Book/Book chapter Published

Department of Chemical Engineering

2026-27

1. Dr. Biju Sidharthan, Dr. Varun Kumar, Susheel Singh Bhandari, **Aditi Sinha**, "Sustainable Energy Management: A practical Approach", Department of Research and Publications A2Z Edulearning Hub, Sep,2026. ISBN: 978-81-180374-9-1
2. Uma Sankar Behera and **Sourav Poddar**, Introduction to Circular Economy in the Manufacturing Sector, Manufacturing and the Circular Economy, Wiley, September., 2026. ISBN:978-13-94403-40-0.
3. **Suman Saha**, Environmental and Food Safety Biosensors, Springer Nature, Singapore, July, 2026. **ISBN**: 978-981-95-9386-6. Doi: https://doi.org/10.1007/978-981-95-9386-6_11

2025-26

1. Dwaipayan Sen, **Ankita Mazumder, "**Membrane Separation in Wastewater Purification and Biotechnology Application", CRC Press, Taylor & Francis Group, Boca Raton, 2025. [ISBN No. 9781003541301]. DOI: https://doi.org/10.1201/9781003541301
2. Shubhrajit Sarkar, **Ankita Mazumder**, "Detection and Mitigation of Microbial Threats Using AI" The Handbook of AI for Clean Water, CRC Press, London, page 394, 2025 [ISBN No. 9781003600718]. DOI: https://doi.org/10.1201/9781003600718
3. **Aditi Sinha**, Avijit Ghosh, **Sunil Baran Kuila,** Lipika Das, and BiswajitMandal"Modified Metal Hydride and Organometallic Composites as a Hydrogen Storage Material for Portable Storage System: A Comprehensive Review" Conference paper, Recent Advances in Energy Transitions Towards Sustainable Development(CHEMCON 2023) in book series Springer, page 495–512, 8th July, 2025. [ISBN No. 978-981-96-3841-3]. https://link.springer.com/chapter/10.1007/978-981-96-3841-3_13 https://doi.org/10.1007/978-981-96-3841-3.
4. Ripa Sutar, Avirup Das, Debshilpi Patra, Mrunmayee Parua, **Biswajit Mandal**, Chandan Datta, Avijit Ghosh & **Sunil Baran Kuila** "Synthesis and Characterization of Noble Biopolymeric Conducting Hydrogels" Conference paper, Recent Advances in Energy Transitions Towards Sustainable Development (CHEMCON 2023) in book series Springer,221–234, 8th July, 2025. [ISBN No. 978-981-96-3841-3].

https://link.springer.com/chapter/10.1007/978-981-96-3841-3_13
https://doi.org/10.1007/978-981-96-3841-3

5. **Keka Rana**, Souvik Maity, and Debasish Sarkar, "Comparative Study on Hydrodynamic Simulation Through CFD Analysis Between Multiple Shaft Disk (MSD) and Intermeshed Spinning Basket Membrane (ISBM) Module", Recent Advances in Energy Transitions Towards Sustainable Development, Springer Proceedings in Materials 67, Singapore, Page 99 – 113, 2025. Print ISBN: 978-981-96-3840-6, Online ISBN978-981-96-3841-3. https://doi.org/10.1007/978-981-96-3841-3_6.
6. Uma Sankar Behera**, Sourav Poddar**, Redox-Responsive Drug Delivery for Small Interfering RNA (siRNA) Delivery, Taylor & Francis Group, March, 2026. **ISBN**: 978-10-03625-68-1.https://doi.org/10.1201/9781003625681
7. Monal Dutta, AI-Enabled Low-Carbon Strategies for Resilient and Sustainable Urban Ecosystems. Critical Perspectives on Sustainable Futures Society, Culture, And Governance. Samagra Educational Technology Pubication Kota, Raipur, C.G., 2026. 166-174. ISBN: 978-81-986847-8-3.
8. Monal Dutta, Prof. (Dr.) Sunil Baran Kuila, Integrating Safety, Health, and Environmental Management Practices for Chemical Sustainable Process Industry: A Comprehensive Review, Circular Economy in Chemical and Environmental Systems. Bharti Publications, New Delhi, 2026. 67. ISBN: 978-93-47303-34-0.
9. Bitan Pratihar, Monal Dutta, Plastic Waste-derived Membranes for Water Treatment: Current Status and Future Perspectives, Circular Economy in Chemical and Environmental Systems: Bharti Publications, New Delhi, 2026. 78. ISBN: 978-93-47303-34-0.

