

Journals

1. External frequency tuner for 4-rod RFQ in the VECC RIB facility  
Dipta Pratim Dutta, Vaishali Naik, Hemendra Kumar Pandey, Siddhartha Dechoudhury, Arup Bandyopadhyay *Journal of Instrumentation*. **21** (2026) 03045.
2. Structural Incommensurability Drives Ultralow Lattice Thermal Conductivity in Misfit Layered (BiSe)<sub>1.23</sub>CrSe<sub>2</sub>  
A. Kumar B. M., S. Biswas, S. Jena, P. Negi, D. Sanyal, B. Sadhukhan and S. N. Guin *J of Mat. Chem. A*, (2026)
3. Oxygen Vacancy-Enriched Halogen-Modified Rare Earth Tantalate Nanocomposites Boost Photo-Sonocatalytic Degradation of Polycyclic Aromatic Hydrocarbon, Fluorene,  
N. P. Baruah, H. Buragohain, P. J. Medhi, R. C. Deka, Dirtha Sanyal, B. Choudhury A. Devi and D. Choudhury  
*Surf. & Interfaces*, **91** (2026) 109193.
4. Metastable Cubic Cu<sub>3</sub>SbS<sub>3</sub>: A Facile Solution-Phase Access to a Kinetic Polymorph  
R. Dhar, A. Kumar, P. Negi, S. Biswas, Dirtha Sanyal, S. N. Guin  
*Nanoscale* **18** (2026) 9689.
5. Harnessing Topological States for Enhanced Thermoelectricity in the half-Heusler compound FeMnTe  
M. Dey Sarkar, S. Ghosal, D. Jana and D. Sanyal  
*J of Phys. Chem. C* **130** (2026) 3560.
6. An ab-initio studies of the magnetic properties of transition metal ion doped GeO<sub>2</sub> monolayer  
J. A. Khan, S. Ghosh and D. Sanyal  
*Computational Condensed Matter* **46** (2026) e01237
7. Role of positional isomerism on A-site organic cation: structural variation driven photophysical and ferroelectric responses in centrosymmetric layered perovskites  
V. Singh, P. Moar, D. Sanyal, S. Barua and J. Dhar  
*Journal of Materials Chemistry C*, **130** (2026) 3560.
8. Preparation and characterization of ferromagnetic Cu doped ZnO  
M. Chakrabarti, A. Nayek, B. Haldar, S. Moshat and D. Sanyal  
*Current Applied Physics* **84** (2026) 75

9. Carbon Ion Engineering of Silicon Cathodes for Enhanced Photoelectrochemical Hydrogen Evolution, Sunaina, Sourav Mondal, Dulal Senapati, Goutam Pramanik, Prasanta Karmakar, *Langmuir* 42 (2026) 6227-6238
10. Establishing a relation between surface roughness and non-volatile resistive switching in VO<sub>2-x</sub> -based devices: A temperature dependent study, Koushik Mondal, Dip Manna, Pawan Kumar Ojha, Prasanta Karmakar, Supratic Chakraborty, *Journal of Alloys and Compounds* 1060 (2026) 187276.
11. Significant enhancement of photoluminescence and current density of graphene oxide film upon nitrogen ion implantation. Moupriya Mukherjee, Sudip Bhowmick, Tanmoy Chakraborty, Mitali Patra, Sajid Nawaz, Soumyaditya Sutradhar, Amit K. Chakraborty, Uday Deshpande, Prasanta Karmakar Joydeep Chowdhury, Goutam Pramanik, *Applied Surface Science* 728 (2026)166094.
12. Experimental observation of room temperature ferromagnetism in  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>  
A. K. Nayek, S. Moshat, D. Sanyal, and M. Chakrabarti  
*Phil. Mag.* (2025) 1-11.
13. H<sub>2</sub> adsorption over GeO<sub>2</sub> monolayer: a theoretical study  
J. A. Khan, S. Ghosh and D. Sanyal  
*Journal of Materials Science: Materials in Engineering* **20** (2025)
14. An ab initio study on the adsorption of hydrogen molecules over tin sulfide monolayer  
S. Ghosh, M. Dey Sarkar, P. Nath and D. Sanyal  
*Appl. Phys. A* **131** (2025) 1-13
15. Strain-induced half-metallic ferromagnetism and large anomalous Hall effect in Fe<sub>2</sub>CrGe  
M. D. Sarkar, P. Nath, D. Jana and D. Sanyal  
*Physical Chemistry Chemical Physics* **27** (2025) 22658
16. Tunable Anomalous Hall and Nernst Effects in Magnetic Weyl Semimetals Co<sub>2-x</sub>Cr<sub>x</sub>MnGe  
M. Dey Sarkar, A. Bose, A. Bandyopadhyay, D. Sanyal and D. Jana  
*J. of Phys.: Cond. Matt.* **37** (2025) 365702
17. Temperature dependent conversion from digital to analog resistive switching behavior of rf sputtered TiO<sub>2-x</sub> thin-film-based metal–oxide–semiconductor devices, Dip Manna, Koushik Mondal, Prasanta Karmakar, Supratic Chakraborty,  
*Phica B: Condensed Matter* **715** (2025) 417564.
18. A flexible design cross-coupled SIW band-pass filter with different path loads using mixed-coupling topology

