

## 1. Publications

| S. No. | Author (s)                                                                                            | Title                                                                                                                                                                             | Name of Journal                                  | Vol   | Page   | Year | Q  |
|--------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------|--------|------|----|
| 1.     | Devadiga,M.M.;Bhat,A.S.;Rudra,S.;Wang,N.;Nayak,G.C.;Tiwari,S.K.                                       | Mechanically Exfoliated Few-Layer h-BN Nanosheets for Advanced Nanoporous PMMA Membranes in Water Treatment                                                                       | ACS Applied Engineering Materials                | xx    | xx     | 2025 | Q1 |
| 2.     | Maity,C.K.;Acharya,S.;De,S.;Sahoo,S.;Kim,M.J.;Nayak,G.C.                                              | Boron nitride, a versatile nanostructure: Advances in synthesis,modifications and energy storage applications                                                                     | Journal of Power Sources                         | 653   | 23775  |      | Q1 |
| 3.     | Basree.; Ali, A.; Sepay,N.;Nayak, G.C.; Siddiqui, K.A.;Ahmad, M.                                      | DFT-assisted investigation of a 2D Zn(II)-based co-ordination polymer, and its composite for supercapacitor and sensor uses                                                       | New Journal of Chemistry                         | 49    | 15105  |      | Q2 |
| 4.     | Acharya,S.;De,S.;Tran,D.T.;Kim,N.H.;Mishra,B.K.;Nayak,G.C.; Lee,J.H.                                  | Harnessing porous carbon/iron oxide nanocomposites for arsenic contaminated water remediation and asymmetric supercapacitor                                                       | Materials Today Chemistry                        | 47    | 10282  |      | Q1 |
| 5.     | Pattnaik,C.;Mishra, R.;Lenka,A.; Kar,B.P.;Dash,S.K.; Sahoo,L. N.; Tripathy,S.K.; Nayak, G.C.;Sahoo,S. | Exploring the versatility of carbohydrate-capped green silver nanoparticles as multi-dimensional reagents for targeted applications                                               | Journal of Molecular Structure                   | 1319  | 139544 |      | Q2 |
| 6.     | Ali,A.; Kumari, K.; Joy, A.; Parween, F.; Sultana,M.S.; Nayak, G. C.                                  | In situ-decorated heterocomposites derived from Zn(II)-based coordination polymer for asymmetric supercapacitor applications                                                      | Sustainable Energy & Fuels                       | 9     | 15059  |      | Q1 |
| 7.     | Ali, A; Nayak, G. C; Siddiqui, K. A; Ahmad, M.                                                        | Co (II)-Based 2D Coordination Polymer Featuring Energy Storage and Detection of Aqueous Inorganic Anions                                                                          | ACS Omega                                        | 10(1) | 1344   | 2024 | Q2 |
| 8.     | Maity, C. K; Acharya, S; De, S; Tiwari, S. K; Kumari, K; Joy, A; Sahoo, S; Sahoo, S; Nayak, G. C.     | Extraction and modification of cigarette smoke aerosol derived nanoparticle for supercapacitor                                                                                    | Journal of Energy Storage                        | 102   | 114099 |      | Q1 |
| 9.     | Biswal, M. K; Kuila, C; Maji, A; Murmu, N. C; Nayak, G. C; Kuila, T.                                  | Thermal and Mechanical Behavior of APTES-Modified Al <sub>2</sub> O <sub>3</sub> -Embedded Unidirectional Carbon Fiber/Epoxy Composites: An Experimental and Statistical Approach | Journal of Materials Engineering and Performance | 34    | 15628  |      | Q2 |
| 10.    | Ali, A; Kumari, K; Ahmad, M; Nayak, G. C.                                                             | Functional metal–organic frameworks derived electrode materials for electrochemical energy storage: a review                                                                      | Chemical Communications                          | 60    | 13292  |      | Q1 |
| 11.    | Ali, A; Khan, N; Khan, M. Z; Nayak, G.C; Siddiqui, K. A; Ahmad, M.                                    | A dual functional Cu(II)-coordination polymer and its rGO composite for selective solvent detection and high performance energy storage                                           | Materials Advances                               | 5     | 8265   |      | Q1 |
| 12.    | Behera, D.; Pattnaik, S.S.; Sanjibani, S.; Nayak, G.C.; Das, N.; Behera, A. K.                        | Fabrication and characterization of eco-friendly biocomposites from waste coconut spathe fabric for sustainable progress                                                          | New Journal of Chemistry                         | 48    | 17761  |      | Q2 |
| 13.    | Shukla, V.; Ahmad, M.; Nayak, G. C.; Thakur, T. S.; Siddiqui, K. A.                                   | High Cell Volume Zn-Metal–organic Framework: Unveiling the Pseudo-capacitor Properties and Selective Colorimetric Recognition of Oxyanions                                        | Crystal Growth & Design                          | 24    | 3977   |      | Q2 |
| 14.    | Joy, A.; Kumari, K.; Parween,F.; Sultana, M.S.; Nayak,G.C.                                            | A Comprehensive Review on Strategies for Enhancing the Performance of Polyanionic-Based Sodium-Ion Battery Cathodes                                                               | ACS Omega                                        | 9, 21 | 22509  |      | Q2 |
| 15.    | Kumari, K., Joy, A., Saren, P., S. Acharya, S., De, S., Behera, A.K., Mahanti, B., Nayak, G. C.       | Synthesis of highly porous hybrid nanocomposite of hemp derived carbon nanosheet/carbon nanotube/manganese cobalt oxide for asymmetric supercapacitor                             | Materials Chemistry and Physics                  | 313   | 128677 |      | Q1 |
| 16.    | De, S., Acharya, S., Sahoo, S., Nayak, G. C.                                                          | A quick and effective strategy for the synthesis of Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> via electrochemical method                                                      | Energy Advances                                  | 3     | 77     |      | Q2 |
| 17.    | Acharya, S., De, S., Ganguly, A., Mishra, B K., Nayak, G. C.                                          | Utilization of lead-based saturated adsorbents for the fabrication of battery-like hybrid asymmetric supercapacitors                                                              | Environmental Science: Nano                      | 11    | 1654   | 2023 | Q1 |
| 18.    | Acharya, S.; De, S., Mishra, B K., Nayak, G. C.                                                       | Enhancing the efficiency of flexible all-solid-state supercapacitor via cadmium decontamination of water                                                                          | Journal of Energy Storage                        | 73    | 10893  |      | Q1 |
| 19.    | Acharya, S.; Bag, S; De, S.; Maity, C. K.; Nayak, G. C.                                               | Resourceful utilization of methylene blue-contaminated water for the fabrication of an ultra-stable supercapacitor device                                                         | Sustainable Energy & Fuels                       | 7(4)  | 1011   | 2023 | Q1 |

