

List of Publications

S.No.	Author(s)	Title	Name of Journal	Volume	Page	Year
1.	V.C. Suchitra, R. Athira, V. Anunanda, Sitthara, S.P. Vaiga Sagar, P.C. Rilu Fathima, K. Fathima Rameeza, T.A. Ramsreena, N.N. Binitha	Graphene electrodes decorated with starch-derived carbon dots for flexible supercapacitors	Current Applied Physics	81	57-65	2026
2.	Suvarna K. Subrahmanian, Zahira Yaakob, Biji Pullithadathil, and Binitha N. Narayanan	Tailoring Holey Graphene Architecture with Sulfur-Doped Oxygen-Deficient MoO ₃ for Synergistic Capacitance Enhancement	Small		e06976	2025
3.	Suvarna K. Subrahmanian, Binitha N. Narayanan	Interdigitated Microsupercapacitors and Flexible Conducting Wires Enabled by Less-Defective Graphene Prepared Via a Green Ball-Milling Approach	Chemnanomat		e2025003 47	2025
4.	Haritha Valiyaveettil Padi, Vijayasree Haridas, Binitha N. Narayanan	Simultaneous Top-Down and Bottom-Up Synthesis of Metal-Free g-C ₃ N ₄ /Graphene Hybrid via Mechanochemical Exfoliation and Thermal Treatment for High-Performance Supercapacitors	Batteries and supercaps		e2025004 99	2025
5.	Sumisha Surendran, Abhishek Shyam, Binitha N. Narayanan	Graphene-assisted nanopatterning of Fe ₃ O ₄ nanotubes decorated with Fe ₂ O ₃ for supercapacitor applications	Journal of Power Sources	657	238204	2025
6.	Shemeena Mullakkattuthodi,	Mesoporous magnetic Fe ₃ O ₄ /P-doped g-C ₃ N ₄ as a high	Journal of Materials Science		1-20	2025

	Thara Thozhuthuparambil & Binitha N. Narayanan	capacitance electrode for supercapacitor applications				
7.	Vijayasree Haridas, Haritha Valiyaveetil Padi, Ravi Kumar Trivedi, Saju Joseph, Binitha N Narayanan, Honey John	Fabric-supported all-solid-state asymmetric supercapacitor of NiO decorated holey graphene electrode derived from iron (III) oxide-based graphite intercalation compound	Journal of Energy Storage	129	117287	2025
8.	Nail Saleh Al-Sailah, Binitha N Narayanan	Ag-NiFe ₂ O ₄ over mesoporous silica for efficient 4-nitrophenol reduction: Nanocatalyst development, kinetics studies and reaction optimization	Materials Research Bulletin	189	113455	2025
9.	Suvarna K Subrahmanian, Binitha N Narayanan	Three-dimensional array of holey graphene as a high-performance anode material for supercapacitors	Journal of Power Sources	629	235952	2025
10.	Haritha Valiyaveetil Padi, Shebin Sulaiman, Navya Nanattil, Binitha N Narayanan	Facile Preparation of Amino Edge Functionalized N-doped Holey Graphene for Room Temperature Curable Ink Formulation Suitable for Flexible Electronics and Energy Storage Applications	ACS Applied Energy Materials	8	838–852	2025
11.	Sumisha Surendran, Binitha N Narayanan	One-pot strategy for porous carbon-graphene electrodes embedded with sodium oxides for supercapacitors with in-situ generated electrolyte ions	Journal of Alloys and Compounds	1010	177750	2025

12.	Chandni A P, Suchitra Vattapparambil Chandran, Binitha N. Narayanan	An environmentally sustainable ultrasonic-assisted exfoliation approach to graphene and its nanocompositing with polyaniline for supercapacitor applications	Ultrasonics	145	107482	2024
13.	Chandni A P, Suvarna K. Subrahmanian, Binitha N. Narayanan	High cycling stability polyaniline/carbon sphere/graphene ternary nanocomposite cathode material for asymmetric supercapacitors	Materials Today Communications	41	110416	2024
14.	Jasna T, Suvarna K Subrahmanian, Kavya V P, Haritha A P, Karthika T T, Shemeena M, Jabira P and Binitha N Narayanan	High-performance supercapacitor of ZnO-incorporated structurally modified g-C ₃ N ₄ with circular mesoporous channels attained via a template-free approach	Journal of Physics D: Applied Physics	58	035504	2024
15.	Shemeena Mullakkattuthodi & Binitha N. Narayanan	Mesoporous Cu ₂ O–CuO/O–g- C ₃ N ₄ nanocomposite with enhanced peroxidase-like activity for the colorimetric H ₂ O ₂ sensing	Research on Chemical Intermediates	50	4025– 4047	2024
16.	Haritha Valiyaveettil Padi, Navya Nanattil, Shebin Sulaiman, Resmi M Ramakrishnan, Binitha N Narayanan,	High-quality graphene devoid of oxygen functionalities as conductive ink for flexible electronics and bendable all- solid-state supercapacitors	Journal of Energy Storage	86	111297	2024
17.	Suvarna K Subrahmanian, Kavya V Palliyal, Sowmya Balasubramanyan, Rajesh Unnathpadi,	In-situ Green Gram Scale Synthesis of Carbon Sphere/Graphene for High- Performance Supercapacitors	Nano-Structures & Nano- Objects	37	101107	2024