- G K Mishra, H K Pandey, N P Pathak, *International Journal of RF and Microwave Computer-Aided Engineering*, (2026) 6647936,
19. G. K. Mishra, H. K. Pandey, N. P. Pathak, "A novel SIW band pass filter design by diagonal coupling Approach on single and multilayer model", *AEU - International Journal of Electronics and Communications*, 2025, 155916, ISSN 1434-8411.
  20. G.K. Mishra, H. K. Pandey, N.P. Pathak, "A Single-Layer Dual-Band SIW Filter on a Mixed Coupling Structure for 5G Applications" *IETE Journal of Research*, 2025
  21. Glassy Thermal Transport Triggers Ultra-High Thermoelectric Performance in GeTe  
D. Sarkar, S. Das, V. Taneja, M. Samanta, K. Jagadish, A. Das, M. Bhakar, S. Perumal, G. Sheet, Dirtha Sanyal, K. Pal, N. Ravishankar, U. V. Waghmare, and K. Biswas  
*Adv. Materials* 37 (2025) 2417561
  22. Low energy ion-beam mediated tailoring of structural, optical, and electrical properties of ITO films  
J Mukherjee, D Bhowmik, S Bhowmick, Prasanta Karmakar, S. Bhattacharjee  
*Surface & Interface* 59 (2025) 105973
  23. Role of Carbon Substitutional and Vacancy in Tailoring the H<sub>2</sub> Adsorption Energy over a Hexagonal Boron Nitride Monolayer: An ab-initio Study'  
S. Ghosh, P. Nath, S. Moshat and Dirtha Sanyal  
*J of Mat Science* 59 (2024) 10887
  24. Effect of dephasing on modulation transfer in potassium  
V Shukla, P Chakraborty and Ayan Ray  
*Appl. Physics B* 130 (2024)
  25. Effects of In<sub>2</sub>O<sub>3</sub> doping on the microstructure and electrical properties of ZnO–V<sub>2</sub>O<sub>5</sub> Nb<sub>2</sub>O<sub>5</sub> varistor ceramics  
Tapatee Kundu Roy  
*Current Applied Physics* 65 (2024) 32
  26. Surface Reconstruction Route for Increasingly Improved Photocatalytic H<sub>2</sub>O<sub>2</sub> Production Using Sr<sub>2</sub>Bi<sub>3</sub>Ta<sub>2</sub>O<sub>11</sub>Cl  
M. Banoo, A. K. Sah, R. S. Roy, K. Kaur, B. Kommula, Dirtha Sanyal, U. K. Gautam  
*Chem. Sci.* **15** (2024) 17049
  27. Bi Off-Centering in Centrosymmetric BiOBr Leading to Ultrahigh Bifunctional Piezocatalytic Fuel Generation Efficiencies in Seawater

- M. Banoo, K. Samanta, A. K. Sah, R. S. Roy, M. Bhakar, Dirtha Sanyal, D. G. Porob, K. Glazyrin, D. Topwal, G. Sheet, D. Ghosh, U. K. Gautam  
*Adv. Funct. Mater.* **34** (2024) 2411462
28. Investigating the Effect of Lead Substitution on the Optical, Electrical, and Photoresponse Properties of Quasi-2D Double Perovskites  
 V. Singh, M. Das, K. Mondal, S. Barua, Dirtha Sanyal, P. P. Ray and J. Dhar  
*J of Phys. Chem. of Solids* **192** (2024) 112082
29. Radiative neutron capture reaction rates for stellar nucleosynthesis  
 V Singh, Debasis Bhowmick, D N Basu  
*Indian Journal of Physics*, **99** (2024) 1233
30. Re-examining the Lithium abundance problem in Big-Bang nucleosynthesis  
 V Singh, Debasis Bhowmick, D N Basu  
*Astroparticle Physics* **162** (2024) 102995
31. First-principles study of robust half-metallic ferromagnetism and electronic structure of the Heusler compounds  $\text{Co}_{2-x}\text{Cr}_x\text{MnGe}$   
 M. De Sarkar, S. Ghosh, Dirtha Sanyal and D. Jana,  
*Physica Scripta* **100** (2024) 015963
32. Adsorption and Evolution of  $\text{N}_2$  Molecules over ZnO Monolayer: A Combined DFT and Kinetic Monte-Carlo Insight  
 S. Ghosh, P. Nath, and Dirtha Sanyal  
*Adsorption* **30** (2024) 2255.
33. Development of an efficient UV absorber and reusable SERS chip by buried Ag ion implantation in Si substrate  
 S Bhowmick, B Satpati, D Chowdhury, Prasanta Karmakar  
*Current Applied Physics* **68** (2024) 267
34. Vacancy Controlled Nanoscale Cation Ordering Leads to High Thermoelectric Performance  
 R. Pathak, L. Xie, S. Das, T. Ghosh, A. Bhui, K. Dolui, Dirtha Sanyal, J. He and K. Biswas  
*Energy & Environmental Science* (2023).
35. Alteration and interrogation of ultra-thin layer of silicon by reactive molecular ion implantation,  
 Joy Mukherjee, Sudip Bhowmick, S. Karmakar, Dipak Bhowmik, B. Satpati, S. Hazra, and Prasanta Karmakar,  
*Appl. Surf. Sci.* (2023),

36. Silver ion beam formation and implantation on nano-pyramidal template for isolated nano-dot formation,  
Sudip Bhowmick, Joy Mukherjee, Vaishali Naik, and Prasanta Karmakar,  
*Vacuum* (2023)
37. Positron annihilation studies of methylammonium lead bromide perovskite  
S. Moshat, P. P. Ray, S. Sil, J. Dhar and D. Sanyal  
*Physica Scripta* **98** (2023) 035822
38. Magnetic properties of transition metal ion doped AgCuS: an ab-initio calculation  
S. Ghosh, S. Moshat and D Sanyal  
*Phil. Mag.* **103** (2023) 87.
39. Beam based diagnostic and four dimensional transverse emittance measurement using solenoid scan for 100 keV thermionic electron gun at VECC, Kolkata,  
S Dechoudhury, S Haque, Md Z Abdul Nasser, S Mukherjee, A K Jain, V Naik, *Journal of Instrumentation*, **17** T06003 (2022).
40. Development and testing of 37.8 MHz, 3.0 kW RF amplifier system for Radioactive Ion Beam facility at VECC Kolkata  
H.K. Pandey, A.K. Jain, T.K. Mandi and D.P. Dutta  
*JINST* **17** (2022) T09005
41. Theoretical and experimental studies of multi-port RF power feeding in rod-type radio frequency quadrupole (RFQ) linac  
H. K. Pandey, S. Dechoudhury and V. Naik  
*AIP Advances* **12** (2022) 085028
42. Characterization of ion-induced microstructural changes in oxygen irradiated Ti-6Al-4V  
Santu Dey, Argha Dutta, N. Gayathri, P. Mukherjee and Tapatee Kundu Roy  
*Radiation Effect and Defect in Solid*, **177** (2022) 972
43. Band gap engineering of the top layer of mica by organized defect formation  
J Mukherjee, M H Dalsaniya, S Bhowmick, D Bhowmik, Prafulla Kumar Jha, Prasanta Karmakar  
*Surfaces and Interfaces* **33**, (2022) 102283
44. Carbon ion beam induced chemical modification and nano-pyramid growth on Si surface  
Sudip Bhowmick, Joy Mukherjee, Manorama Ghosal, Prasanta Karmakar  
*Physica Scripta* **98** (2022) 015028