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|-----|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------|---------|------|----|
| 20. | Acharya, S.; De, S.; Nayak, G. C.                                                                                        | Cnt/ldh-stabilized biomass-derived nanocellulose as a low-cost alternative for asymmetric supercapacitors: Impact of sources of nanocellulose                                                               | ACS Applied Electronic Materials            | 5(1)   | 406-417 | 2022 | Q1 |
| 21. | Alamgir, Md.; Panchal, M.; Mallick, A.; Nayak, G. C.; Singh, S. K.                                                       | Introduction of Metal nanoparticles, Dental Applications, and Their Effects. Nanoparticles Reinforced Metal Nanocomposites: Mechanical Performance and Durability                                           | Springer Nature                             |        | 23-52   |      | -  |
| 22. | De, S.; Acharya, S.; Maity, C. K.; Nayak, G. C.                                                                          | Boron Nitride/Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene Nanosheet/WS <sub>2</sub> Nanostructure Ternary Composites for All-Solid-State Flexible Asymmetric Supercapacitors                        | ACS Applied Nano Materials                  | 6      | 11175   |      | Q1 |
| 23. | De, S.; Acharya, S.; Maity, C. K.; Nayak, G. C.                                                                          | Polyindole-Stabilized Nanocellulose-Wrapped Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> (MXene) Nanocomposite for Asymmetric Supercapacitor Devices                                                       | ACS Applied Energy Materials                | 6(2)   | 969     |      | Q1 |
| 24. | De, S.; Maity, C. K.; Kim, Myung Jong.; Nayak, G. C.                                                                     | Tin (IV) selenide anchored-biowaste derived porous carbon-Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> (MXene) nanohybrid: An ionic electrolyte enhanced high performing flexible supercapacitor electrode | Electrochimica Acta                         | 463    | 142811  |      | Q1 |
| 25. | De, S.; Roy, S.; Nayak, G. C.                                                                                            | MoSn <sub>2</sub> Se <sub>4</sub> -decorated MXene/functionalized RGO nanohybrid for ultrastable supercapacitor and oxygen evolution catalyst                                                               | Materials Today Nano                        | 22     | 1003    |      | Q1 |
| 26. | Kumari, A.; Maity, C. K.; Nayak, G. C.; Dey, Swapan                                                                      | Polynaphthalene-Based Oxazaborinine Complexes Formulated as Red Light Emitters and High-Performance Asymmetric Supercapacitors                                                                              | Langmuir                                    | 39     | 8450    |      | Q1 |
| 27. | Maity, C. K.; De, S.; Panigrahi, A.; Acharya, S.; Verma, K.; Kim, M.J.; Nayak, G. C.                                     | Aerosol derived carbon dots decorated boron nitride supported Zn-doped MoS <sub>2</sub> for high performing flexible asymmetric supercapacitor                                                              | Composites Part B: Engineering              | 264    | 1108    |      | Q1 |
| 28. | Siddiki, S. H.; Maity, C. K.; Verma, Kartikey; Das, S.; Das, S.; Thakur, V.; Nayak, G. C.                                | Influence of Exfoliated Boron Nitride for Fabrication of a Lightweight Wideband Microwave Absorbing Material                                                                                                | ACS Applied Engineering Materials           | 1, 6,  | 1566    |      | Q1 |
| 29. | Siddiki, S. H.; Verma, K.; Chakraborty, B.; Das, S.; Thakur, V. K.; Nayak, G. C.                                         | Defect Dipole-Induced HfO <sub>2</sub> -Coated Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene/Nickel Ferrite Nanocomposites for Enhanced Microwave Absorption                                          | ACS Applied Nano Materials                  | 6(3)   | 1839    |      | Q1 |
| 30. | Singhamahapatra, A.; Pattnaik, C.; Kar, B. P.; Nayak, G. C.; Sahoo, L. N.; Sahoo, S.                                     | Click mediated synthesis of functionalized glycolipids with peptide-peptoid linkages                                                                                                                        | Journal of the Serbian Chemical Society     | 88     | 715     | 2022 | Q3 |