	Biji Pullithadathil, Binitha N Narayanan,					
18.	Suchitra Vattapparambil Chandran, Binitha N Narayanan	Copper oxide incorporated ball-mill produced less-defective graphene for hybrid supercapacitors	Diamond and Related Materials	143	110842	2024
19.	V.P. Haritha, Vijayasree Haridas, K.V. Snisha, P.V. Suraja, N.K. Renuka, N.N. Binitha	β -Co(OH) ₂ -Co ₃ O ₄ /Graphene Oxide 3D-Nanoarchitecture modified electrode for electrochemical sensing and energy storage applications	Results in Engineering		101391	2023
20.	Shemeena Mullakkattuthodi, Vijayasree Haridas, Sankaran Sugunan, Binitha N Narayanan	Z-scheme mechanism for methylene blue degradation over Fe ₂ O ₃ /g-C ₃ N ₄ nanocomposite prepared via one-pot exfoliation and magnetization of g-C ₃ N ₄ .	Frontiers of Materials Science	16	220612	2022
21.	K.C. Remani, N.N. Binitha	Fluorescence sensing of picric acid by ceria nanostructures prepared using fenugreek extract	Journal of the Iranian Chemical Society	19	619–633	2022
22.	Vijayasree Haridas, Zahira Binti Yaakob, Sankaran Sugunan, Binitha N Narayanan	Novel Cost-effective Synthesis of Non-doped Turbostratic Graphene from Graphite Intercalation compound: Development of a Durable and Stable Electrocatalyst for Oxygen Reduction Reaction	New Journal of Chemistry	45	18669-18681	2021
23.	PK Sumayya, Suvarna K Subrahmanian, Shemeena Mullakkattuthodi, Sankaran Sugunan, Binitha N Narayanan	Green in situ preparation of novel graphene-wrapped ethyl cellulose submicrospherical capsules and its effective use in Cr (VI) removal	Journal of Nanoparticle Research	23	104	2021

24.	V Haridas, Z Yaakob, S Sugunan, BN Narayanan	Selective Electrochemical Determination of Paracetamol using Hematite/Graphene Nanocomposite Modified Electrode Prepared in a Green Chemical Route	Materials Chemistry and Physics	263	124379	2021
25.	K.C. Remani, N N Binitha	Cobalt doped ceria catalysts for the oxidative abatement of gaseous pollutants and colorimetric detection of H ₂ O ₂	Materials Research Bulletin	139	111253	2021
26.	V Haridas, A Sukhananazerin, B Pullithadathil, BN Narayanan	Ultrahigh specific capacitance of α -Fe ₂ O ₃ nanorods-incorporated defect-free graphene nanolayers	Energy	221	119743	2021
27.	Cheriyathvalappil Shaniba, Mohammed Akbar, Kuttikkattil Ramseena, Poovathinthodiyil Raveendran, Binitha N Narayanan, Resmi M Ramakrishnan	Sunlight-assisted oxidative degradation of cefixime antibiotic from aqueous medium using TiO ₂ /nitrogen doped holey graphene nanocomposite as a high performance photocatalyst	Journal of Environmental Chemical Engineering	8	102204	2020
28.	Vijayasree Haridas, A. Sukhananazerin, J. Mary Sneha, Biji Pullithadathil, Binitha Narayanan	α -Fe ₂ O ₃ loaded less-defective graphene sheets as chemiresistive gas sensor for selective sensing of NH ₃	Applied Surface Science	517	146-158	2020
29.	DP Narayanan, A Gopalakrishnan, Z Yaakob, S Sugunan, BN Narayanan	A facile synthesis of clay–graphene oxide nanocomposite catalysts for solvent free multicomponent Biginelli reaction	Arabian Journal of Chemistry	13	318-334	2020