45. First-principles study of magnetic properties of the transition metal ion-doped methylammonium lead bromide  
S Moshat, H Luitel, D Sanyal  
*Int. J. of Modern Phys. B* (2022) 2250202
46. All-scale Hierarchical Nanostructures and Superior Valence Band Convergence Lead to Ultra-high Thermoelectric Performance in Cubic GeTe  
D. Sarkar, M. Samanta, T. Ghosh, K. Dolui, S. Das, K. Saurabh, D. Sanyal and K. Biswas  
*Energy & Environmental Science* **15** (2022) 4625.
47. First-principles study of magnetic properties of the cobalt doped silver copper sulfide  
S Moshat, S Ghosh and D Sanyal  
*Comp. Cond. Matter* **31** (2022) e00680
48. Effect of MeV ion induced heating on secondary electron emission from Si surface and estimation of local temperature, Subhash Ghose and Prasanta Karmakar, *Nucl. Inst. & Method B* **516** (2022) 1.
49. Spatially varying chemical phase formation on silicon nano ripple by low energy mixed ions bombardment, Joy Mukherjee, Dipak Bhowmik, Gourab Bhattacharyya, Biswarup Satpati and Prasanta Karmakar, *J. Phys.: Condens. Matter* **34** (2022) 135001.
50. Half-metallic ferromagnetism in molybdenum doped methylammonium lead halides (MAPbX<sub>3</sub>, X= Cl, Br, I) system: First-principles study; S. Moshat, H. Luitel and D. Sanyal; *Journal of Magnetism and Magnetic Materials* **519** (2021) 167463.
51. Defects Engineering on Ceria and C–C Coupling Reactions Using [Au<sub>11</sub>(PPh<sub>3</sub>)<sub>7</sub>I<sub>3</sub>] Nanocluster: A Combined Experimental and Theoretical Study; A. K. Das, S. Mukherjee, A. S. Nair, S. Bhandary, D. Chopra, D. Sanyal, B. Pathak and S. Mandal; *ACS nano* **14** (2021) 16681.
52. Optically sensitive isolated silver nano-dots development by broad ion implantation on nitrogen ion-induced pre-patterned silicon nano-templates, Sudip Bhowmick, Joy Mukherjee, Biswarup Satpati and Prasanta Karmakar, *Appl. Surf. Sci.* **578** (2021) 152079.

53. Investigation on chemical instability and optical absorption of ion bombarded Si surfaces, Joy Mukherjee, Dipak Bhowmik, and Prasanta Karmakar, *AIP Conf. Proc.* **2369** (2021) 020038.
54. Projectile mass dependent nano patterning and optical band gap tailoring of muscovite mica, *Radiation Physics and Chemistry*, Dipak Bhowmik, Joy Mukherjee, Prasanta Karmakar **187**,109568 (2021).
55. Study of magnetic nanowires of amorphous Co<sub>20</sub>Fe<sub>60</sub>B<sub>20</sub> prepared by oblique angle deposition on nanorippled substrate, K. Bukharia, P. Karmakar, P. Pandit and A. Gupta ; *Journal of Magnetism and Magnetic Materials* **529** (2021) 167842.
56. Nano pyramid array on Si by concurrent growth of parallel and perpendicular spatial wave and local angle dependent sputtering, Prasanta Karmakar, *Appl. Surf. Sci.* **552** (2021) 149517.
57. Enhanced stability and ferromagnetic property in transition metals co-doped rutile TiO<sub>2</sub>, S. Roy, H. Luitel and D. Sanyal; *Journal of Physics and Chemistry of Solids* **146** (2020) 109582.
58. Efficacy of radial matching section in enhancing RFQ cooler acceptance and optimization of its injection optics, S. Dechoudhury, P. Sing Babu and V. Naik, *Journal of Instrumentation* **15** (2020) P11022.
59. Mass distribution in 36.2 MeV alpha induced fission of <sup>232</sup>Th', D. Banerjee, T. N. Nag, R. Tripathi, S. K. Wasim Raja, S. Sodaye, P. K. Pujari, A. Chakrabarti, M. Bhattacharjee, L. K. Doddi and V. Naik, *Eur. Phys. J. A* **56** (2020) 201.
60. Highly Converged Valence Bands and Ultralow Lattice Thermal Conductivity for High Performance SnTe Thermoelectrics; D.Sarkar, T.Ghosh, A.Banik, S.Roychowdhury, D. Sanyal and K.Biswas; *Angewandte Chemie International Edition* **59** (2020) 11115.

61. Supported Planar Single and Multiple Bilayer Formation by DOPC Vesicle Rupture on Mica Substrate: A Mechanism as Revealed by Atomic Force Microscopy Study, A. Basu, P. Karmakar and S. Karmakar, *J. Membrane Biol.* 253 (2020) 205.
62. Ferromagnetic property of copper doped ZnO: A first-principles study, A.K.Nayek, H.Luitel, B.Haldar, D. Sanyal and M. Chakrabarti, *Computational Condensed Matter***23** (2020) e00455.
63. Defect induced room temperature ferromagnetism in methylammonium lead iodide perovskite, S. Sil, H. Luitel, J. Dhar, M. Chakrabarti, P. P. Ray, B. Bandyopadhyay and D. Sanyal, *Physics Letters A*384 (2020) 126278.
64. Elucidation of Inhomogeneous Heterojunction Performance of Al/Cu<sub>5</sub>FeS<sub>4</sub> Schottky Diode With a Gaussian Distribution of Barrier Heights, S. Sil, R. Jana, A. Biswas, D. Das, A. Dey, J. Datta, D.Sanyal and P. P. Ray, *IEEE Transactions on Electron Devices* **67** (2020) 2082.
65. Broadband Colossal Dielectric Constant in the Superionic Halide RbAg<sub>4</sub>I<sub>5</sub>: Role of Intercluster Ag<sup>+</sup> Diffusion, P.Acharyya, T.Ghosh, S.Matteppanavar, R. K.Biswas, P.Yanda, S. R. Varanasi, D. Sanyal, A. Sundaresan, S. K. Pati and K. Biswas, *The Journal of Physical Chemistry C* **124** (2020) 9802.
66. Alternating silicon oxy-nitride and silicon oxide stripe formation by nitric oxide (NO<sup>+</sup>) ion implantation, J. Mukherjee, D. Bhowmik, M. Mukherjee, B. Satpati, and P. Karmakar, *J. Appl. Phys.* **127** (2020) 145302.
67. Design of a gas-jet coupled ECR ion-source for ISOL type RIB facility, Mahuwa Bhattacharjee, Hemendra Kumar Pandey, Vaishali Naik, Alok Chakrabarti, *Nucl. Instrum. and Meth.* **959** (2020) 163572.
68. Design of a gas-jet coupled ECR ion-source for ISOL type RIB facility, M. Bhattacharjee, H. K. Pandey, V. Naik and A. Chakrabarti, *Nucl. Inst. & Method. A*, **959** (2020) 163572.