| 31. | Maity, C. K.; Sahoo, S.; Verma, K.; Nayak, G. C.                                                                         | SnS <sub>2</sub> @ Conducting Energy Level-Induced Functionalized Boron Nitride for an Asymmetric Supercapacitor                                                                                            | Energy & Fuels                              | 36,4   | 2248    |      | Q1 |
| 32. | Alamgir, Md; Shahabuddin, S.; Mallick, A.; Nayak, GC                                                                     | Processing of pHEMA/TiO <sub>2</sub> based nanocomposites used as an excellent dental materials                                                                                                             | Materials Today: Proceedings                | 62(13) | 7088    |      | Q2 |
| 33. | De, S.; Acharya, S.; Sahoo, S.; Shim, J. J.; Nayak, G. C.                                                                | From 0D to 3D MXenes: their diverse syntheses, morphologies and applications                                                                                                                                | Materials Chemistry Frontiers               | 6      | 81      |      | Q1 |
| 34. | De, S.; Maity, C. K.; Acharya, S.; Sahoo, S.; Shim, J. J.; Nayak, GC                                                     | MXene (Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> ) supported CoS <sub>2</sub> /CuCo <sub>2</sub> S <sub>4</sub> nanohybrid for highly stable asymmetric supercapacitor device                           | Journal of Energy Storage                   | 50     | 1046    |      | Q1 |
| 35. | De, S.; Maity, C. K.; Acharya, S.; Sahoo, S.; Nayak, GC                                                                  | MXene (Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> )-/Amine-Functionalized Graphene-Supported Self-Assembled Co <sub>9</sub> S <sub>8</sub> Nanoflower for Ultrastable Hybrid Supercapacitor              | Industrial & Engineering Chemistry Research | 61,    | 7727    |      | Q1 |
| 36. | Maity, C. K.; Santra, Deb Kumar; Verma, Kartikey; Sahoo, S.; Cotts, Sheldon; Akinwande, Deji; Berry, Vikas; Nayak, G. C. | Induced conducting energy- levels in a boron nitride nano-framework for asymmetric supercapacitors in high charge- mobility ionic electrolytes                                                              | Composites Part B: Engineering              | 212    | 108728  | 2021 | Q1 |
| 37. | Alamgir, Md; Mallick, Ashis; Nayak, GC                                                                                   | Mechanical and thermal behavior of pHEMA and pHEMA nanocomposites targeting for dental materials                                                                                                            | Applied Nanoscience                         | 11, 4  | 1257    |      | Q2 |
| 38. | De, S.; Maity, C. K.; Sahoo, S.; Nayak, G. C.                                                                            | Polyindole Booster for Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene Based Symmetric and Asymmetric Supercapacitor Devices                                                                            | ACS Applied Energy Materials                | 4,4    | 3712    |      | Q1 |
| 39. | Alamgir, Md; Nayak, GC; Mallick, Ashis; Sahoo, S.                                                                        | Effects of TiO <sub>2</sub> and GO nanoparticles on the thermomechanical properties of bioactive poly-HEMA nanocomposites                                                                                   | Iranian Polymer Journal                     | 30,10  | 1089    |      | Q2 |
| 40. | De, S.; Acharya, S.; Sahoo, S.; Nayak, G. C.                                                                             | Current trends in MXene research: properties and applications                                                                                                                                               | Materials Chemistry Frontiers               | 5,     | 71      |      | Q  |
| 41. | De, S.; Sahoo, S.; Das, Ashok Kumar; Nayak, G. C.                                                                        | Recent Progress in Electrospinning Technologies for Graphene-Based Materials Electrospinning of Graphene                                                                                                    | Electrospinning of Graphene                 | 1      |         |      | -  |

