PERSONAL INFORMATION

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11	TEACHING	2018 onwards (28 February 2024 onwards at RIE Mysore)
12	RESEARCH	2012 onwards
(a)	PROJECTS	Development of Hybrid Energy Materials for Photocatalysis: Environment Remediation and Energy Production, Sponsor: DST-SRG, Amount: 3058379, Year of Sanctioned: 26 November 2020, Year of Completion : 25 November 2022, File Number: SRG/2020/001737 (Completed)
(b)	PUBLICATIONS	No. of Publications: 107+ Citations in Google Scholar: 3425+ ; h-index: 34+ ; i10-index- 72+ Details of Research Publications in Journals 1. Lee, C.W., Jung, S.Y., Ryu, J.H., Jeon, G.S., Gaur, A., Cho, M.S., Ali, G., Kim, M., Chung, K.Y., Nayak, A.K. and Shin, S., 2024. Empowering Tri-Functional Palladium's Catalytic Activity and Durability in Electrocatalytic Formic Acid Oxidation Reaction via Innovative Self-Caging and Alloying Strategies. Advanced Science, 11, p.2470283. (Impact Factor – 17.52). https://doi.org/10.1002/advs.202405725 2. Kim, M.G., Gaur, A., Cho, M.S., Nayak, A.K., Mhin, S. and Han, H., 2024. S-doped amorphous multi-metal borophosphates for efficient alkaline seawater oxidation with a high corrosion resistance. Applied Surface Science, 679, p.161222. (Impact Factor – 6.3). https://doi.org/10.1016/j.apsusc.2024.161222 [Published] 3. Enkhbayar, E., Gaur, A., Jang, J.U., Nayak, A.K., Na, K.H., Choi, W.Y. and Han, H., 2024. Self-supported Electrocatalyst for Seawater Splitting. ChemElectroChem, 11, p.e202300835. (Impact Factor – 4.0). https://doi.org/10.1002/celc.202300835 [Published] 4. Jalalah, M., Nayak, A.K.* and Harraz, F.A.*, 2024. Eco-friendly preparation of nitrogen-doped porous carbon materials for enhanced solid-state supercapacitor device. Diamond and Related Materials, 147, p.111264.(Impact Factor – 4.1). https://doi.org/10.1016/j.diamond.2024.111264 [Published] 5. Chakraborty, R., Sharma, A., Maji, P.K., Rudra, S., Nayak, A.K., Chatterjee, P.N., Banothu, Y.N. and Pradhan, M., 2024. Nitrogen and oxygen self-doped hierarchical porous carbon nanosheets derived from turmeric leaves for high-performance supercapacitor. Inorganica Chimica Acta, 567, p.122056. (Impact Factor – 2.8). https://doi.org/10.1016/j.ica.2024.122056 [Published] 6. Sasmal, A., Nayak, A.K.*, Khan, M.E.*, Ali, W., Ali, S.K. and Bashiri, A.H., 2024. Excellent electrochemical performance of N and Mn doped NiCo2O4 functional nanostructures: an effective approach for symmetric supercapacitor application. Physica

		Scripta, 99(8), p.085919. (Impact Factor – 2.9). DOI: 10.1088/1402-4896/ad5c15 [Published] 7. Jhariat, P., Warrier, A., Sasmal, A., Das, S., Sarfudeen, S., Kumari, P., Nayak, A.K. and Panda, T., 2024. Reticular synthesis of two-dimensional ionic covalent organic networks as metal-free bifunctional electrocatalysts for oxygen reduction and evolution reactions. Nanoscale. (Impact Factor – 6.7). https://doi.org/10.1039/D3NR05277J [Published] 8. Jalalah, M., Han, H., Nayak, A.K.* and Harraz, F.A.*, 2024. High-performance supercapacitor based on self-heteroatom-doped porous carbon electrodes fabricated from Mikania micrantha. Advanced Composites and Hybrid Materials, 7(1), p.20. (Impact Factor – 20.1). https://doi.org/10.1007/s42114-024-00833-6 [Published] 9. Shruti, M.S., Sasmal, A., Han, H.* and Nayak, A.K.*, 2024. Facile synthesis of N-doped V2O5@g-C3N4 electrodes for enhanced symmetric supercapacitor application. Materials Chemistry and Physics, 314, 128826. (Impact Factor – 4.6). https://doi.org/10.1016/j.matchemphys.2023.128826 [Published] 10. Pai, S.H.S., Pandey, S.K., Samuel, E.J.J., Jang, J.U., Nayak, A.K.