of Sciences, India Section A: Physical Sciences, Springer
7. Thickness dependent ferromagnetism in thermally decomposed NiO thin films, Journal
of Magnetism and Magnetic Materials, Patta Ravikumar, **Bhagaban Kisan** and A.
Perumal, **418** (2016) 86-91.
8. Oxygen vacancy mediated enhanced photo-absorption from ZnO(0001) nanostructures
fabricated by atom beam sputtering. Vanaraj Solanki, Shalik R. Joshi, Indrani Mishra, D.
Kabiraj, **N. C. Mishra**, D. K. Avasthi and Shikha Varma. Journal of Applied Physics 120,
054303 (2016)
10. Annealing Temperature Dependent Structural and Optical Properties of
SnO₂ Nanoparticles, Sumit Kumar Behera, Urmishree Routray, Jyoshnarani
Mohapatra, Priyadarshini Dash, G. K. Dash, D. K. Mishra, **N. C. Mishra**, Advanced Science
Letters, 22, 2, 392-394(3) (2016)
11. Electrical and Magnetoelectric Properties of Ni–Co Doped BiFeO₃ Ceramics, M. R.
Biswal, J. Nanda, **N. C. Mishra**, S. Anwar, Advanced Science Letters, 22, 2, 363-
366(4) (2016)
12. Measurement of the decay $B \rightarrow D/\nu_l$ in fully reconstructed events and determination of
the Cabibbo-Kobayashi-Maskawa matrix element $|V_{cb}|$, R. Glattauer, Subhashree
Mohanty et al. (Belle Collaboration), Phys. Rev. D 93, 032006 (2016).
13. Study of $B^0 \rightarrow \rho^+ \rho^-$ decays and implications for the CKM angle φ_2 , P. Vanhoefer,

- Subhashree Mohanty et al. (Belle Collaboration), Phys. Rev. D 93, 032010 (2016).
14. Observation of the decay $B_s^0 \rightarrow K^0 K^0\text{-bar}$, B.Pal, Subhashree Mohanty et al. (Belle Collaboration), Phys. Rev. Lett. 116, 161801 (2016).
15. Inclusive and Exclusive measurements of B decays to χ_{c1} and χ_{c2} at Belle, V. Bhardwaj, Subhashree Mohanty et al. (Belle Collaboration), Phys. Rev. D 93, 052016
16. Search for the rare decay $D^0 \rightarrow \gamma\gamma$ at Belle, N.K.Nisar, Subhashree Mohanty et al. (Belle Collaboration), Phys. Rev. D 93, 051102(R) 2016.
17. First Observation of the decay $B^0 \rightarrow \psi(2S) \pi^0$, V. Chobanova, Subhashree Mohanty et al. (Belle Collaboration), Phys. Rev. D 93, 031101(R) (2016).

2016-17

Publications in Conference Proceedings:

1. *Optical properties change in Te diffused As₅₀Se₅₀ chalcogenide thin film*
Ramakanta Naik, M. Behera, R. Panda, N.C. Mishra
AIP Conference Proceedings, 1731, 080003 (2016)
2. Optical property modification by Sb addition into As₄₀Se₆₀ alloy
Ramakanta Naik, Bibekananda Das
Orissa Journal of Physics, 23(1), 49 (2016)
3. Influence of Bi addition on the optical properties of As₄₀Se₆₀ thin films.
M. Behera, R. Panda, **N. C. Mishra, Ramakanta Naik**
Accepted- Advanced Materials Proceedings, (2016)
4. Effect of thermal annealing on the structural, optical and microstructural properties of AgInSe₂ thin films.
R. Panda, **Ramakanta Naik**, U.P.Singh, **N.C. Mishra**
Advanced Materials Proceedings 1(1) 109 (2016)
5. A simple technique for gamma ray and cosmic ray spectroscopy using plastic scintillator” Akhilesh P. Nandan, Sharmili Rudra, Himangshu Neog, S. Biswas,

S. Mahapatra, B. Mohanty, **P. K. Samal**, *Instruments and Methods in Physics Research Section A*, Vol 824 11, 606 (2016)