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|-----|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------|--------|------|----|
| 42. | Ghosh, Shankhamala; Maity, C. K.; Nayak, GC; Nayek, Hari Pada                                | A cobalt (II) metal-organic framework featuring supercapacitor application                                                                                          | Journal of Solid State Chemistry                         | 282    | 1210   | 2020 | Q2 |
| 43. | Sonal, S; Prakash, P; Mishra, B K; Nayak, GC                                                 | Synthesis, characterization and sorption studies of a zirconium (iv) impregnated highly functionalized mesoporous activated carbons                                 | RSC Advances                                             | 10     | 1378   |      | Q1 |
| 44. | Das, AK; Jena, S; Sahoo, S.; Kuch, R; Kim, D; Aljohani, T A; Nayak, G. C.; Jeong, J-R        | Facile synthesis of NiCo2O4 Nanorods for Electrocatalytic Oxidation of Methanol                                                                                     | Journal of Saudi Chemical Society                        | 24     | 434    |      | Q1 |
| 45. | Acharya, S.; Sahoo, S.; Sonal, S; Lee, J H; Mishra, B K; Nayak, GC                           | Adsorbed Cr (VI) based activated carbon/polyaniline nanocomposite: A superior electrode material for asymmetric supercapacitor device                               | Composites Part B: Engineering                           | 193    | 107913 |      | Q1 |
| 46. | Maity, C. K.; Sahoo, S.; Verma, K; Behera, A K; Nayak, G.C.                                  | Facile functionalization of boron nitride (BN) for the development of high- performance asymmetric supercapacitors                                                  | New Journal of Chemistry                                 | 44     | 8106   |      | Q2 |
| 47. | Kumar, K.V.M., Krishnamurthy, K., Rajasekar, R., Kumar, P.S., Pal, K. and Nayak, G.C.        | Influence of graphene oxide on the static and dynamic mechanical behavior of compatibilized polypropylene nanocomposites                                            | Materials Testing                                        | 61(10) | 986    | 2019 | Q2 |
| 48. | Alamgir, M., Mallick, A., Nayak, G.C. and Tiwari, S.K.                                       | Development of PMMA/TiO2 nanocomposites as excellent dental materials                                                                                               | Journal of Mechanical Science and Technology             | 33(10) | 4755   |      | Q2 |
| 49. | Ghosh, S., De Adhikari, A., Nath, J., Nayak, G.C. and Nayek, H.P.                            | Lanthanide (III) Metal-Organic Frameworks: Syntheses, Structures and Supercapacitor Application                                                                     | Chemistry Select                                         | 4(36)  | 1062   |      | Q3 |
| 50. | Maity, C.K., Hatui, G., Tiwari, S.K., Udayabhanu, G., Pathak, D.D., Nayak, G.C., Verma, K.   | One pot solvothermal synthesis of novel solid state N-Doped TiO2/n-Gr for efficient energy storage devices                                                          | Vacuum                                                   | 164    | 88-97  |      | Q1 |
| 51. | Maity, C.K., Hatui, G., Sahoo, S., Saren, P. and Nayak, G.C.                                 | Boron Nitride based Ternary Nanocomposites with Different Carbonaceous Materials Decorated by Polyaniline for Supercapacitor Application                            | ChemistrySelect                                          | 4(13)  | 3672   |      | Q3 |
| 52. | Saren, P., De Adhikari, A., Khan, S. and Nayak, G.C.                                         | Self-assembled GNS wrapped flower-like MnCo2O4 nanostructures for supercapacitor application                                                                        | Journal of Solid State Chemistry                         | 271    | 282    | 2018 | Q2 |
| 53. | De Adhikari, A., Tiwari, S.K., Ha, S.K. and Nayak, G.C.                                      | Boosted electrochemical performance of TiO2 decorated RGO/CNT hybrid nanocomposite by UV irradiation                                                                | Vacuum                                                   | 160    | 421    |      | Q1 |
| 54. | Sahoo L., Kundu S., Singhamahapatra A., Jena N.K., Nayak G. C. , Sahoo S.                    | 5-Benzoyl triazole as new structural dimension in glycoconjugates                                                                                                   | Carbohydrate Research                                    | 469    | 23     |      | Q2 |
| 55. | Maity C.K., Hatui G., Verma K., Udayabhanu G., Pathak D.D., Nayak G. C.                      | Single pot fabrication of N doped reduced GO (N-rGO) /ZnO-CuOnanocomposite as an efficient electrode material for supercapacitor application                        | Vacuum                                                   | 157    | 145    |      | Q1 |
| 56. | Alamgir M., Nayak G. C. , Mallick A., Tiwari S.K., Mondal S., Gupta M.                       | Processing of cPMMA nanocomposites containing biocompatible GO and TiO2 nanoparticles                                                                               | Materials and Manufacturing Processes                    | 33,    | 1291   |      | Q1 |
| 57. | Alamgir M., Tiwari S.K., Mallick A., Nayak G. C.                                             | Graphene oxide and TiO <sub>2</sub> based PMMA nanocomposites for dental applications: A comprehensive study of the mechanical properties                           | IOP Conference Series: Materials Science and Engineering | 77     | 012082 | 2017 | -  |
| 58. | Jayanth D., Kumar P.S., Nayak G. C. , Kumar J.S., Pal S.K., Rajasekar R.                     | A Review on Biodegradable Polymeric Materials Striving Towards the Attainment of Green Environment                                                                  | Journal of Polymers and the Environment                  | 26, 2, | 838    |      | Q1 |
| 59. | Hatui G., Nayak G. C. ,Udayabhanu G., Mishra Y.K., Pathak D.D.                               | Correction: Template-free single pot synthesis of SnS <sub>2</sub> @Cu <sub>2</sub> O/reduced graphene oxide (rGO) nanoflowers for high performance supercapacitors | New Journal of Chemistry                                 | 42,    | 2702   |      | Q2 |
| 60. | Adhikari A.D., Oraon R., Tiwari S.K., Saren P., Lee J.H., Kim N.H., Nayak G. C.              | CdS- CoFe <sub>2</sub> O <sub>4</sub> @Reduced Graphene Oxide Nanohybrid: An Excellent Electrode Material for Supercapacitor Applications                           | Industrial and Engineering Chemistry Research            | 57, 5  | 1350   |      | Q1 |
| 61. | Adhikari A.D., Oraon R., Tiwari S.K., Saren P., Maity C.K., Lee J.H., Hoon K N., Nayak G. C. | Zn-doped SnO <sub>2</sub> nano-urchin-enriched 3D carbonaceous framework for supercapacitor application                                                             | New Journal of Chemistry                                 | 42, 2  | 955    |      | Q2 |
| 62. | Singh P.K., Das A.K., Hatui G., Nayak G. C.                                                  | Shape controlled green synthesis of CuO nanoparticles through ultrasonic assisted electrochemical discharge process and its application for supercapacitor          | Materials Chemistry and Physics                          | 198    | 16     | 2017 | Q1 |