* and Han, H., 2024. Recent advances in NiO-based nanostructures for energy storage device applications. Journal of Energy Storage, 76, p.109731. (Impact Factor – 9.4). https://doi.org/10.1016/j.est.2023.109731 [Published] 11. Paunkumar, P., Sasmal, A., Nayak, A.K. and Babu, S.G., 2023. Facile room temperature synthesis of CoOOH for high-performance supercapacitor application: comparison with other metal oxyhydroxides (MOOH; M= Al, Mn or Fe). Journal of Solid State Electrochemistry, 28(7), pp.2071-2079. (Impact Factor – 2.5). https://doi.org/10.1007/s10008-023-05741-1 [Published] 12. Chaturvedi, J., Munthasir, A.T.M., Nayak, A.K., Tripathi, L.N., Thilagar, P. and Jagirdar, B.R., 2023. Shape and Phase-Controlled One-Pot Synthesis of Air Stable Cationic AgCdS Nanocrystals, Optoelectronic and Electrochemical Hydrogen Evolution Studies. Small Methods,8, p.2300907.. (Impact Factor – 12.4). https://doi.org/10.1002/smtd.202300907 [Published] 13. Thao, N.T.T., Jang, J.U., Nayak, A.K.* and Han, H., 2023. Current Trends of Iridium-Based Catalysts for Oxygen Evolution Reaction in Acidic Water Electrolysis. Small Science, 4(1) p.2300109. (Impact Factor – 12.7). https://doi.org/10.1002/smsc.202300109 [Published] 14. Han, H., Jang, J.U., Oh, D., Na, K.H., Choi, W.Y., Jayakrishnan, N. and Nayak, A.K.*, 2023. Advances and Perspectives of Titanium-Based Nanocomposites for Energy Generation and Environmental Remediation Applications: A Review. Energy & Fuels, 37 (23), 17708-17735 (Impact Factor – 5.3). https://doi.org/10.1021/acs.energyfuels.3c02382 [Published] 15. Han, H.S., Kim, S.J, Jung, S.Y., Oh, D., Nayak, A.K., Jang, J.U., Bang, J., Yeo, S., Ali, G., and Shin, T.H., 2023. Amorphous-Crystalline Interfaces on Hollow Nanocubes Derived from Ir-Doped Ni–Fe–Zn Prussian Blue Analog Enables High Capability of Alkaline/Acidic/Saline Water Oxidations. Small, 19(49), p. 2303912. (Impact Factor – 15.153). https://doi.org/10.1002/smll.202303912 [Published with Cover Art] 16. Pai, S.H.S., Sasmal, A., Nayak, A.K.* and Han, H.*, 2023. Facile Solvothermal Synthesis of NiO/gC3N4 Nanocomposite for Enhanced Supercapacitor Application. International Journal of Energy Research, vol. 2023, Article ID 1524859, 18 pages. (Impact Factor – 4.672) https://doi.org/10.1155/2023/1524859 [Published] 17. Chakraborty, R., Das, S., Rudra, S., Nayak, A.K., Maji, P.K., Nandi, U. and Pradhan, M., 2023. Investigation of Electrical Transport Properties in Solution-Processed Bi2Se3-AgMnOOH Nanocomposite. Physical Chemistry Chemical Physics, 25, 14606-14617. (Impact Factor – 3.676) https://doi.org/10.1039/D3CP00642E [Published] 18. Jalalah, M., Han, H., Nayak, A.K.* and Harraz, F.A.*, 2023. Biomass-derived metal-free porous carbon electrocatalyst for efficient oxygen reduction reactions. Journal of the Taiwan Institute of Chemical Engineers, 147, p.104905. (Impact Factor – 5.477) https://doi.org/10.1016/j.jtice.2023.104905 [Published] 19. Thao, N.T.T., Kim, K., Ryu, J.H., An, B.S., Nayak, A.K., Jang, J.U., Na, K.H., Choi, W.Y., Ali, G., Chae, K.H. and Akbar, M., 2023. Colossal Dielectric Perovskites of Calcium Copper Titanate (CaCu3Ti4O12) with Low-Iridium Dopants Enables Ultrahigh Mass Activity for the Acidic Oxygen Evolution Reaction. Advanced Science,

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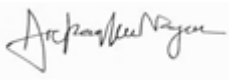