Book Authored :

1. "Cosmology with Cosmic Microwave Background Radiation", ISBN-978-3-659-78424-8, Lap-Lambert Academic Publishing, Germany, **Pramoda Kumar Samal**, 2015

2017-18

1. **Shesansu Sekhar Pal**, Thermodynamics of Einstein-DBI System, arXiv.1712.09249
2. **Swapna Mahapatra**, Physics potential of the ICAL detector at India based neutrino observatory (INO), ICAL collaboration, *Pramana*, 88, no. 5, 79 (2017)
3. **Swapna Mahapatra**, Exact results for the STU model (with G.L.Cardoso and B. de Wit) (to appear)
4. Neutron star matter with Delta isobars in a relativistic quark model H S Sahoo, G Mitra, R N Mishra, **P K Panda**, and Bao-An Li (Paper submitted for publication)
5. Hadron-Quark phase transition in low mass neutron stars in a Modified Quark Meson Coupling model G Mitra, H S Sahoo, R N Mishra, **P K Panda** *Orissa J. Physics* (2018)
6. Pranati K. Rath, **Pramoda Kumar Samal**, Srikanta Panda, D. Mishra, Pavan Aluri, Testing statistical isotropy in Cosmic Microwave Background Polarization Maps, *Monthly Notices of the Royal Astronomical Society* Volume 475, Issue 4, 2018, Pages 4357-4366
- Jagdish Kumar**, Modeling the complexity of acoustic emission during intermittent plastic deformation, *Phys. Rev. E*, **97**, 012201 (2018)
8. Laser induced optical properties change by photo diffusion of Sb into As_2Se_3 chalcogenide thin films Prabhudutta Pradhan, **Ramakanta Naik**, N. Das, Ajit Kumar Panda **Optics and Laser Technology**, **96**, 158 (2017)
9. Effect of Bi concentration on the structural and optical properties of $Bi_xGe_{30}Se_{70-x}$ chalcogenide thin films. Adyasha Aparimita, M. Behera, C. Sripan, R. Ganesan, S. Jena, **Ramakanta Naik** *Journal of Alloys and Compounds*, 739, 997-1004, 2018
10. Photo and thermal induced properties change in Ag diffusion into Ag/As_2Se_3 thin films Adyasha Aparimita, C. Sripan, R. Ganesan, **Ramakanta Naik** *Applied Physics A*, **124**, 267-276 (2018)
11. Effect of Ge addition on the optical properties of $As_{40}Se_{50}Ge_{10}$ thin films: An investigation through FTIR and Raman spectroscopy **Ramakanta Naik**, Jagnaseni Pradhan,

S.Chinnaiyah, R. Ganesan **Phase Transition** Published online 13 January 2018
doi.org/10.1080/01411594.2018.1424337

12. Band gap tuning in $As_{40}Se_{53}Sb_{07}$ thin films by 532 nm laser irradiation: An optical investigation by spectroscopic techniques. Prabhudutta Pradhan, **Ramakanta Naik**, N. Das, Ajit Kumar Panda **Optical Materials**, **75**, 699-709 (2018)

1. Effects of strangeness on the Mass-Radius of neutron stars in MQMC H. S. Sahoo, R.N. Mishra, P.K. Panda, and N. Barik Proceedings of the DAE Symp. on Nucl. Phys. 62 (2017) 714

2. Finite nuclei based on quark meson coupling model S. Karan, P. K. Panda, A. Rabhi, and R. N. Mishra Proceedings of the DAE Symp. on Nucl. Phys. 62 (2017) 260

3. Optical constants change in $As_{40}Se_{60}$ and $As_{50}Se_{50}$: A comparative study by FTIR and XPS. **Ramakanta Naik**, C. Sripan, R. Ganesan **Advanced Materials Proceedings 2017 2(4)** **280-285**

4. Optical Properties Study in $As_{50}Se_{50}$ and $As_{50}Se_{40}Te_{10}$ Chalcogenide Thin Films. M. Behera, Parbati Naik, R. Panda, **Ramakanta Naik**, **AIP Conference Proceeding**, **1832**, 070009 (2017)