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| 63. | Tiwari S.K., Hatui G., Oraon R., De Adhikari A., Nayak G. C.                     | Mixing sequence driven controlled dispersion of graphene oxide in PC/PMMA blend nanocomposite and its effect on thermo-mechanical properties                                   | Current Applied Physics                                                 | 17, 9 | 1158  | 2014 | Q2 |
| 64. | Tiwari S.K., Oraon R., De Adhikari A., Nayak G. C.                               | A thermomechanical study on selective dispersion and different loading of graphene oxide in polypropylene/polycarbonate blends                                                 | Journal of Applied Polymer Science                                      | 134,  | 4506  |      | Q2 |
| 65. | Tiwari S.K., Huczko A., Oraon R., De Adhikari A., Nayak G. C.                    | Facile electrochemical synthesis of few layered graphene from discharged battery electrode and its application for energy storage                                              | Arabian Journal of Chemistry                                            | 10, 4 | 556   |      | Q1 |
| 66. | Adhikari A.D., Oraon R., Tiwari S.K., Jena N.K., Lee J.H., Kim N.H., Nayak G. C. | Polyaniline-Stabilized Intertwined Network-like Ferrocene/Graphene Nanoarchitecture for Supercapacitor Application                                                             | Chemistry - An Asian Journal                                            | 12, 8 | 900   |      | Q1 |
| 67. | 50. Das S., Sahu S.K., Oraon R., Routray P.C., Baskey H., Nayak G. C.            | Reduced-graphene-oxide- And-strontium-Titanate-based double-layered composite: An efficient microwave-Absorbing material                                                       | Bulletin of Materials Science                                           | 40    | 301   |      | Q3 |
| 68. | Oraon R., De Adhikari A., Tiwari S.K., Nayak G. C.                               | Nanoclay Co-Doped CNT/Polyaniline Nanocomposite: A High-Performance Electrode Material for Supercapacitor Applications                                                         | ChemistrySelect                                                         | 2     | 8807  | 2015 | Q3 |
| 69. | Mishra J., Tiwari S.K., Abolhasani M.M., Azimi S., Nayak G. C.                   | Fundamental of polymer blends and its thermodynamics                                                                                                                           | Micro and Nano Fibrillar Composites (MFCs and NFCs) from Polymer Blends | --    | 27    |      | -  |
| 70. | Hatui G., Chandra Nayak G., Udayabhanu G., Mishra Y.K., Pathak D.D.              | Template-free single pot synthesis of SnS <sub>2</sub> @Cu <sub>2</sub> O/reduced graphene oxide (rGO) nanoflowers for high performance supercapacitors                        | New Journal of Chemistry                                                | 41    | 2702  |      | Q2 |
| 71. | Tiwari S.K., Verma K., Saren P., Oraon R., De Adhikari A., Nayak G. C., Kumar V. | Manipulating selective dispersion of reduced graphene oxide in polycarbonate/nylon 66 based blend nanocomposites for improved thermo-mechanical properties                     | RSC Advances                                                            | 7     | 22145 |      | Q1 |
| 72. | De Adhikari A., Oraon R., Tiwari S.K., Lee J.H., Kim N.H., Nayak G.C.            | A V <sub>2</sub> O <sub>5</sub> nanorod decorated graphene/polypyrrole hybrid electrode: a potential candidate for supercapacitors                                             | New Journal of Chemistry                                                | 41    | 1704  |      | Q2 |
| 73. | Hatui G., Nayak G. C., Udayabhanu G.                                             | One Pot Solvothermal Synthesis of Sandwich-like Mg Al Layered Double Hydroxide anchored Reduced Graphene Oxide: An excellent electrode material for Supercapacitor             | ElectrochimicaActa, Sci,                                                | 219   | 214   | 2016 | Q1 |
| 74. | Tiwari S.K., Kumar V., Huczko A., Oraon R., Adhikari A.D., Nayak G.C.            | Magical Allotropes of Carbon: Prospects and Applications                                                                                                                       | Critical Reviews in Solid State and Materials Sciences                  | 41    | 257   |      | Q1 |
| 75. | Tiwari S.K., Huczko A., Oraon R., De Adhikari A., Nayak G. C.                    | A time efficient reduction strategy for bulk production of reduced graphene oxide using selenium powder as a reducing agent                                                    | Journal of Materials Science                                            | 51    | 6156  |      | Q1 |
| 76. | Singh P.K., Kumar P., Hussain M., Das A.K., Nayak G.C.                           | Synthesis and characterization of CuO nanoparticles using strong base electrolyte through electrochemical discharge process                                                    | Bulletin of Materials Science                                           | 39    | 469   |      | Q3 |
| 77. | Oraon R., De Adhikari A., Tiwari S.K., Nayak G.C.                                | Enhanced Specific Capacitance of Self-Assembled Three-Dimensional Carbon Nanotube/Layered Silicate/Polyaniline Hybrid Sandwiched Nanocomposite for Supercapacitor Applications | ACS Sustainable Chemistry and Engineering                               | 4     | 1392  |      | Q1 |
| 78. | Oraon R., De Adhikari A., Tiwari S.K., Nayak G. C.                               | Nanoclay-based hierarchical interconnected mesoporous CNT/PPy electrode with improved specific capacitance for high performance supercapacitors                                | Dalton Transactions                                                     | 45    | 9113  | 2015 | Q1 |
| 79. | Saini R., Roy D., Das A.K., Dixit A.R., Nayak G. C.                              | Tribological behaviour and characterisation of Ni-WS <sub>2</sub> composite coating                                                                                            | International Journal of Surface Science and Engineering                | 10    | 240   |      | Q3 |
| 80. | Oraon R., De Adhikari A., Tiwari S.K., Bhattacharyya S., Nayak G. C.             | Hierarchical self-assembled nanoclay derived mesoporous CNT/polyindole electrode for supercapacitors                                                                           | RSC Advances                                                            | 6, 69 | 6427  |      | Q1 |
| 81. | Oraon R., De Adhikari A., Tiwari S.K., Sahu T.S., Nayak G. C.                    | Fabrication of nanoclay based graphene/polypyrrolenanocomposite: An efficient ternary electrode material for high performance supercapacitor                                   | Applied Clay Science                                                    | 118   | 231   |      | Q1 |
| 82. | Oraon R., De Adhikari A., Tiwari S.K., Nayak G. C.                               | Nanoclay based graphene polyaniline hybrid nanocomposites: Promising electrode materials for supercapacitors                                                                   | RSC Advances                                                            | 5, 84 | 6833  |      | Q1 |
| 83. | Das S., Nayak G. C., Sahu S.K., Oraon R.                                         | Development of FeCoB/Graphene Oxide based microwave absorbing materials for X-Band region                                                                                      | Journal of Magnetism and Magnetic Materials                             | 38    | 22    |      | Q  |