69. Measurement of quadrupolar assymetry in prototype rod type radio frequency quadrupole linac for protons, C. Das, S. Dechoudhury, T. Mandi, S. Roy, H. K. Pandey, V. Naik, A. Chakraborty, *Review of Scientific Instruments* **91** (2020) 033306.
70. Characterization of ion induced damage as a function of depth in proton irradiated pure Ti and Ti–6Al–4V, S. Dey, A. Dutta, P Mukherjee, N Gayathri, A. Dutta Gupta and T. Kundu Roy, *J. of Alloys & Comp.* 821 (2020) 153441
71. Tuning wettability of Si surface by ion beam induced silicon nitride formation and nanopatterning, D. Bhowmik and P. Karmakar, *Surf. & Coat. Tech.* **385** (2020) 125369.
72. Evolution of magnetic anisotropy in cobalt film on nanopatterned silicon substrate studied in situ using MOKE, K. Bukharia P. Karmakar D. Kumar V. R. Reddy and , *J of Mag. & Mag. Mat.* **497** (2020) 165934.
73. Defect induced room temperature ferromagnetism in methylammonium lead iodide perovskite, S. Sil, H. Luitel, J. Dhar, M. Chakrabarti, P. P. Ray, B. Bandyopadhyay and D. Sanyal, *Phys. Lett. A* **384** (2020) 126278.
74. Ferromagnetic property of copper doped ZnO: a first-principles study, A. K. Nayek, H. Luitel, B. Haldar, D. Sanyal, M. Chakrabarti, *Comp. Cond. Matt.* **23** (2020) e00455.
75. Defects-focused analysis of calcium-substitution-induced structural transformation of magnesium ferrite nanocrystals, A. R. Abraham, B. Raneesh, D. Sanyal, S. Thomas, N. Kalarikkal and P. M. G. Nambissan, *New J. of Chem.* **44** (2020) 1556.
76. Defects characterisation and studies of structural properties of sol–gel synthesized MgFe<sub>2</sub>O<sub>4</sub> nanocrystals through positron annihilation and supportive spectroscopic methods, A. R. Abraham, B. Raneesh, P. M. G. Nambissan, D. Sanyal, S. Thomas and N Kalarikkal , *Phil. Mag.* **100** (2020) 32.
77. Ferromagnetic ordering in cobalt doped methylammonium lead bromide: An ab-initio study, H. Luitel, S. Moshat and D. Sanyal, *Comp. Cond. Matt.* **22** (2020) e00444.
78. Half metallic ferromagnetic and optical properties of ruthenium-doped zinc blende ZnS: A first principles study, S. Ghosal, H. Luitel, S. K. Mandal, D. Sanyal and D Jana, *J. of Phys. and Chem. of Solids* **136** (2020) 109175.

79. Development and testing of radio frequency modulated electron gun at VECC, Kolkata, Md. Z. A. Naser, S. Dechoudhury, D. P. Dutta, S. K. Thakur, S. Haque, V. Naik, A. Bandyopadhyay, *JINST* **14 P** (2019) 11027.
80. Signature of Bi-modal fission in Uranium Nuclei, A. Chakrabarti, S. Dechoudhury, D. Bhownik, V. Naik, *Journal of Physics - G, Nuclear and Particle Physics* **46** (2019) 125105.
81. Discriminating electromagnetically induced transparency from Autler–Townes splitting in a  $\Xi$  system, S. Nath, V. Naik, A. Chakrabarti and A. Ray, *J. of the Optical Society of America B* **36** (2019) 2610
82. Grain growth kinetics of  $\text{Er}_2\text{O}_3$  doped  $\text{ZnO-V}_2\text{O}_5$  based varistor ceramics, S. Roy, T Kundu Roy, D. Das, *Ceram. International* **45** (2019) 24835.
83. Nonlinear Electrical Properties of  $\text{ZnO-V}_2\text{O}_5$  Based Rare Earth ( $\text{Er}_2\text{O}_3$ ) Added Varistors, S. Roy, D. Das, and T. Kundu Roy, *Journal of Electronic Materials* **48** (2019) 5650
84. Presence of reactive impurities in  $\text{Ar}^+$  ion beam plays a key role for Si ripple formation, D. Bhowmik M. Mukherjee and P. Karmakar, *Nucl. Inst. & Method B* **444** (2019) 54
85. Tailoring and investigation of surface chemical nature of virgin and ion beam modified muscovite mica, D. Bhowmik and P. Karmakar, *Surf. & Inter. Analysis* **51** (2019) 667
86. First-principles analysis of ferromagnetic properties of molybdenum-doped wide-band-gap oxides, S. Roy, H. Luitel and D. Sanyal, *Phil. Mag. Lett.* **99** (2019) 326
87. Depth resolved defect characterization of energetic ion irradiated ZnO by positron annihilation techniques and photoluminescence, A. Sarkar, M. Chakrabarti, D Sanyal, N. Gogurla, P. Kumar, R. S. Brusa and C. Hugenschmidt, *J of Phys. Cond. Matt.* **32** (2019) 085703
88. Ferromagnetism in p-block-element doped ZnO: An *ab-initio* approach, H. Luitel and D. Sanyal, *Comp. Cond. Matt.* **21** (2019) e00393
89. Magnetic properties of transition metal doped  $\text{SnO}_2$ : A detailed theoretical study, S Roy, H Luitel and D Sanyal , *Comp. Cond. Matt.* **19** (2019) e00376