		9780128230503 (eBook) 10/2021 10 Muktikanta Panigrahi, Arpan Kumar Nayak Polyaniline based Composite for Gas Sensors https://doi.org/10.34256/ioriip212 IOR 230 9789390853977 (Paper back) 9789390853403 (eBook) 11/2021
	PATENT	Title: Composition for improving the photodegradation of a dye solution Filing/Priority Date: 27-September-2022 Application No: 202241055443 Ref: MY157111 INC
13	SEMflv CONFERENCE/ SYMPOS IUM/ WORKSHOP	Conference/Workshop Proceedings: 1. Nayak, A.K., Rout, S., Rachee, J., Das, D., Pradhan, D. Microwave-Assisted Hydrothermal Synthesis of Sn-Based Nanostructured Materials as Efficient Electrocatalyst for Oxygen Reduction Reaction in theSingle-Chambered Microbial Fuel Cell. INDO-EU joint workshop on "The Recent Developments in Microbial Fuel Cell and Membrane Bioreactor Technology", February 02-03, (2018) 3. Nayak, A. K., Ghosh, R., Santra, S., Guha, P. K., & Pradhan, D. Nanostructured WO3-SnO2 for Selective Sensing of Volatile Organic Compounds. ICFM-2016, IIT Kharagpur, India, Dec 12-14 (2016). 5. Nayak, A. K., Ghosh, R., Santra, S., Guha, P. K., & Pradhan, D. WO3-SnO2 Nanostructured sensors for Selective Detection f VOCs for Breath Analysis. ISCA Bhubaneswar Chapter-2015, KIIT University, BBSR, India, Dec 09-11 (2015). 6. Nayak, A. K., Ghosh, R., Santra, S., Guha, P. K., & Pradhan, D. Novel Nanomaterial Sensors for Selective Detection of Breath Analysis. Ballistics -A Multidisciplinary Physical Science-2015, Fakir Mohan University, Vyasa Vihar, India, Feb 14-15 (2015). 7. Nayak, A. K., & Pradhan, D. Bio-Molecule Assisted Hydrothermal Synthesis Of Indium Sulfide Microspheres With Sheet-like/Brick-like Subunits and Their Visible Light Photocatalytic Activity. 8th Singapore International Chemistry Conference 2014 (SICC-8), Dec 14-17 (2014). 8. Nayak, A. K., & Pradhan, D. Synthesis of In(OH)3 and In2O3 and Their Photocatalytic Performances. Nanoscience on Ballistics-2014, Fakir Mohan University, India, Mar 07-08 (2014). 9. Nayak, A. K., Sohn, Y., & Pradhan, D. Template Free Surfactant Less Hydrothermal Synthesis of In2S3 Microspheres Sheat/Brick like Subunits and Their Photocatalytic Activity. Daegu Gyeongbuk Institute of Science and Technology (DGIST) South Korea, 24th Aug (2014). PRESENTATION IN SUMMER SCHOOL: 10. Nayak, A. K. (Group leader) Synthesis of Nanostructured Materials/Single Crystal Heterostructure and Their Characterization. DST-SERC School on Single Crystals of Functional Materials and their Applications-2015, SSN College of Engineering, Chenai, India, Sept 02-22 (2015). PARTICIPATED IN DIFFERENT EVENTS: 1. Rashtriya Karmayogi Large Scale Jan Seva Program provided by "Capacity Building Commission with Knowledge Partner-Illumine Knowledge Resources " conducted on 20th August 2025 at RIE Mysore. (Participated) 2. Five-day workshop on "E-Content Development" at RIE Mysuru from 03rd to 07th June 2025. 3. Participated as volunteer in 'Nation Yoga Olympiad-2024' organized by NCERT at RIE Mysuru from 18-20th June 2024. 4. Workshop titled 'Capacity Building Workshop for Master Trainers on Newly Developed Learning Teaching Material (LTM) of Foundational and Preparatory Stages' from 22nd – 24th October 2024 at RIE Mysuru. 5. Two-day National Conference on Innovative Practices and Experiences in School Based Career Development Programmes for Students on 30-31st January 2025 at RIE Mysuru. 6. One day Hindi workshop titled "Official Language: Configuration and Development" on 22nd November 2024, RIE Mysuru. 7. 21day Orientation Programme organized by NCERT on 03-28th March 2025 (NCERT) 8. Faculty Induction Programme at IIM Nagpur on 03-07th February, 2025 (NCERT) 9. Hindi workshop "Official Language Configuration and Information Technology" on 18th March 2025 at Regional Institute of Education, Mysuru

