

Suman Dutta

Books	
3	Dutta, S. , Hussain CM. (2022): Membranes with Functionalized Nanomaterials: Current and Emerging Research Trends in Membrane Technology; Elsevier; ISBN: 9780323859462
2	Dutta, S. , Hussain CM. (2020): Sustainable Fuel Technologies Handbook; Academic Press (Elsevier); ISBN: 9780128229897
1	Dutta, S. (2015): Optimization in Chemical Engineering. Cambridge University Press; ISBN 978-1-107-09123-8
Book Chapters	
14	Rohini Singh, Suman Dutta (2024); Application of ground egg shell as an efficient photocatalyst for wastewater purification; Developments in Environmental Science (Vol-16, Chapter-14); https://doi.org/10.1016/B978-0-443-23665-5.00014-4
15	Ravi Kumar, Ganesh Swain, Suman Dutta (2024): Recent Advances in H ₂ Production by Photocatalytic Water Splitting; Towards Sustainable and Green Hydrogen Production by Photocatalysis: Scalability Opportunities and Challenges (Volume 1); DOI: 10.1021/bk-2024-1467.ch003; ACS
14	D.N.V.V. Konda Lutukurthi, Suman Dutta (2024); Recent advances on the technologies for the disinfection of drinking water; Advances in Drinking Water Purification: Small Systems and Emerging Issues (Chapter 12); Pages 271-293; Elsevier
13	Das, P., Dutta, S. (2021): Sustainable membranes with FNs: Current and emerging research trends; Membranes with Functionalized Nanomaterials: Current and Emerging Research Trends in Membrane Technology (Chapter 5); Pages 159-183; Elsevier
12	Rohini Singh, Suman Dutta (2021); Integrated photocatalytic hydrogen production and pollutants or wastes treatment: prospects and challenges; Membranes with Functionalized Nanomaterials: Current and Emerging Research Trends in Membrane Technology (Chapter 18); Pages 159-183; Elsevier
11	Rohini Singh, Suman Dutta (2021); Visible Light Active Nanocomposites for Photocatalytic Applications; Research Anthology on Synthesis, Characterization, and Applications of Nanomaterials; DOI: 10.4018/978-1-7998-8591-7.ch031
10	Singh, R., Dutta, S. (2020): Dual Applicability of Hexagonal Pyramid-Shaped Nitrogen-Doped ZnO Composites As an Efficient Photocatalyst; Functional and Smart Materials (Chapter 11), CRC Press
9	Singh, R., Dutta, S. (2020): Characterisation and Optimisation of TiO ₂ /CuO Nanocomposite for Effective Dye Degradation from Water under Simulated Solar Irradiation; Functional and Smart Materials (Chapter 10), CRC Press