90. First principle analysis for magnetic properties of noble metal doped rutile TiO<sub>2</sub>, S. Roy, H. Luitel and D. Sanyal *Comp. Cond. Matt.*, **18** (2019) e00349.
91. Experimental and first principle study of room temperature ferromagnetism in carbon-doped rutile TiO<sub>2</sub>, H. Luitel, P Chettri, A Tiwari and D. Sanyal, *Mat. Res. Bull.* **110** (2019) 13.
92. Tailoring and investigation of surface chemical nature of virgin and ion beam modified muscovite mica, Dipak Bhowmik and Prasanta Karmakar, *Surf Interface Anal.* **51** (2019) 667.
93. Presence of reactive impurities in Ar<sup>+</sup> ion beam plays a key role for Si ripple formation, Dipak Bhowmik, Manabendra Mukherjee and Prasanta Karmakar, *Nuc. Inst. & Method. B* **444** (2019) 54.
94. In-situ analysis of ion-induced physicochemical change of Si surface by secondary electron yield detection, Subhash Ghosh, and Prasanta Karmakar, *Nuc. Inst. & Method. B* **441** (2019) 56.
95. Dynamic scaling behavior of mica ripples produced by low energy Ar<sup>+</sup> ion erosion, Dipak Bhowmik, Debasree Chowdhury and Prasanta Karmakar, *Surf. Sci.* **679** (2019) 86.
96. Tuning of p–n–p-Type Conduction in AgCuS through Cation Vacancy: Thermopower and Positron Annihilation Spectroscopy Investigations, M. Dutta, D. Sanyal and K. Biswas, *Inorg. Chem.* **122** (2018) 9209
97. Analysis of interfaces in Bornite (Cu<sub>5</sub>FeS<sub>4</sub>) fabricated Schottky diode using Impedance Spectroscopy method and its photosensitive behaviour, S. Sil , A.Dey, J. Datta, M. Das, R. Jana, S. Halder, J. Dhar, D. Sanyal, and P. P. Ray, *Mat. Res. Bull.* **106** (2018) 337.
98. Lattice-Defect-Induced Piezo Response in Methylammonium-Lead-Iodide Perovskite Based Nanogenerator, J. Dhar, S. Sil, N. A. Hoque, A. Dey, S. Das, P. P. Ray and D. Sanyal, *ChemistrySelect* **3** (2018) 5304.

99. Excitonic and defect related photoluminescence from graphitic carbon nitride nanosheets under above and below band gap excitation, B. Choudhury, K. K. Paul, D. Sanyal, P. K. Giri and A. Hazarika, *J of Phys. Chem. C* **122** (2018) 9209.
100. Soft Phonon Modes Leading to Ultralow Thermal Conductivity and High Thermoelectric Performance in AgCuTe, S Roychowdhury, M. K Jana, J. Pan, S. N. Guin, D. Sanyal, U. V. Waghmare and K. Biswas *Angew.Chemie Int. Ed.* **57** (2018) 4043.
101. Inhomogeneous charge distribution across gold nanoclusters measured by scattered low energy alkali ions, Christopher Salvo, Prasanta Karmakar and Jory Yarmoff, *Phys. Rev. B* **98** (2018) 035437.
102. Physicochemical variation of mica surface by low energy ion beam irradiation, Dipak Bhowmik and Prasanta Karmakar, *Nucl. Inst. & Method. B* **422** (2018) 41.
103. Nanomechanical properties of ion induced Si ripple patterns, S. Bhattacharjee, D. Lavanyakumar, V. Naik, S. Mondal, S. R. Bhattacharyya, Prasanta Karmakar, *Thin Solid Films* **645** (2018) 265.
104. Soft Phonon Modes Leading to Ultralow Thermal Conductivity and High Thermoelectric Performance in AgCuTe, S Roychowdhury, M. K Jana, J. Pan, S. N. Guin, Dirtha Sanyal, U. V. Waghmare and K. Biswas, *Angew.Chemie Int. Ed.* **57** (2018) 4043.
105. Radioactive ion beams of <sup>111</sup>In using ECR plasma sputtering method, Vaishali Naik, Mahuwa Bhattacharjee, D. Lavanya Kumar, P. Karmakar, S. K. Das, D. Banerjee, S. Chattopadhyay, L. Barua, S. Saha Das, A. K. Pal, A. Bandyopadhyay, A. Chakrabarti, *Rev. Sci. Instr.* **88** (2017) 063308.
106. Longitudinal bunch length measurement of RFQ beam using in-house developed detector system, Hemendra Kumar Pandey, Siddhartha Dechoudhury, T.K. Bhattacharyya and Alok Chakrabarti, *J. of Inst.* **12** (2017) T09001
107. Big-bang nucleosynthesis and primordial lithium abundance, V. Singh, J. Lahiri, Debasis Bhowmick, D. N. Basu, *Astronomy and Astrophysics* (2018).