		10. Nano Symposium 2020- Nano and Energy: Trends, Challenges and Solutions. Springer Nature, 19th June (2020). 11. Faculty development Programme on "Attempt of application to magnetic memory or 3-D display devices in BiFeO3-based multiferroic films - Fabrication of high-qualified films, material research, and functional verification" organized by Centre for Crystal Growth, VIT, Vellore, 18th Sep. (2019) 12. FDP on Orientation Session on Digital Pad Exam Processes facilitated by O/o Dean, Academics, VIT, Vellore organized by Academic Staff College of VIT, Vellore, 25th April (2019) 13. Workshop on Development of Advanced Electrochemical Energy storage Devices organized by Center for Nanotechnology Research (CNR), VIT, Vellore, 8th March (2019) 14. Faculty Development Programme (FDP) on Digital Online Content Creation in Basic Sciences, School of Advanced Sciences of VIT, Vellore, 19th Jan (2019). 15. FDP on MHRD- Leadership Talk Series- Live Telecast, Academic Staff College in Association with Institution's Innovation Council of VIT, Vellore,, 24th Jan (2019). 16. Workshop on Scholarly Publishing-2015. Willey, Central Library, IIT Kharagpur India, 23rd March (2015). 17. Workshop on Author Publishing-2015. Springer, Central Library, IIT Kharagpur India, 16rd Jan (2015). INVITED/KEYNOTE SPEAKERS 1. Invited talk delivered entitled "Bio-Waste Derived Functional Materials for Energy Applications" on 16th September 2025 at "Faculty Induction Programme (Online) - 24 Days" during 15th September to 14th October 2025 Organized by UGC-Malaviya Mission Teacher Training Centre, RIE Mysuru (Invited Speaker) 2. 5 day workshop on module development in Science education for the project entitled "Capacity building programme on science education in context of NEP 2020 for trained graduate teachers and middle stage teachers of western region" invited as resource person to develop module at RIE Bhopal during 8th September 2025 to 12th September 2025. (Resource Expert) 3. 38th National Convention of Metallurgical and Materials Engineers, Conference titled on "Capacity Building in Process Metallurgy" invited to delivered a talk on "Materials Processing and development" during 26-27th July, 2025 at NIT Rourkela. (Plenary Speaker) 4. One Week International Faculty Development Programme on "Research Methodology AI Tools and Publication Strategies" organised by the Research & Development Cell at Gandhi Institute of Excellent Technocrats (GIET), Ghangapatna, Bhubaneswar, India from 21st to 26th of July 2025. (Resource Person) 5. A Guest Lecture on "Traditional Indian Knowledge: A Scientific Perspective" at Sri Dharmasthala Manjunatheshwar College (Autonomous), Ujire on 12th July 2025 (Resource Person) 6. Workshop on "Sensitisation of National Education Policy (NEP) – 2020" organized by Gandhi Academy of Technology and Engineering, Golanthara, Berhampur, Odisha on 23rd June, 2025 at our Conference Hall. (Resource Person) 7. Active part as a Resource Person in three days workshop of PAC programme titled "Training on Experiment Based Learning and Project Method of Learning Science at Middle School Stage" from 25th – 27th September 2024 at RIE Mysuru. (Resource Person) 8. Role of Hydrogen for Chandrayaan by Arpan Kumar Nayak as speaker on National Science Day, 23rd August 2024 at A.V. Hall, RIE Mysuru. (Resource Speaker) 9. Biowaste and its Utilization towards Energy