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|------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------|-------|------|----|
| 84.  | De Adhikari A., Oraon R., Tiwari S.K., Lee J.H., Nayak G. C.                    | Effect of waste cellulose fibres on the charge storage capacity of polypyrrole and graphene/polypyrrole electrodes for supercapacitor application                                  | RSC Advances                                         | 5, 35  | 27347 |      | Q1 |
| 85.  | Das S., Nayak G. C., Sahu S.K., Routray P.C., Roy A.K., Baskey H.               | Titania-Coated Magnetite and Ni-Ferrite Nanocomposite-Based RADAR Absorbing Materials for Camouflaging Application                                                                 | Polymer Plastics Technology and Engineering          | 54,    | 1483  |      | Q2 |
| 86.  | Das S., Nayak G. C., Sahu S.K., Routray P.C., Roy A.K., Baskey H.               | Microwave Absorption Properties of Double-Layer RADAR Absorbing Materials Based on Doped Barium Hexaferrite/TiO <sub>2</sub> /Conducting Carbon Black                              | Journal of Engineering (United States)               | 2014   | --    | 2014 | Q2 |
| 87.  | Uddin M.E., Kuila T., Nayak G. C., Kim N.H., Ku B.-C., Lee J.H.                 | Effects of various surfactants on the dispersion stability and electrical conductivity of surface modified graphene                                                                | Journal of Alloys and Compounds                      | 562    | 134   | 2013 | Q1 |
| 88.  | Hatui G., Nayak G. C., Das C.K., Yadav S.B.                                     | Modification of MWCNT and its effect on ABS/LCP blend system                                                                                                                       | Journal of Applied Polymer Science                   | 12     | 57    |      | Q2 |
| 89.  | Uddin M.E., Kuila T., Nayak G. C., Kim N.H., Ku B.-C., Lee J.H.                 | Effects of various surfactants on the dispersion stability and electrical conductivity of surface modified graphene                                                                | Journal of Alloys and Compounds                      | 562    | 134   |      | Q1 |
| 90.  | Nayak G. C., Sahoo S., Rajasekar R., Das C.K.                                   | Novel approach for the selective dispersion of MWCNTs in the Nylon/SAN blend system                                                                                                | Composites Part A: Applied Science and Manufacturing | 43     | 1242  | 2012 | Q1 |
| 91.  | Karthikeyan G., Sahoo S., Nayak G. C., Das C.K.                                 | Doping effect of polyaniline/MWCNT composites on capacitance and cyclic stability of supercapacitors                                                                               | Journal of Nanoscience and Nanotechnology            | 12     | 2704  |      | Q3 |
| 92.  | Das C.K., Nayak G. C., Friedrich S., Gehde M.                                   | Vibration welding of amorphous thermoplastic nanocomposites                                                                                                                        | Materials and Manufacturing Processes                | 27     | 786   |      | Q1 |
| 93.  | Sahoo S., Nayak G. C., Das C.K.                                                 | Synthesis and electrochemical characterization of modified graphene/polypyrrole nanocomposites                                                                                     | Macromolecular Symposia                              | 31     | 17    |      | Q3 |
| 94.  | Nayak G. C., Sahoo S., Das S., Karthikeyan G., Das C.K., Saxena A.K., Ranjan A. | Compatibilization of polyetherimide/liquid crystalline polymer blend using modified multiwalled carbon nanotubes and polyphosphazene as compatibilizers                            | Journal of Applied Polymer Science                   | 124    | 629   |      | Q2 |
| 95.  | Karthikeyan G., Sahoo S., Nayak G. C., Das C.K.                                 | Investigations on doping of poly(3-methyl-thiophene) composites for supercapacitor applications                                                                                    | Macromolecular Research                              | 20     | 351   |      | Q2 |