108. Ab-initio calculation and experimental observation of room temperature ferromagnetism in 50 keV nitrogen implanted rutile TiO<sub>2</sub>, H. Luitel, M. Chakrabarti, A. Sarkar, S. Dechoudhury, D. Bhowmick, V. Naik and Dirtha Sanyal, *Mat. Res. Exp.* **5** (2017) 026105.
109. Non-contact Control of Two Photon Absorption, Ayan Ray, Waseem Raja, Md. Farroque Mir, AlokChakrabarti, *Applied Optics* **56** (2017) 8340.
110. Dielectric, magnetic, ferroelectric, and Mossbauer properties of bismuth substituted nanosized cobalt ferrites through glycine nitrate synthesis method, K. L. Routray, Dirtha Sanyal, D. Behera, *J. of Appl. Phys.***122** (2017) 224104.
111. Origin of ferromagnetism in Cu doped rutile TiO<sub>2</sub>-An ab-initio approach, Sujata Roy, Homnath Luitel, Dirtha Sanyal, *Computational Condensed Matter***13** (2017) 127
112. The blue light indicator in rubidium 5S–5P–5D cascade excitation, Waseem Raja, Md. Sabir Ali, Alok Chakrabarti and Ayan Ray, *Appl. Phys. B* (2017)
113. Lower Order and Higher Order Entanglement in Four-Wave Mixing Process, Moumita Das, Biswajit Sen, Ayan Ray and Anirban Pathak, *Annalen der Physik* (2017).
114. Ab-initio calculation of magnetic properties in B, Al, C, Si, N, P and As doped rutile TiO<sub>2</sub>, Homnath Luitel and Dirtha Sanyal, *Int. J. of Mod. Phys. B***31** (2017) 1750227.
115. Bias dependent conduction and relaxation mechanism study of Cu<sub>5</sub>FeS<sub>4</sub> film and its significance in signal transport network, S Sil, J Datta, M Das, R Jana, S Halder, A Biswas, Dirtha Sanyal, P P Ray, *J. of Mat. Sc.: Mat. in Elect.* **29** (2017) 5014.
116. Influence of sintering temperature on microstructure and electrical properties of Er<sub>2</sub>O<sub>3</sub> added ZnO-V<sub>2</sub>O<sub>5</sub>-MnO<sub>2</sub>-Nb<sub>2</sub>O<sub>5</sub>varistor ceramics, S. Roy, D. Das and T. K. Roy, *J. of Alloys and Compounds* (2018).
117. Synthesis of nano-patterned and Nickel Silicide embedded amorphous Si thin layer by ion implantation for higher efficiency solar devices, D. Bhowmik, S. Bhattacharjee, D. Lavanyakumar, V. Naik, B. Satpati, and P. Karmakara, *Appl. Surf. Sci.* **422** (2017) 11.

118. Preparation of Giant Unilamellar Vesicles and Solid Supported Bilayer from Large Unilamellar Vesicles: Model Biological Membranes, Amrita Basu, Pabitra Maity, Prasanta Karmakar and Sanat Karmakar, *J. Surface Sci. Technol.* **32** (2017) 83.
119. Nanoscale Stabilization of Nonequilibrium Rock Salt BiAgSeS: Colloidal Synthesis and Temperature Driven Unusual Phase Transition, S. N. Guin, S. Banerjee, Dirtha Sanyal, S. K. Pati, and K. Biswas, *Chem. Mater* **29** (2017) 3769.
120. Ab-initio calculation of the magnetic properties of P and As doped SnO<sub>2</sub>, H Luitel, S Roy, and Dirtha Sanyal, *Comp. Cond. Matter* **14** (2018) 36.
121. Physics Design of rod type proton Radio Frequency Quadrupole Linac, C. Das, S. Dechoudhury, H. K. Pandey, V. Naik, A. Chakrabarti, *JINST* **12 T** (2017) 02005.
122. Positron Annihilation Spectroscopic Investigation on the Origin of Temperature Dependent Electrical Response in Methylammonium Lead Iodide Perovskite, J. Dhar, S. Sil, A. Dey, P. P. Ray and D. Sanyal, *J of Phys. Chem. Lett.* **8** (2017) 1745.
123. Positron annihilation spectroscopic characterization of defects in wide band gap oxide semiconductors, A. Sarkar, H. Luitel, N. Gogurla and D Sanyal, *Mat. Sc. Exp.* **4** (2017) 35909.
124. Defect generation and recovery in polycrystalline ZnO during annealing below 300 °C- studied by in-situ positron annihilation spectroscopy, H. Luitel, D. Sanyal, N. Gogurla, A. Sarkar, *J of Mat. Science* **52** (2017) 7615.
125. Investigation Investigation of Ion Mediated Charge Transport in Methylammonium Lead Iodide Perovskite  
J. Dhar, S. Sil, A. Dey, D. Sanyal and P. P. Ray, *J of Phy. Chem. C* **121** (2017) 5515.\
126. Resonance Raman scattering and ab initio calculation of electron energy loss spectra of MoS<sub>2</sub> nanosheets, A. Chakraborti, A. S. Patel, P. K. Kanaujia, P. Nath, G. V. Prakash, D. Sanyal, *Phys. Lett. A* **380** (2016) 4057.

127. Origin of the order–disorder transition and the associated anomalous change of thermopower in AgBiS<sub>2</sub> nanocrystals: A combined experimental and theoretical study, S. N. Guin, S. Banerjee, D. Sanyal, S. K. Pati, and K. Biswas, *Inorganic Chem.* **55** (2016) 6323.
128. Positron annihilation lifetime characterisation of oxygen ion irradiated rutile TiO<sub>2</sub>, H. Luitel, A. Sarkar, M. Chakrabarti, S. Chattopadhyay, K. Asokanand D. Sanyal, *Nuclear Instru. & Methods B* **379** (2016) 215.
129. The influence of projectile ion induced chemistry on surface pattern formation, P Karmakar and B. Satpati, *J. Appl. Phys.* **120** (2016) 025301.
130. Characteristics of Er<sub>2</sub>O<sub>3</sub> Added ZnO-Based Varistor Ceramics, S. Roy, Tapatee Kundu Roy, D. Das, *Materials Science Forum*, **880** (2017) 105.
131. Comparison of yields of neutron-rich nuclei in proton- and photon-induced <sup>238</sup>U fission, F. A. Khan, Debasis Bhowmick, D.N. Basu, M. Farooq, and Alok Chakrabarti, *Phy. Rev. C* **94**, 054605 (2016).
132. Theoretical and experimental investigation of possible ferromagnetic ordering in wide band gap ZnO and related systems; A. Sarkar, D. Sanyal, S. Dechoudhury, D. Bhowmick, T. Rakshit, A. Chakrabarti, *Nuclear Instru. & Methods B* **379** (2016) 18.
133. Development of deflector cavity and RF amplifier for bunch length detector system; H.K. Pandey, T.K. Bhattacharyya and A. Chakrabarti, *Journal of Instrumentation*, Vol. 11 ,no.02 (2016), T02001.
134. Energy Dependence of exotic nuclei production cross sections by photo nuclear reaction in GDR range; Debasis Bhowmick, F. Khan, F; Atta, D N Basu, Alok Chakrabarti, *Canadian Journal of Physics*, **94** (2)(2016) 243.