Applications by Arpan Kumar Nayak as Invited speaker at the National Seminar "Envisioning Viksit Bharat @2047: Achieving Environment Sustainability through Collaboration" by Department of Chemistry with collaboration of Department of Political Science, St. Aloysius College (Autonomous), Jabalpur, sponsored by ICSSR, New Delhi, 23rd – 24th August 2024. (Invited Speaker) 10. Advanced Functional Materials for Environmental Remediation and Energy Application by Arpan Kumar Nayak as resource person on Faculty Development Programme organized by Department of Applied Science and Humanities, MIT- ADT

		University, Pune on 16th December 2024 (Resource Speaker). 11. Complete Journey of Research – Materials to Manuscript Writing by Arpan Kumar Nayak for 'Workshop on Materials to Manuscript Writing' organized by Gandhi Academy of Technology and Engineering, Golanthara, Berhampur, Odisha on 21st February, 2025 (Resource Speaker). 12. Advanced Functional Materials Synthesis for Energy and Environment Applications by Arpan Kumar Nayak for 'International Symposium on Materials of the Millennium: Emerging Trends and Future Prospects (MMETFP-2021)' Organized by: Department of Chemistry & Physics, School of Technology, Pandit Deendayal Energy University on 19-21th Nov 2021 (Invited Speaker) 13. XRD Data Plot and Data Analysis (Origin/Xpert High Score) by Arpan Kumar Nayak for "Virtual Workshop on XRD" at Bajaj College of Science, Wardha on 23th July 2020. (Invited Speaker) 14. Nanomaterials for Environment and Energy Applications by Arpan Kumar Nayak for "International Virtual Conference on Recent Trends in Nanomaterials Synthesis & Application (RTNSA-2020) at Madanapalle Institute of Technology and Science, Department of Chemistry, Andhra Pradesh on 16-18th July 2020. (Invited Speaker) 15. Nanostructure Engineering for Environment and Energy Applications by Arpan Kumar Nayak for "Webinar Series" at Kalinga Institute of Social Sciences (KISS), Deemed to be University, BBSR, Odisha on 16th July 2020. (Invited Speaker) 16. Bandgap Engineering Nanostructured Materials for Environment and Energy Applications by Arpan Kumar Nayak for "National Conference on Impact of Physics in Medical & Environmental Research (iPhyMER–20)" at Indo-American College, Tamilnadu on 6th March 2020. (Invited Speaker) 17. Transition Metal Oxide Based Nanostructured Materials for Environment and Energy Applications by Arpan Kumar Nayak for "2nd International Conference on Processing and Characterization of Materials" (ICPCM-2019)" at NIT Rourkela, 12th - 14th December 2019. (Invited Speaker) 18. Nanostructured Materials for Potential Environment and Energy Applications by Arpan Kumar Nayak. National Conference on "Science of Engineering Materials" (NCSEM-2019) at North Odisha University, 3rd – 4th April 2019. (Inaugural speaker) 19. Nanostructured Engineered Materials for Environment and Energy Applications by Arpan Kumar Nayak. Short term course on "Process metallurgy and its environmental impact" at NIT Rourkela, 21th – 25th February 2019. (Invited Speaker) 20. Tungsten Oxide Based Nanostructured Materials for Environmental and Energy Applications by Arpan Kumar Nayak. "The 5th Symposium of the Research Institute of Industrial Science Supported by Key Research Institutes in Universities Program through the National Research Foundation of Korea -2018" at Hanyang University, Seoul, South korea, on 7th, September, 2018. (Invited Speaker) 21. Nanostructured Materials for Environmental and Energy Applications by Arpan Kumar Nayak. "International Conference On Advanced Engineering Functional Materials-2017" at GITA, Bhubaneswar, Odisha, India during 21st-23rd, September, 2017. (Invited Speaker) 22. Nanostructured Materials for Gas Sensors and Energy Applications by Arpan Kumar Nayak. Department of Chemistry, NIT Meghalaya, India. 