8	Singh, R., Dutta, S. (2020): Current Approaches of Nanotechnology for Potential Drinking Water Purification; Handbook of Research on Emerging Developments and Environmental Impacts of Ecological Chemistry (Chapter 14); pp- 307-324; IGI Global. USA.
7	Das, P., Singh, K.K.K., Dutta, S. (2020): Forward osmosis membranes for water purification; Synthetic Polymeric Membranes for Advanced Water Treatment, Gas Separation, and Energy Sustainability (Chapter 8); pp- 159-169; Elsevier
6	Dutta, S. (2020): Wastewater treatment using TiO ₂ -based photocatalysts; Handbook of Smart Photocatalytic Materials: Fundamentals, Fabrications, and Water Resources Applications (Chapter 10). pp- 303-323; Elsevier
5	Quereshi, S., Dutta, S. , Naiya, T.K. (2019): Catalytic Conversion of Lignocellulosic Biomass into Fuels and Value-Added Chemicals; Fuel Processing and Energy Utilization (Chapter 3); Taylor & Francis Group
4	Dutta, S. (2018): Hydrogen as sustainable and green energy resource. Kirk-Othmer Encyclopedia. John Wiley & Sons. USA
3	Singh, R., Dutta, S. (2018): Visible Light Active Nanocomposites for Photocatalytic Applications. Composites and Advanced Materials for Industrial Applications. IGI Global. USA. 270 pp.
2	Quereshi, S., Ahmad, E., Pant, K. K., Dutta, S. (2017): Recent Advances in Production of Biofuel and Commodity Chemicals from Algal Biomass. Algal Biofuels. Springer. 393 pp.
1	Dutta, S. (2011): Water recycling in process industries. Recycling: Processes, Costs and Benefits. Nova Science Publishers, Inc. USA. Pp 223.
Review Articles	
12	Ravi Kumar, Rohini Singh, Suman Dutta (2024); Review and Outlook of Hydrogen Production through Catalytic Processes; Energy Fuels, 38, 2601 – 2629
11	Shivshankar Prasad, Al Jaradah Khalid, Vivek Narishetty, Vinod Kumar, Suman Dutta, Ejaz Ahmad (2023); Recent Advances in the Production of 2,5-Furandicarboxylic Acid from Biorenewable Resources; Materials Science for Energy Technologies, Volume 6, Pages 502-521
10	Quereshi, S., Naiya, T.K., Mandal, A., Dutta, S. , (2022): Residual sugarcane bagasse conversion in India: current status, technologies, and policies; Biomass Conversion and Biorefinery; Volume 12, pages 3687–3709
9	Dutta, Suman (2021): Review on Solar Hydrogen: Its Prospects and Limitations; Energy Fuels 2021, 35, 15, 11613–11639
8	Das, P., Dutta, S. , Singh, K.K.K., (2021): Insights into membrane crystallization: A sustainable tool for value added product recovery from effluent streams; Separation and Purification Technology; Volume 257, 15 February 2021, 117666
7	Bhattacharjee, C., Dutta, S. , Saxena, V.K. (2020): A review on biosorptive removal of dyes

	and heavy metals from wastewater using watermelon rind as biosorbent; Environmental Advances 2, 100007
6	Bhattacharjee, C., Saxena, V.K., Dutta, S. (2020): Static turbulence promoters in cross-flow membrane filtration: a review, Chemical Engineering Communications. 207(3), 413-433.
5	Das, P., Singh, K.K.K., Dutta, S. (2019): Insight into emerging applications of forward osmosis systems, Journal of Industrial and Engineering Chemistry. 72, 1-17.
4	Singh, R., Dutta, S. (2018): A review on H ₂ production through photocatalytic reactions using TiO ₂ / TiO ₂ -assisted catalysts. Fuel 220, 607-620.
3	Bhattacharjee, C., Saxena, V. K., Dutta, S. (2017): Fruit juice processing using membrane technology: A review. Innovative Food Science & Emerging Technologies. 43, 136-153.
2	Dutta, S. (2014): A review on production, storage of hydrogen and its utilization as an energy resource. Journal of Industrial and Engineering Chemistry. 20, 1148-1156.
1	Dutta, S. (2012): Applications and Development of Nanomaterials and Nanotechnology: Role of Chemical Engineers. Recent Patents on Chemical Engineering. 5, 197-205.
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41	Abdur Raheem, Ravi Kumar, Suman Dutta (2025): Designing of N-Doped Graphene Quantum Dot/NiAl Layered Double Hydroxide/TiO ₂ Heterostructure for Enhanced Photocatalytic Hydrogen Production; ACS Applied Energy Materials https://doi.org/10.1021/acsaem.5c01322
40	Ravi Kumar, Abdur Raheem, Suman Dutta (2025): Enhanced Photocatalytic Seawater Splitting Using Cu-Doped TiO ₂ Nanoparticles Anchored on Nb ₂ O ₅ ; Energy Fuels, 39(23), 11424 – 11436.
39	Ravi Kumar, Suman Dutta (2025): Synthesis of the Cu and P-Codoped TiO ₂ Photocatalyst for Hydrogen Production from Seawater; Energy Fuels, 39(3), 1778 – 1792.
38	Shivshankar Prasad, Ajay Kumar, Suman Dutta , Ejaz Ahmad (2025): Microwave-Assisted Conversion of 5-Hydroxymethylfurfural into 2,5-Furandicarboxylic Acid over CuCo Oxide; ChemPlusChem; 90(1), Article number e202400573
37	Ganesh Swain, Tapas Dash, Yash Srivastava, Ravi Kumar, Suman Dutta (2025): Development and application of modified biocarrier immobilized with Bacillus sp. for azo dye degradation: batch and continuous study; Bioremediation Journal; https://doi.org/10.1080/10889868.2024.2340605
36	Rohini Singh, Ravi Kumar, Suman Dutta , Himanshu P. Kohli, Ravi M. Sen (2024): Hybrid manufacturing process for the synthesis of doped TiO ₂ nanoparticles and optimization to determine an efficient photocatalyst; Journal of the Indian Chemical Society; https://doi.org/10.1016/j.jics.2024.101304