5. Optical Properties Change in Sb/As_2Se_3 Bilayer Thin Film. Prabhudutta Pradhan, **Ramakanta Naik**, N. Das, A.K.Panda **AIP Conference Proceeding**, **1832**, 080001 (2017)

6. Thermal Annealing Induced Modifications on the Structural and Optical Properties of $AgInSe_2$ Thin Film R. Panda, M.Panda, **Ramakanta Naik**, U. P. Singh, N. C. Mishra **AIP Conference Proceeding**, **1832**, 080042 (2017).

7. P.K. Panda, C. Providencia, S.A. Moszkowski, H. Bohr and J. da Providencia: "Hyperonic stars within the Bogoliubov quark meson model for nuclear matter ", Int. J. Mod. Phys. E28 (2019) 1950034. 2018-19

Research Publications (2019- 2022)

1. M. Sharma, D. Mishra and **J. Kumar**, First-principles study of the structural and electronic properties of bulk ZnS and small Zn_nSn nanoclusters in the framework of DFT+U method, Physical Review B, 100, 045151, (2019).
2. S. C. Sahu, A. K. Pani, M. R. Mohanta and **J. Kumar**, Tree species diversity, distribution and soil nutrient status along altitudinal gradients in Saptasajya hill range, Eastern Ghats, India, Taiwan, International Journal of Life Science, 64(1), 28 (2019).
3. Thermal annealing induced structural, optical and electrical properties change in $As_{40}Se_{60-x}Bi_x$ chalcogenide thin films, M.Behera, N.C.Mishra, **R.Naik**, C.Sripan, R.Ganesan, **AIP Advances**, **9**, 095065 (2019) ISSN: 2158-3226

4. Structural, linear and non-linear optical properties of annealed and irradiated Ag/Se bilayer thin films for optoelectronic applications, **Ramakanta Naik**, Adyasha Aparimita, A. Behera, C. Sripan, R. Ganesan *Optik*, 194, 162894 (2019)
5. Annealing induced transformations in structural and optical properties of $\text{Ge}_{30}\text{Se}_{70-x}\text{Bi}_x$ thin films Adyasha Aparimita, C. Sripan, R. Ganesan, **Ramakanta Naik**, *Phase Transitions*, 92 (8), 683-698 (2019).
6. Influence of Bi content on linear and nonlinear optical properties of $\text{As}_{40}\text{Se}_{60-x}\text{Bi}_x$ chalcogenide thin films, Mukta Behera, C. Sripan, R. Ganesan, N. C. Mishra, **Ramakanta Naik**, *Current Applied Physics*, 19(8), 884-893 (2019).
7. Structural and Morphological Modifications of AgInSe_2 and Ag_2Se_3 composite thin films on 140 MeV Ni ion irradiation, R. Panda, H. Rath, B. N. Dash, K. Asokan, U.P. Singh, **Ramakanta Naik**, **N.C.Mishra** *Applied Surface Science*, 479, 997-1005 (2019).
8. **P.K. Panda**, C. Providencia, S.A. Moszkowski, H. Bohr and J. da Providencia: "Hyperonic stars within the Bogoliubov quark meson model for nuclear matter ", *Int. J. Mod. Phys. E28* (2019) 1950034. 2018-19.
9. H.S. Sahoo, R.N. Mishra, D.K Mohanty, **P.K. Panda** and N. Barik: "Neutron star matter with strange interactions within constraints by GW170817 in a relativistic quark model", *Phys. Rev. C* 99 (2019) 055803.
10. Photo and thermal induced Bi_2Se_3 formation from Bi/GeSe₂ hetero junction layer for topological insulator, **Adyasha Aparimita**, C. Sripan, R. Ganesan, **Ramakanta Naik** *Optical Materials*, 89, 157-163 (2019).
11. Thermal annealing induced evolution of Bi_3Se_2 topological phase from Bi/As₂Se₃ thin film. Mukta Behera, **N.C.Mishra**, **Ramakanta Naik**, *Physica B*, 560, 51-59 (2019).
12. Quantification of nonlinear absorption in ternary As-Sb-Se chalcogenide glasses P. Pradhan, P. Khan, A.R. Aswin, K.V. Adarsh, **R. Naik**, **N. Das**, **A.K. Panda**, *Journal of Applied Physics*, 125 (1), 015105-5 (2019).
13. Switching of linear and nonlinear optical parameters in $\text{As}_{35}\text{Se}_{65}$ thin films upon annealing at both above and below T_g , P. Priyadarshini, D. Sahoo, A. Aparimita, D. Alagarasan, S. Vardharaj perumal, R. Ganesan, **R. Naik**, *Applied Physics A*, 126 (11) 1-14 (2020)
14. Role of annealing temperature on optimizing the linear and nonlinear optical properties of $\text{As}_{40}\text{Se}_{50}\text{Ge}_{10}$ films, D. Sahoo, Priyadarshini, **A. Aparimita**, D. Alagarasan, S. Vardharajperumal, R. Ganesan, **R. Naik**, *RSC Advances*, 10, 26675-26685 (2020)