08th May, 2017 (Guest Lecture and Scientific Discussion) 23. Synthesis of Nanostructured Materials for Sensor and Energy Based Applications by Arpan Kumar Nayak. NCAEM-2016, GIET Gunupur, India, 23-24th July, 2016 (Invited Speaker)
t4	DEVELOPMENT	Research Developed various materials using biomass and fabricated for various devices for energy and environmental remediation applications. Teaching Developed modules in PAC programs for science education
15	TRAINING	Various training programs as Resource Person
16	EXTENSION	

17	OTHER INEORMATION	MAJOR BOARD POSITIONS ◎ Editor-in-Chief: International Research Journal of Multidisciplinary Technovation (Web of Science-Publons partner, Scopus Index) ◎ https://journals.asianresassoc.org/index.php/irjmt ◎ Editor: Bulletin of Scientific Research ◎ https://journals.asianresassoc.org/index.php/bsr/about/editorialTeam ◎ Editor in Chief: Journal of Applied Physics and Engineering (2019-2021) https://journals.eleyon.org/index.php/jape/about/editorialTeam ◎ Guest Editor of journals: 1) Materials Today Proceeding, Elsevier, 2) Int. J. of Materials and Product Technology, Inder Science. (2019-2021) ◎ Associate Editor: Nanoscale Reports (2019-2021) https://journals.eleyon.org/index.php/nr/about/editorialTeam ◎ Co-coordinator of Membership at Advnced Engineering Materials Research Foundation (http://www.aemrf.com/) (April, 2018 – Present) ◎ Reviewer in various Journals: Progress in Energy and Combustion Science, Elsevier (I.F. – 35.34); Journal of Materials Chemistry A, RSC (I.F. - 10.7); Materials Advances, RSC (I.F.-5.2); New Journal of Chemistry A, RSC (I.F. - 2.7); Physical Chemistry Chemical Physics Journal, RSC (I.F. - 2.9); ACS Applied Nano Materials, ACS (I.F.-5.3); ACS Energy Materials, ACS (I.F. – 6.024); ACS Omega, ACS (I.F. – 4.132); Energy & Fuels, ACS (I.F. – 5.3); ACS Sustainable Chemistry and Engineering, ACS (I.F. – 7.3) ; Chemosphere, Elsevier (I.F. – 8.943); Journal of Electroanalytical Chemistry, Elsevier (I.F. – 4.646); Separation and purification technology, Elsevier (I.F. – 5.774); Journal of Alloys and Compounds, Elsevier (I.F. – 4.650); Journal of Science: Advanced Materials and Devices, Elsevier (I.F. – 3.783); Materials today communications, Elsevier (I.F. – 2.678); Luminescence, Wiley (I.F. – 1.855); Chemistry Select, Wiley (I.F.- 1.9); Ceramic Internationals, Elsevier (I.F. – 5.1); Journal of the European Ceramic Society, Elsevier (I.F. – 5.8); Biomass Conversion and Biorefinery, Springer (I.F. – 3.5); Journal of Materials Science: Materials in Electronics, Springer (I.F. – 2.8). Biomass and Bioenergy, Elsevier (I.F. – 5.8) SCHOLARHIPS/HONORS/AWARDS ◎ World Scientist and University Rankings 2022 in Nanoscience and Nanotechnology- Top% 2 (2023, 2024, 2025) ◎ World Scientist ELSVIER and Stanford University Rankings 2023, 2024, 2025 (World Top 2% Scientist) ◎ Research Award 2020 (VIT Vellore) ◎ Research award 2019 (VIT Vellore) ◎ Best Researcher in Nanomaterials For Environment and Energy Applications (RULA-2019, Sponsred by International Research Councils) ◎ Best Oral Award at KIIT BBSR for ISCA BBSR chapter (9-11th Dec, 2015) ◎ National Merit Scholarship (2005)



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