30.	V Vadery, SK Cherikkallinmel, RM Ramakrishnan, S Sugunan, BN Narayanan	Green production of biodiesel using waste borosilicate glass derived catalyst and the process up-gradation in pilot scale	Renewable Energy	141	1042-1053	2019
31.	DP Narayanan, S Balasubrahmanyam, SK Cherikkallinmel, V Vadery, S Sankaran, BN Narayanan	A green approach for the synthesis of coconut husk ash-twisted graphene nanocomposites: Novel catalysts for solvent free Biginelli reaction	ChemistrySelect	4(16)	4785-4796	2019
32.	S Padikkaparambil, S Sugunan, BN Narayanan	Exploration of Mn incorporated CeO ₂ nanoflakes with meso- and macropores for the effective simultaneous catalytic oxidation of carbon monoxide and propane, Reaction Kinetics	Mechanisms and Catalysis		1-11	2019
33.	DP Narayanan, S Sankaran, BN Narayanan	Novel rice husk ash-reduced graphene oxide nanocomposite catalysts for solvent free Biginelli reaction with a statistical approach for the optimization of reaction parameters	Materials Chemistry and Physics	222	63-74	2019
34.	DP Narayanan, SK Cherikallinmel, S Sankaran, BN Narayanan	Functionalized carbon dot adorned coconut shell char derived green catalysts for the rapid synthesis of amidoalkyl naphthols	Journal of colloid and interface science	520	70-80	2019
35.	Silija Padikkaparambil, Jinoob Perumbilavil Padi, Vinu Vadery, Sankaran Sugunan,	Facile Preparation of Noble Metal-Free Cu-Doped CeO ₂ Oxidation Catalyst Suitable for Engine Exhaust Gas Treatment	Journal of Environmental Engineering	145(1)	04018131-9	2019

	Binitha Njarakkattuvalappil Narayanan					
36.	V Haridas, S Sugunan, BN Narayanan	One-pot low-temperature green synthesis of magnetic graphene nanocomposite for the selective reduction of nitrobenzene	Journal of Solid State Chemistry	262	287-293	2018
37.	S Balasubramanyan, S Arayathody, S Sugunan, BN Narayanan	Selective liquid phase oxidation of cyclohexene over magnetic Fe ₃ O ₄ /graphene oxide nanocomposite	Materials Chemistry and Physics	211	23-33	2018
38.	S Balasubramanyan, S Sugunan, BN Narayanan	Nitrogen-doped sulphonated 3-dimensional holey graphene nanoarchitecture for selective oxidation of ethylbenzene	Journal of materials science	53 (17)	12079-12090	2018
39.	S Balasubramanyan, S Sasidharan, R Poovathinthodiyil, Resmi M Ramakrishnan, Binitha N Narayanan	Sucrose-mediated mechanical exfoliation of graphite: a green method for the large-scale production of graphene and its application in catalytic reduction of 4-nitrophenol	New Journal of Chemistry	41 (20)	11969-11978	2017
40.	SK Cherikkallinmel, S Sugunan, BN Narayanan, PA Faisal, S Benjamin	Statistical optimization for lithium silicate catalyzed production of biodiesel from waste cooking oil	Korean Journal of Chemical Engineering	34 (11)	2840-2851	2017
41.	DP Narayanan, RM Ramakrishnan, S Sugunan, BN Narayanan	Solvent free one pot synthesis of amidoalkyl naphthols over phosphotungstic acid encapsulated montmorillonite clay catalysts	Journal of Saudi Chemical Society	21 (5)	538-544	2017
42.	A Gopalakrishnan, NN Binitha, Z	Excellent photocatalytic activity of titania-graphene	Journal of Sol-Gel Science and Technology	80 (1)	189-200	2016