| 96.  | Sahoo S., Karthikeyan G., Nayak G. C., Das C.K.                                 | Modified graphene/polyaniline nanocomposites for supercapacitor application                                                                                                        | Macromolecular Research                              | 20     | 41    |      | Q2 |
| 97.  | Rajasekar R., Nayak G. C., Malas A., Das C.K.                                   | Development of compatibilized SBR and EPR nanocomposites containing dual filler system                                                                                             | Materials and Design                                 | 35     | 87    |      | Q1 |
| 98.  | Nayak G. C., Rajasekar R., Sahoo S., Das C.K., Saxena A.K., Ranjan A.           | Effect of polyphosphazene and modified carbon nanotubes on the morphological and thermo-mechanical properties of polyphenylene sulfide and liquid crystalline polymer blend system | Journal of Materials Science                         | 46     | 7672  |      | Q1 |
| 99.  | Kumar S., Rajasekar R., Nayak G. C., Das C.K.                                   | Polycarbosilane-derived silicon carbide-functionalized multi-walled carbon nanotubes and influence on the polyethersulfone nanocomposites                                          | Journal of Composite Materials                       | 45     | 2225  |      | Q2 |
| 100. | Sahoo S., Karthikeyan G., Nayak G. C., Das C.K.                                 | Electrochemical characterization of in situ polypyrrole coated graphene nanocomposites                                                                                             | Synthetic Metals                                     | 16     | 17    | 2011 | Q1 |
| 101. | Bose S., Nayak G. C., Das C.K.                                                  | Artificial neural network-based approach for prediction of surface energy in polymeric composites using machine vision in scanning electron microscopy study                       | Journal of advanced Microscopy research              | 6      | 116   |      | Q4 |
| 102. | Nayak G. C., Rajasekar R., Das C.K.                                             | Effect of modified MWCNT on the properties of PPO/LCP blend                                                                                                                        | Journal of Materials Science                         | 46     | 20    |      | Q1 |
| 103. | Rajasekar R., Nayak G. C., Das C.K.                                             | Development of EPDM nanocomposites in presence of compatibiliser                                                                                                                   | Plastics, Rubber and Composites                      | 40     | 14    |      | Q3 |
| 104. | Nayak G. C., Rajasekar R., Das C.K.                                             | Dispersion of SiC coated MWCNTs in PEI/silicone rubber blend and its effect on the thermal and mechanical properties                                                               | Journal of Applied Polymer Science                   | 119    | 3574  | 2010 | Q2 |
| 105. | Nayak G. C., Rajasekar R., Das C.K.                                             | Effect of SiC coated MWCNTs on the thermal and mechanical properties of PEI/LCP blend                                                                                              | Composites Part A: Applied Science and Manufacturing | 41     | 1662  |      | Q1 |
| 106. | Bose S., Mukherjee M., Pal K., Nayak G. C., Das C.K.                            | Development of core-shell structure aided by SiC-coated MWNT in ABS/LCP blend                                                                                                      | Polymers for Advanced Technologies                   | 21     | 27    |      | Q2 |
| 107. | Mukherjee M., Bose S., Nayak G. C., Das C.K.                                    | A study on the properties of PC/LCP/MWCNT with and without compatibilizers                                                                                                         | Journal of Polymer Research                          | 17     | 26    |      | Q2 |
| 108. | Mukherjee M., Nayak G., Bose S., Das C.K.                                       | Improvement of the properties of PC/LCP/MWCNT with or without silane coupling agents                                                                                               | Polymer - Plastics Technology and Engineering        | 48, 11 | 1107  | 2009 | Q2 |