35	Shivshankar Prasad, Ajay Kumar, Suman Dutta , Ejaz Ahmad (2024): Chemocatalytic Oxidation of 5-hydroxymethylfurfural into 2,5-furandicarboxylic Acid Over Nickel Cobalt Oxide; ChemCatChem; https://doi.org/10.1002/cctc.202400973
34	Ravi Kumar, Ganesh Swain, Suman Dutta (2024); Synthesis of visible light-sensitive photocatalysts for hydrogen production; Fuel, Volume 360, 130555
33	Ajay Oraon, Anuj Kumar Prajapati, Mahendra Ram, Vinod Kumar Saxena, Suman Dutta , Amit Kumar Gupta (2024): Synthesis, characterization, and application of microporous biochar prepared from Pterospermum acerifolium plant fruit shell waste for methylene blue dye adsorption: the role of surface modification by SDS surfactant; Biomass Conversion and Biorefinery; Volume 14, pages 931–953
32	Ajay Oraon, Mahendra Ram, Amit Kumar Gupta, Suman Dutta , Vinod Kumar Saxena, Gajendra Kumar Gaurav (2022): An efficient waste garlic skins biochar nanocomposite: An advanced cleaner approach for secondary waste utilization; Journal of Molecular Liquids 364, 119997
31	Quereshi, S., Pant, K.K., Dutta, S. , Naiya, T.K. (2022): Unfolding the Role of Molybdenum Sulfide as a Catalyst to Produce Platform Chemicals from Biorenewable Resources; Biomass Conversion and Biorefinery; Volume 12, pages 3641–3654
30	Lutukurthi, DNVVK., Dutta, S. , Behara, DK. (2021): Dual role of activated carbon as fuel and template for solution combustion synthesis of porous zinc oxide powders; Journal of the American Ceramic Society 104(9), 4624-4636
29	Bhattacharjee, C., Saxena, V. K., Dutta, S. (2020): Insights into effectiveness of tight ultrafiltration and frozen storage in bioactive compound retention in watermelon juice concentrate; Journal of Food Process Engineering.
28	Lutukurthi, DNVVK., Dutta, S. , Behara, DK. (2020): Effect of ignition temperature and fuel amount on photocatalytic activity of solution combustion synthesized ZnO; Ceramics International. 46(14), 22419-22428 (https://doi.org/10.1016/j.ceramint.2020.05.324)
27	Kumari, B., Dutta, S. (2020): Integrating starch encapsulated nanoscale zero-valent iron for better chromium removal performance; Journal of Water Process Engineering. 37, 101370 (https://doi.org/10.1016/j.jwpe.2020.101370)
26	Quereshi, S., Ahmad, E., Pant, K.K., Dutta, S. (2020): Insights into Microwave-Assisted Synthesis of 5-Ethoxymethylfurfural and Ethyl Levulinate Using Tungsten Disulfide as Catalyst; ACS Sustainable Chem. Eng.; 8(4), (2020) 1721 – 1729
25	Bhattacharjee, C., Saxena, V. K., Dutta, S. (2019): Novel thermal and non-thermal processing of watermelon juice; Trends in Food Science & Technology. 93, 234–243
24	Das, P., Dutta, S. , Singh, K.K.K., Maity, S. (2019): Energy saving integrated membrane crystallization: A sustainable technology solution; Separation and Purification Technology. 228 (https://doi.org/10.1016/j.seppur.2019.115722)
23	Quereshi, S., Ahmad, E., Pant, K.K., Dutta, S. (2019): Synthesis and Characterization of