	Yaakob, PM Akbar, S Padikkaparambil	nanocomposites prepared by a facile route				
43.	TK Hari, Z Yaakob, NN Binitha	Aviation biofuel from renewable resources: routes, opportunities and challenges	Renewable and Sustainable Energy Reviews	42	1234- 1244	2015
44.	SK Cherikkallinmel, A Gopalakrishnan, Z Yaakob, RM Ramakrishnan, Sankaran Sugunan, Binitha N Narayanan	Sodium aluminate from waste aluminium source as catalyst for the transesterification of Jatropha oil	RSC Advances	5 (57)	46290- 46294	2015
45.	V Vadery, BN Narayanan, RM Ramakrishnan, SK Cherikkallinmel, S. Nikesh, Divya P N	Room temperature production of jatropha biodiesel over coconut husk ash	Energy	70	588-594	2014
46.	M Pudukudy, Z Yaakob, M Mohammad, B Narayanan, K Sopian	Renewable hydrogen economy in Asia–Opportunities and challenges: An overview	Renewable and Sustainable Energy Reviews	30	743-757	2014
47.	S Viswanathan, B Narayanan, Z Yaakob, P Periyat, S Padikkaparambil	Selective formation of aniline over nanogold incorporated cobalt loaded SBA 15 catalysts	Journal of Porous Materials	21 (3)	251-262	2014
48.	SP Viswanathan, BN Narayanan, Z Yaakob, S Padikkaparambil, Masita Mohammed	Nanogold embedded Co ₃ O ₄ spinel supported over SBA 15 for the reduction of aquatic pollutant 4-nitrophenol, Reaction Kinetics	Mechanisms and Catalysis	111 (1)	335-345	2014
49.	M Pudukudy, Z Yaakob, B Narayanan	Selective Vapour Phase Oxidation of Benzyl Alcohol to Benzaldehyde over Mesoporous Ceria–Zirconia Solid Solution	Journal of Cluster Science	25 (6)	1599- 1614	2014

		Synthesized Via a Facile Citrate Route				
50.	Z Yaakob, BN Narayanan, S Padikkaparambil	A review on the oxidation stability of biodiesel	Renewable and Sustainable Energy Reviews	35	136-153	2014
51.	M Pudukudy, Z Yaakob, B Narayanan, A Gopalakrishnan, SM Tasirin	Facile synthesis of bimodal mesoporous spinel Co ₃ O ₄ nanomaterials and their structural properties	Superlattices and Microstructures	64	15-26	2013
52.	PV Suraja, Z Yaakob, NN Binitha, S Triwahyono, PP Silija	Co ₃ O ₄ doped over SBA 15: excellent adsorbent materials for the removal of methyleneblue dye Pollutant	Clean Technologies and Environmental Policy	15 (6)	967-975	2013
53.	S Padikkaparambil, B Narayanan, Z Yaakob, S Viswanathan, SM Tasirin	Au/TiO ₂ reusable photocatalysts for dye degradation	International Journal of Photoenergy			2013
54.	Z Yaakob, ISB Sukarman, B Narayanan, SRS Abdullah, M Ismail	Utilization of palm empty fruit bunch for the production of biodiesel from Jatropha curcas oil	Bioresource technology	104	695-700	2012
55.	P Silija, Z Yaakob, V Suraja, NN Binitha, ZS Akmal	An enthusiastic glance in to the visible responsive photocatalysts for energy production and pollutant removal, with special emphasis on titania	International Journal of Photoenergy			2012
56.	S Padikkaparambil, Z Yaakob, BN Narayanan, R	Novel preparation method of nanosilver doped sol gel TiO ₂ photocatalysts for dye pollutant degradation	Journal of sol-gel science and technology	63 (1)	108-115	2012

	Ramakrishnan, Zetty AA					
57.	V Suraja, Z Yaakob, N Binitha, A Ebshish, K Ranjana	Surface capped silver nanoparticles over anatase titania: an efficient catalyst for aromatic nitration reactions	Reaction Kinetics, Mechanisms and Catalysis	105 (2)	361-371	2012
58.	A Bshish, Z Yaakob, B Narayanan, R Ramakrishnan, A Ebshish	Steam-reforming of ethanol for hydrogen production	Chemical Papers	65 (3)	251-266	2011
59.	PV Suraja, Z Yaakob, NN Binitha, MR Resmi, PP Silija	Photocatalytic degradation of dye pollutant over Ti and Co doped SBA-15: comparison of activities under visible light	Chemical engineering journal	176	265-271	2011
60.	P Silija, Z Yaakob, MA Yarmo, S Sugunan, NN Binitha	Visible light active anion codoped sol gel titania photocatalyst for pollutant degradation	Journal of sol- gel science and technology	59 (2)	252-259	2011
61.	N Binitha, V Suraja, Z Yaakob, S Sugunan	Synthesis of polyaniline- montmorillonite nanocomposites using H ₂ O ₂ as the oxidant	Sains Malaysiana	40 (3)	215-219	2011
62.	NN Binitha, PV Suraja, Z Yaakob, MR Resmi, PP Silija	Simple synthesis of Co ₃ O ₄ nanoflakes using a low temperature sol-gel method suitable for photodegradation of dyes	Journal of sol-gel science and technology	53 (2)	466-469	2010
63.	BN Narayanan, R Koodathil, T Gangadharan, Z Yaakob, FK Saidu, Soumini C	Preparation and characterization of exfoliated polyaniline/montmorillonite nanocomposites	Materials Science and Engineering: B	168 (1- 3)	242-244	2010