135. Coupler induced transverse kick and emittance growth in single cell elliptical cavities of 10 MeV superconducting electron linac injector; Siddhartha Dechoudhury, Hemendra Kumar Pandey, Dipta Pratim Dutta, Vaishali Naik, Alok Chakrabarti, Yu-Chiu Chao and Robert E. Laxdal, *Journal of Instrumentation* Vol.10, no.3 (2015) T03001
136. Yields of neutron-rich nuclei by actinide photofission in the giant dipole resonance region; Debasis Bhowmick, Debasis Atta, D. N. Basu, and Alok Chakrabarti; *Phys. Rev. C* 91, (2015) 044611
137. Control of coherence in a ladder type system with double resonance optical pumping and electromagnetically induced transparency; Md. Sabir Ali, Ayan Ray, Alok Chakrabarti, *European Physical Journal D* (2015), 69:41
138. Multiple charge beam dynamics in alternate phase focusing structure; S. Dechoudhury, Alok Chakrabarti, and Y.-C. Chao, *Phys. Rev. ST Accel. Beams* 17, 074201 (2014)
139. Rare ion beams – the new road to understand the universe, Alok Chakrabarti, *CURRENT SCIENCE*, Vol. 108, No. 1, 10 January 2015
140. Room temperature ferromagnetic ordering in 4MeV Ar<sup>5+</sup> irradiated TiO<sub>2</sub>, D Sanyal, Mahuya Chakrabarti, P Nath, A Sarkar, D Bhowmick and A Chakrabarti, *J. Phys. D: Appl. Phys.* 47 (2014) 025001
141. Application of repumping laser in optical switching, Ayan Ray, Md. Sabir Ali, Alok Chakrabarti, *Optics & Laser Technology* Volume 60, (2014), Pages 107–110
142. A Gas-Jet Transport and Catcher Technique for On-line Production of Radioactive Ion Beams using an Electron Cyclotron Resonance ion-source, V. Naik, A. Chakrabarti, M. Bhattacharjee, P. Karmakar, A. Bandyopadhyay, S. Bhattacharjee, S. Dechoudhury, M. Mondal, H.K. Pandey, D. Lavanyakumar, T.K. Mandi, D.P. Dutta, T. Kundu Roy, D. Bhowmick, D. Sanyal, S.C.L. Srivastava, A. Ray and Md. S. Ali; *Rev. Sci. Instrum.* Vol.84, (2013) 033301.

143. Temperature dependent resistivity study on zinc oxide and the role of defects, Tapatee Kundu Roy, D.Sanyal, Debasis Bhowmick, Alok Chakrabarti, *Materials Science in Semiconductor Processing*, 16 (2013) 332-336.
144. Photoluminescence and positron annihilation spectroscopic investigation on a H<sup>+</sup> irradiated ZnO single crystal; A. Sarkar, M. Chakrabarti, D. Sanyal, D. Bhowmick, S. Dechoudhury, A. Chakrabarti T. Rakshit and S. K. Ray *J. Phys.: Condens. Matter* 24 (2012) 325503
145. Interplay of 4f–3d Magnetism and Ferroelectricity in DyFeO<sub>3</sub>; B. Rajeswaran, D. Sanyal, M. Chakrabarti, Y. Sundarayya, A. Sundaresan and C. N. R. Rao, *EuroPhys. Lett* 101 (2013) 17001
146. Positron annihilation characterization of nanocrystalline ZnO ; M. Chakrabarti, D. Jana and D. Sanyal  
*Vacuum* 87 (2013) 16.
147. Improved and delayed radiative emission response of Eu-doped BaTiO<sub>3</sub> nanoscale system; M. Borah, D. Mohanta, D. Sanyal, M. Chakrabarti, and D. Jana, *Eur. Phys. J. Appl. Phys.* 59 (2012) 10402.
148. Observation of high ferromagnetic ordering in Fe implanted ZnO at room temperature: D. Sanyal, M. Chakrabarti, T. Kundu Roy, D. Bhowmick, S. Dechoudhury, A. Badyopadhyay, and Alok Chakrabarti: in press NIM B (2009)
149. Coulomb explosion sputtering of selectively oxidized Si: P. Karmakar, S. Bhattacharya, V. Naik, A. K. Sinha, and A. Chakrabarti; to be published in Applied Surface Science
150. Beta decay study of Tz = -2 proton-rich nucleus <sup>24</sup>Si: Y. Ichikawa, T. Kubo, N. Aoi, V. Banerjee, A. Chakrabarti, et. al. and H. Sakurai; in press European Physics Journal A
151. Role of initial surface roughness on ion induced surface morphology: P. Karmakar, S. A. Mollick, D. Ghose, and A. Chakrabarti, *Applied Phys. Letts.* 93 (2008) 103102

152. Observation of room temperature ferromagnetism in Mn-Fe doped ZnO, Mahuya Chakrabarti, Siddhartha Dechoudhury, D. Sanyal, Tapatee Kundu Roy, Debasis Bhowmick and Alok Chakrabarti J. of Phys. D 41 (2008) 135006.
153. Defect studies in annealed ZnO by positron annihilation spectroscopy, D. Sanyal, Tapatee Kundu Roy, Mahuya Chakrabarti, Siddhartha Dechoudhury, Debasis Bhowmick and Alok Chakrabarti J. of Phys. C 20 (2008) 045217.
154. Particle size dependence of magnetic, optical and defect parameters in mechanically milled Fe<sub>2</sub>O<sub>3</sub>, Mahuya Chakrabarti, A. Banerjee, D. Sanyal, Manas Sutradhar and A. Chakrabarti J of Mat. Sciences 43 (2008) 4175.
155. Sintering studies of nano-crystalline zinc oxide, Tapatee Kundu Roy, Debasis Bhowmick, Dirtha Sanyal, Alok Chakrabarti, Ceramics International, 34 (2008)81.
156. The radioactive ion beam project at VECC, Kolkata – Its present status and future plans Alok Chakrabarti; Nucl. Instru. & Meth. of Phys. B 261 (2007) 1018.
157. The origin of ferromagnetism and defect-magnetization correlation in nanocrystalline ZnO, D. Sanyal, Mahuya Chakrabati, Tapatee Kundu Roy and Alok Chakrabarti, Phys. Letts. A 371 (2007) 482
158. 33.7 MHz heavy-ion radio frequency quadrupole linac at VECC Kolkata, A. Chakrabarti, V. Naik, S. Dechoudhury, A. Bandyopadhyay, M. Mondal, H. K. Pandey, T. K. Roy, D. Sanyal, and D. Bhowmick, Rev. Sci. Instrum. 78, (2007) 043303.
159. Preparation of Zn(1-x)CdxFe<sub>2</sub>O<sub>4</sub> (x = 0.0, 0.1, 0.3, 0.5, 0.7 and 1.0) ferrite samples and their characterization by Mossbauer and positron annihilation techniques, Mahuya Chakrabarti, D. Sanyal and A. Chakrabarti J. Phys. C 19 (2007) 236210.
160. A helium jet coupled On-Line Isotope Separator Facility at Variable Energy Cyclotron Centre, Kolkata , Arup Bandyopadhyay, V. Naik, D. Bhattacharya, S. De Choudhury, S. K. Nayak, M. Mondal, S. Chattopadhyay, A. Polley, A. Chakrabarti; Nucl. Instrum. & Method A562 (06) 41.