15. Influence of 120 MeV Ag Ion Irradiation on the structural, optical and electronic properties of $As_{40}Se_{60-x}Bi_x$ thin films, **Mukta Behera, N.C. Mishra, S.A.Khan, Ramakanta Naik**, Journal of Non-Crystalline Solids, 444 (2020) 120191.
16. Role of thermal and photo annealing on nonlinear optical response of $Ge_{30}Se_{55}Bi_{15}$ thin films, A. Aparimita, P. Khan, A. R. Aswin, K.V. Adarsh, R. Naik, Journal of Applied Physics, 127 (7) , 075102 (2020).
17. Influence of low energy Ag ion irradiation on microstructural and optical properties of Bi/GeSe₂bilayer thin film, Adyasha Aparimita, Satya P. Sahoo, C.Sripan, R.Ganesan, **Ramakanta Naik**, Applied Physics A, 126, 203 (2020).
18. Photo and thermally induced properties change in Bi/Ag/Se trilayer thin film, **Ramakanta Naik**, Alok Kumar Rout, A. Aparimita, C.Sripan, R. Ganesan, Phase Transitions, 92(1) 65-78 (2019)
19. Linear and nonlinear optical properties change in Ag/GeS heterostructure thin films by thermal annealing and laser irradiation, **Ramakanta Naik***, A. Aparimita, D. Alagarasan, S. Vardharajperumal, R. Ganesan, Optical and Quantum Electronics, 52, 136 (2020)
20. Laser induced photo bleaching in Bi doped $Ge_{30}Se_{70}$ amorphous thin film, Adyasha Aparimita, C. Sripan, R. Ganesan, **Ramakanta Naik**, Applied Physics A, 126, 5 (2020) 5, 0947-8396
21. Laser irradiation induced structural, microstructural and optical properties change in Bi doped $As_{40}Se_{60}$ thin films, M.Behera, N.C.Mishra, R.Naik, Phase Transitions,93,158-167 (2020) .
22. Bismuth thickness dependent structural and electronic properties of Bi/As₂Se₃ bilayer thin films, Mukta Behera,N.C.Mishra, **Ramakanta Naik**, Indian Journal of Physics 94(4), 469-475 (2020).
23. Structural, vibrational and magnetic properties of NiO-(Mg,Ti) powders: The effect of reduction reaction, A. M. Padhan, **B. Kisan** and A. Perumal, Journal of Magnetism and Magnetic materials, 494 (2020) 165784.
24. Assessment of chromium phytotoxicity, phytoremediation and tolerance potential of Sesbania sesban and Brachiaria mutica grown on chromite mine overburden dumps and garden soil, Deepak Kumar Patra, Chinmay Pradhan, **Jagadish Kumar**, Hemanta Kumar Patra, *Chemosphere*, **252**, 126553 (2020).
25. Experimental and first-principle study of defects induced electronic and magnetic properties of ZnO nanocrystals, **Bhagaban Kisan, Jagadish Kumar** and Perumal Alagarsamy, *Journal of Physics and Chemistry of Solids*, **146**, 109580 (2020).
26. Epidemiological study of novel coronavirus (COVID-19). **Jagadish Kumar** and K.P.S.S. Hembram, arXiv preprint, *arXiv:2003.11376*, <https://arxiv.org/abs/2003.11376> (2020).
27. **Sekhar Pal**, Thermal and thermoelectric conductivity of Einstein DBI system ,European Physical Journal C. 80 (2020) 225.
28. Exact result for an STU model, G. L. Cardoso, B. de Wit and **Swapna Mohapatra** , Journal Of High Energy Physics (JHEP) 02, 127, (2020)