## 2. Detail of patents

| S.No. | Patent Title                                                                                                                              | Name of Applicant (s) | Patent No.   | Award Date     | Agency/Country | Status    |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|----------------|----------------|-----------|
| 1     | Development Of Hybrid Nanocomposites Based Radar Absorbing Materials And Process Of Preparation                                           | Prof. G.C. Nayak      | 202111034760 | August 2, 2021 | Indian Patent  | Published |
| 2     | Cow dung-derived hybrid adsorbent for heavy metal removal and its subsequent utilization as cheaper electrodes for energy storage devices | Prof. G.C. Nayak      | -            | -              | Indian Patent  | Filled    |
| 3     | A sustainable fiber board material using red mud (bauxite residue) and agricultural biomass                                               | Prof. G.C. Nayak      | 202431041041 | -              | Indian Patent  | Filled    |

## 3. Books/Reports/Chapters/General articles etc.

| S. No. | Title                                                                                                | Author's name                                                              | Publisher       | Year |
|--------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------|------|
| 1.     | MXene and Its Composites for Industrial Applications                                                 | Mishra,P.P.;Behara,A.K.;Das,N.;Sahoo,S.;Nayak,G.C.                         | Springer        | 2025 |
| 2.     | MXene and Its Composites for Battery Applications                                                    | Maity,C.K.;Kumari,K.;Siddiki,S.H.;Nayak,G.C.                               | Springer        | 2025 |
| 3.     | MXene and Their Composites for Oxygen Evolution Reactions                                            | De, S., Roy, S., Nayak, G.C.                                               | Springer        | 2023 |
| 4.     | 2D Materials for Solar Cell Applications                                                             | S. De, S. Acharya, S. Sahoo, A. K. Das, G. C. Nayak                        | Wiley           | 2021 |
| 5.     | Recent Progress in Electrospinning Technologies for Graphene-Based Materials                         | S. De, S. Sahoo, Ashok Kumar Das & G. C. Nayak                             | Springer        | 2021 |
| 6.     | Present status of biomass-derived carbon-based composites for supercapacitor application             | S. De, S. Acharya, S. Sahoo, G. C. Nayak                                   | Elsevier        | 2020 |
| 7.     | Surface Engineering of Graphene, Carbon Nanostructures Series                                        | S. Sahoo, Santosh Kumar Tiwari, G. C. Nayak                                | Springer        | 2019 |
| 8.     | Recycling of Rubber Blends for Durable Construction in Rubber Recycling: Challenges and Developments | Palaniappan S.K., Rathanasamy R., Pal S.K., Nayak G. C.                    | RSC             | 2019 |
| 9.     | Recycling of rubber composites and nanocomposites in Rubber Recycling: Challenges and Developments   | Shanmugam R., Palaniappan S.K., Rathanasamy R., Kasilingam K., Nayak G. C. | RSC             | 2019 |
| 10.    | Compression for multiphase products in Multicomponent Polymeric Materials                            | Nayak G. C. , Hatui G.                                                     | Springer        | 2016 |
| 11.    | Paints and Coating of Multicomponent Product in Multicomponent Polymeric Materials                   | Kumar P.S., Rajasekar R., Pal S. K., Nayak G. C.                           | Springer        | 2016 |
| 12.    | LCP Based Polymer Blend Nanocomposites, Liquid Crystalline Polymers                                  | Nayak G. C. , Das C.K.                                                     | Springer        | 2015 |
| 13.    | Kevlar Fiber-Reinforced Polymer Composites in Polymer Composites                                     | Das C.K., Nayak G. C. , Rajasekar R.                                       | Wiley Publisher | 2012 |

## 4. Languages

| Language | Read (Excellent/Good/Fair) | Write (Excellent/Good/Fair) | Speak (Excellent/Good/Fair) |
|----------|----------------------------|-----------------------------|-----------------------------|
| English  | Excellent                  | Excellent                   | Excellent                   |
| Hindi    | Excellent                  | Good                        | Excellent                   |
| Odiya    | Excellent                  | Excellent                   | Excellent                   |

## 5. Current research Activities (Ongoing projects)

1. Cow Dung based hybrid energy storage devices, SUTRA, 2021-2024
2. Layered nanocomposite composed of graphene carbon quantum dots and MXene coated with calcium oxide nanoparticles for large scale carbon dioxide capture and translation into nano-fertilizer. UKIERI-SPARC, 2024-2026
3. Feasibility of bulk scale production of S/N-doped porous carbon and graphitic-C<sub>3</sub>N<sub>4</sub> based metal chalcogenides anodes for sodium-ion battery, IIT(ISM), 2023-2025.
4. Electrocatalytic and photo electrocatalytic reduction of protons or carbon dioxide, STINT, 2024-2026.

### Research Activities (Completed projects)

1. Synthesis and Functionalization of Graphene for controlled dispersion in Polymer Blends. DST, SERB, 2013-2016.
2. Synthesis and modification of nanofibers for polymer nanocomposites, IIT (ISM), 2013-2016.
3. Development of hybrid nanocomposites based wide band radar absorbing materials (1-12 Ghz), DRDO, 2017-2019.
4. 2D Nanomaterials for Energy Storage, IUSSTF, 2018-2020.
5. Extraction of Nanocellulose from Wastepaper for production of biodegradable, flexible and cheaper electrodes for energy storage devices, SERB, DST, 2018-2021.
6. From waste to wealth: biomass-derived porous carbon materials for the fabrication of high-performance Na-ion batteries, TEQIP-III, 2018-2021.

## 6. Partnerships and International Collaborations

- **Prof. V. Berry**, Professor, Department of Chemical Engineering, University of Illinois, Chicago, USA.
- **Prof. J. H. Lee**, Professor, Jeonbuk National University, Chonbuk National University, South Korea.
- **Prof. J. J. Shim**, Professor, School of Chemical Engineering, Yeungnam University, Korea.
- **Prof. D. Akinwande**, Professor, Electrical and Computer Engineering, The University of Texas at Austin, USA.
- **Prof. V.K. Thakur**, Professor, Scotland's Rural College (SRUC), Edinburgh, United Kingdom.
- **Prof. M. J. Kim**, Professor, Department of Chemistry, Gachon University, Republic of Korea.

## 7. Significant accomplishments:

Two technologies for utilization of Red mud and Mine Waste water ready at TRL level 4 and patents filled.