161. Design of LINAC post-accelerator for VECC RIB facility using realistic field, Arup Bandyopadhyay, O. Kamigaito, Sumanta Kumar Nayak, Hemendra Kumar Pandey, Manas Mondal and Alok Chakrabarti; Nucl. Instrum. & Method A 560 (2006) 182.
162. Design of a “two-ion source” Charge Breeder using ECR ion source in two frequency mode,  
Damayanti Naik, Vaishali Naik, Alok Chakrabarti, S. Dechoudhury, Sumanta Kumar Nayak, H.K. Pandey and Takahide Nakagawa, Nucl. Instrum. & Method A 547 (2005) 270.
163. Doppler broadening measurements of the electron-positron annihilation radiation in nanocrystalline ZrO<sub>2</sub>, Mahuya Chakrabarti, D. Bhowmick, S. Chattopadhyay, A. Sarkar, D. Sanyal, S. Dechoudhury, and Alok Chakrabarti; J. of Mat. Sc. 40 (2005) 5265.
164. Preparation and optimization of targets for production of radio-active ions: Studied by heavy ion beams from VEC, Debasis Bhowmick, D. Naik, Md. Eqbal, D. Sanyal, S. Deychoudhury, V. Banerjee, A. Bandyopadhyay, P. Deb, D. Bhattacharyya and Alok Chakrabarti, Nucl. Instrum. & Method A 539 (2005) 54.
165. Grain size dependence of optical properties and positron annihilation parameters in Bi<sub>2</sub>O<sub>3</sub> powder, Mahuya Chakrabarti, Sreetama Dutta, S. Chattapadhyay, A. Sarkar, D. Sanyal and Alok Chakrabarti; Nanotechnology 15 (2004) 1792.
166. Doppler broadening measurements of positron annihilation in Bi-based high T<sub>c</sub> superconductor along two different crystallographic directions, Mahuya Chakrabarti, A. Sarkar, S. Chattapadhyay, D. Sanyal and Alok Chakrabarti; Physica C 416 (2004) 25.
167. The design of a four-rod RFQ LINAC for VEC-RIB facility, Alok Chakrabarti, Vaishali Naik, S. Dechoudhury, D. Bhowmick, D. Sanyal, A. Bandyopadhyay, T.K. Chakraborty, M. Mondal, S. Nayak, H. Pande, T.K. Bhaumik, A. Giri, D. Bhattacharya, T.J. Sen, S. Bhattacharya, O. Kamigaito, A. Goto, Y. Yano – Nucl. Instrum. & Meth. A535 (2004) 599.
168. The Radioactive Ion Beams project at VECC, Kolkata – a status report, A. Chakrabarti ; Pramana 59 (2002) 923.

169. The design of a Radio Frequency Quadrupole linac for the RIB project at VECC Kolkata, V. Banerjee, A. Chakrabarti, Arup Bandyopadhyay, T.K. Bhaumik, M. Mondal, T. K. Chakraborty, H. Pande, O. Kamigaito, A. Goto, Y. Yano ; *Pramana* 59 (2002) 957.
170. Beta-delayed proton decay of  $^{24}\text{Si}$ . V. Banerjee, T. Kubo, A. Chakrabarti, H. Sakurai, Arup Bandyopadhyay, K. Morita, S.M. Lukyanov, K. Yoneda, H. Ogawa and D. Beaumel. *Phys. Rev. C* 63 (2001) 024307.
171. Design of a two-ion-source (2-IS) beam transport line for the production of multi charged radioactive ion beams. V. Banerjee, A. Chakrabarti, A. Bandyopadhyay, S. Chattopadhyay, A. Polley, T. Nakagawa, O. Kamigaito, A. Goto, Y. Yano. *Nucl. Instrum. & Meth.* A447(2000) 345
172. The Radioactive Ion Beam facility at VECC Calcutta – the aim and future, A. Chakrabarti ; *Ind. Journ. Phys* 73S (1999) 131.
173. Empirical formalism for projectile fragmentation and production of new neutron-rich nuclei with RIBs. D. Bhaumik, A. Chakrabarti, D.N. Basu, P. Ghosh, R. Goswami. *Mod. Phys. Lett.* A13 (1998) 2665.
174. The Radioactive Ion Beams facility at VECC Calcutta – a status report, A. Chakrabarti ; *Journ. of Phys. G : Nucl. Part. Phys.*, 24 (1998) 1361.
175. Design of the RFQ & Linac post accelerator for VEC-RIB facility, A. Bandyopadhyaya, O Kamigaito, A. Chakrabarti, V. Banerjee, P. Ghosh, A Goto & Y. Yano ; *Journ. of Phys. G : Nucl. Part. Phys.*, 24 (1998) 1367.
176. Beta delayed proton spectroscopy of  $^{24}\text{Si}$ , V. Banerjee, T. Kubo, A. Chakrabarti, H. Sakurai, A. Bandyopadhyay, K. Morita, S.M. Lukyanov, K. Yoneda, H. Ogawa and D. Beaumel. *Journ. of Phys. G : Nucl. Part. Phys.*, 24 (1998) 1403.
177. Radioactive Ion Beams - Global scenario and National efforts : A. Chakrabarti ; *Radiat. Phys. Chem.* 51 (1998) 497.