29. H.S. Sahoo, Supriya Karan R.N. Mishra and **P.K. Panda**: "Symmetry energy dilemma within a relativistic quark model ", Phys. Rev. C 104 (2021) 055805.
30. K.P.S.S. Hembram and **Jagadish Kumar**, Epidemiological study of novel coronavirus (COVID-19): macroscopic and microscopic analysis, International Journal of Community Medicine and Public Health, 8(3), 1369 (2021).
31. **Bhagaban Kisan, Jagadish Kumar** and Perumal Alagarsamy, Room temperature ferromagnetism in Zn-doped NiO nanoparticles: an experimental and DFT+U approach, Journal of Alloys and Compounds, 868, 159176 (2021).
32. **Bhagaban Kisan, Jagadish Kumar**, Aneeta Manjari Padhan, Perumal Alagarsamy and Dobbidi Pamu, Size and strain induced phase formation and ferromagnetism in reduced TiO₂ powders, Journal of Physics and Chemistry of Solids, 154, 110058 (2021).
33. Triboelectrification based on NiO-Mg magnetic nanocomposite: Synthesis, device fabrication, and energy harvesting performance, Aneeta Manjari Padhan, Sugato Hajra, Sanjib Nayak, **Jagadish Kumar**, Manisha Sahu, Hoe Joon Kim, Perumal Alagarsamy, Nano Energy, 91, 106662 (2022),
34. Interface properties of CsPbBr₃/CsPbI₃ perovskite heterostructure for solar cell, **Jagadish Kumar** and K.P.S.S. Hembram, Physica B: Condensed Matter, 625, 413472 (2022).
35. Comparative Study of ZnO Nanomaterials Synthesized by Green and Electrospinning Methods, Subhodeep Barman, **Jagadish Kumar**, Arnab Kumar Das, Suranjan Sikdar, Abhijit Biswas, Srinivasan and Rahul Das, Journal of Nano Research, 72, 81 (2022).
36. Effect of dopants on magnetic and magnetoimpedance properties of rapidly solidified FeCoBM (M= Al, Cu and Si) ribbons, SK Manna, **B Kisan**, PK Panda, TK Nath , Journal of Magnetism and Magnetic Materials 544, 168647.
37. Effect of Cerium on Structural and Dielectric Properties of Modified BiFeO₃-PbTiO₃ Ceramics for Photovoltaic Applications, SK Parida, MK Swain, RK Bhuyan, **B Kisan**, RNP Choudhary, Journal of Electronic Materials 50 (8), 4685-4695.
38. R. Panda, **N. C. Mishra** and R. Naik, The impact of fluence dependent 120 MeV Ag swift heavy ion irradiation on the changes in structural, electronic, and optical properties of AgInSe₂ nano-crystalline thin films for optoelectronic applications, 2021, RSC Advances, 11(42):26218-26227.
39. Pratik P Ray, **Sankarsan Tarai**, B. Mishra, S. K. Tripathy:Cosmological models with Big rip and Pseudo rip Scenarios in extended theory of gravity: Fortschr. Phys., 69(10), 2100086 (2021). Impact factor: 6.099
40. **Sankarsan Tarai**, Pratik P Ray, B. Mishra, S. K. Tripathy: Effect of bulk viscosity in cosmic acceleration, arXiv:2102.0905v1[gr-qc],2021(accepted for publication, IJGMMP). Impact factor: 1.874