64.	NN Binitha, Z Yaakob, R Resmi	Influence of synthesis methods on zirconium doped titania photocatalysts	Central European Journal of Chemistry	8 (1)	182-187	2010
65.	E Akbar, N Binitha, Z Yaakob, SK Kamarudin, J Salimon	Preparation of Na doped SiO ₂ solid catalysts by the sol-gel method for the production of biodiesel from jatropha oil	Green Chemistry	11 (11)	1862- 1866	2009
66.	NN Binitha, Z Yaakob, MR Reshmi, S Sugunan, VK Ambili, AA Zetty	Preparation and characterization of nano silver-doped mesoporous titania photocatalysts for dye degradation	Catalysis Today	147	S76-S80	2009
67.	NN Binitha, S Sugunan	Polyaniline/pillared montmorillonite clay composite nanofibers	Journal of applied polymer science	107 (5)	3367- 3372	2008
68.	BN Narayanan, S Sugunan	Alkylation of benzene with 1- octene over titania pillared montmorillonite	Reaction Kinetics and Catalysis Letters	94 (1)	77-83	2008
69.	NN Binitha, S Sugunan	Shape selective toluene methylation over chromia pillared montmorillonites	Catalysis Communications	9 (14)	2376- 2380	2008
70.	NN Binitha, S Sugunan	p-Cymene preparation over modified montmorillonite clays	Catalysis Communications	8 (11)	1793- 1797	2007
71.	NN Binitha, S Sugunan	Preparation, characterization and catalytic activity of titania pillared montmorillonite clays	Microporous and mesoporous materials	93 (1-3)	82-89	2006
72.	BN Narayanan, S Sugunan	Selective formation of cumene on pillared clays by isopropylation of benzene	Reaction Kinetics and Catalysis Letters	89 (1)	45-53	2006

Books/Reports/Chapters/General articles etc.

S.No	Title	Author's Name	Publisher	Year of Publication
1.	Stability and Durability of Graphene-based Materials for Supercapacitor Applications: Challenges and Solutions	Haritha valiyaveettil, Binitha n. Narayanan	Materials Research Forum LLC	2025
2.	Introduction to Green Supercapacitors: Current Research Trends, Prospects, and Challenges	Suvarna. K. Subrahmanian, and Binitha. N. Narayanan	Sustainable Materials in Supercapacitors (Elsevier)	2025 (In press)
3.	Carbon-Based Nanocomposites as Catalysts in Organic Reactions	Suchitra Vattapparambil Chandran, Sowmya Balasubramanyam, Honey M. Joseph, Amritha C Jayasankar, Binitha N. Narayanan	Nanocomposites as Catalyst for Organic Reactions (RSC)	2025
4.	Preparation methods, characteristics, and prospects of α -Fe ₂ O ₃ /graphene supercapacitor electrodes in a green chemistry perspective	Vijayasree Haridas, Sumisha Surendran, Honey John, Zahira Yaakob, Binitha N. Narayanan	Futuristic Trends in Renewable & Sustainable Energy	2023
5.	Green Preparation of Fe ₂ O ₃ Doped Gum Acacia Derived Porous Carbon/Graphene Ternary Nanocomposite as a Supercapacitor Electrode	Vijayasree Haridas, Zahira Yaakob, Binitha N. Narayanan,	Green Chemistry - New Perspectives (Intechopen limited)	2022
6.	Green Synthesis of Ceria Nanoparticles Using Allium sativum Extract:	K. C. Remani, Zahira Yaakob and N. N. Binitha	New Innovations in Chemistry and Biochemistry	2021

	Adsorption and Photo Fenton Degradation of Congo Red Dye		(Book Publisher International)	
7.	A Facile Sol Gel Method for the Preparation of N-Doped TiO ₂ Photocatalyst for Pollutant Degradation	P.P Silija, Z. Yaakob, N.N. Binitha, P.V. Suraja, S. Sugunan.	Recent Advances in Nanostructured Materials: Synthesis, Characterization and Applications (Apple Academic Press)	2013
8.	Nanogold Loaded Nitrogen Doped TiO ₂ Photocatalysts for the Degradation of Aquatic Pollutants under Sun Light	Zahira Yaakob, Anila Krishna, Silija Padikkaparambil, Binitha Narayanan, Resmi Ramakrishnan	Solar Power (Intech Open Access Publisher)	2011
9.	Sol Gel Titania: Leader Heterogeneous Photocatalyst for Waste Remediation	N.N. Binitha, Z. Yaakob, M.R. Resmi	The Sol-Gel Process: Uniformity, Polymers and Applications (NOVA publishers)	2010