	Zirconia Supported Silicotungstic Acid for Ethyl Levulinate Production; Ind. Eng. Chem. Res. 58(35), 16045-16054
22	Roy Chowdhury, S., Chidambaram C.T., Podder, D., Sasmal, S., Debnath, M., Kumaraswamidhas, L.A., Dutta, S. , Haldar, D. (2019): A Supramolecular Gel to Reduce Tool Wear and Protect Surfaces during Metalworking; Chemistry Select. 4(10), 2949-2953.
21	Banik, A., Dutta, S., Bandyopadhyay, T.K., Biswal, S.K. (2019): Prediction of maximum permeate flux (%) of disc membrane using response surface methodology (rsm); Canadian Journal of Civil Engineering 46(6), 299-307.
20	Singh, R., Dutta, S. (2019): The role of pH and nitrate concentration in the wet chemical growth of ZnO nano-rods; Nano-Structures & Nano-Objects. 18, (https://doi.org/10.1016/j.nanoso.2019.01.009)
19	Singh, R., Dutta, S. (2018): Synthesis and characterization of solar photoactive TiO ₂ nanoparticles with enhanced structural and optical properties. Advanced Powder Technology. 29 (2), 211-219.
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12	Anupam, K., Dutta, S. , Bhattacharjee, C., Datta, S. (2016): Artificial neural network modelling for removal of chromium (VI) from wastewater using physisorption onto powdered activated carbon. Desalination and Water Treatment. 57(8), 3632-3641.
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Patents /Copyrights

2	Title: Process of preparation of fuel additives and commodity chemicals Inventors: Kamal K Pant, Shireen Quereshi, Ejaz Ahmad, Suman Dutta, Tarun Kumar Naiya India (Published; Application number: 201811017710; Date of Application: 10/05/2018; Publication date: 15/11/2019) Granted: Patent No: 413014
1	Title: Integrated Hollow fibre FO-UF with Tubular Assembly in a cross flow channel. Pallabi Das, Suman Dutta, K.K.K. Singh, Pradeep Kumar Singh

	Applicant: Council of Scientific and Industrial Research (CSIR) ROC No: L-88587/2020 ROC date: 07/01/2020 India
Other publications (selected)	
5	Dutta, S. (2018): Solar Photoactive Materials For Hydrogen Generation And Water Treatment, Science Trends, DOI: 10.31988/SciTrends.27605
4	Dutta, S. , Mboowa, D. (2017): Characterisation and assessment of Municipal Solid Waste (MSW) in Dhanbad City, India. Waste Management. A Glance at the World. 63:I-III.
3	Dutta, S. , Bhattacharjee, C., Saxena, V. K. (2016): Fouling Analysis in crossflow Ultrafiltration of Watermelon Juice. Proceedings of the 12th World Filtration Congress (WFC12), Taipei International Convention Center (TICC), Taipei, Taiwan.
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1	Nath, A., Dutta, S. , Bhattacharjee, C. (2007): Separation of Biomolecules from Casein Whey by ultrafiltration. Proceedings of the 8th International Conference on Catalysis in Membrane Reactor (ICCMR-8), Central Glass & Ceramic Research Institute (CGCRI), Kolkata, India.