2024-25

1. Soumyadip Das, Ritu Thakur, SubrataDasgupta, Sankalan Das, **BiswajitMandal, Sunil BaranKuila**, A book chapter published on "Replacement of coal by RDF (Refused Derived Fuel)",Lecture Notes on Energy Transition: Challenges & Opportunities, IIChE – CHEMCON-2023, page 327-336, 2024. [ISBN No. 978-93-100-0071-9]. Doi:https://doi.org/10.36375/prepare_u.iiche.a418.

2. RipaSutar, Avirup Das, DebshilpiPatra, MrunmayeeParua, **BiswajitMandal**, ChandanDatta, avijitGhosh, **Sunil BaranKuila**, "Synthesis and Characterization of Noble Bio-Polymeric Conducting Hydrogels" publication as a chapter in "Recent advances in energy transitions towards sustainable development", "Springer Nature" on 8th July, 2025.[ISBN No. 978-981-96-3840-6].
3. **Rabindranath Jana**, published book "Fundamentals of Safety, Health & Environmental Management", White Falcon Publishing House, on 1st January 2025, ISBN: 978-93-481-9911-9 (https://www.amazon.in/dp/9348199110)
4. **Radharani Das**, Arghyadeep De, IshitaSinha, Binay. K. Duttapublished a book chapter on "Adsorptive Removal of Chromium(VI) from Water Solution Using Some Selective Low CostBio-Adsorbents for Sustainable Environment", in "Recent Trend in Water Resources and Pollution Control in BRICS Nations", 12 June 2025, pp 269–282.Springer Nature,Print ISBN-978-981-96-3188-9, https://link.springer.com/chapter/10.1007/978-981-96-3189-6_18.
5. Purna Chandra Pradhan, Biswabanditakar, PravatRanjan Dixit,**AditiSinha**, "Research Methodology and Statistical Foundation "book published. Publisher Department of Research and Publication A2Z Edulearning Hub, 24th Feb, 2025. [ISBN No: 978-81-984646-8-2].

2023-24

1. **SouravPoddar**, KedarSahoo, Uma SankarBehera, KoushikGuhaBiswas, and Krishna Deo Prasad Nigam, Chapter -25: "Conversion of waste materials and CO_2 into useful products", From Waste to Wealth, Springer Nature Singapore Pte Ltd, 2023. [https://doi.org/10.1007/978-981-99-7552-5_25][ISBN: 978-981-99-7551-8].
2. **SouravPoddar,** Uma SankarBehera, "Chapter 2: Hybrid inorganic aerogels for CO_2 adsorption" Hybrid Aerogels, De Gruyter,Berlin, page 33 - 66, 2024. [ISBN No. 978-311-12-5135-6].
3. Khadanga, S.P., Samal, D.K., Patnaik, P.K., Roy, G.K. (2024). Study of Gas Holdup, RPM and Heat Transfer Coefficient in Air and Water Pressure Swing Rotating Bubble Cap Sparger Column. In: Raghavendra, G., Deepak, B.B.V.L., Gupta, M. (eds) Recent Advances in Mechanical Engineering, Volume 1. ICMech-REC 2023. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-97-0918-2_39
Print ISBN978-981-97-0917-5

4. **Lipika Das,** AnikeshTripathi, KoushikGuhaBiswas and Krishna Deo Prasad Nigam, "Plastic waste and wheat straw into biofuels and conversion of wastewater into agricultural water use" From Waste to Wealth, Springer, Singapore, page 929-949, 2024. [ISBN No. 978-981-99-7551-8].

2022-23

1. **Siddhartha SankarBoxi**, SmritiMandal, SmritikanaPhadikar, Soumen Pal and SurajRana, Precious Metal Recovery from Electronic Waste (E-waste) - A Review. Latest Aspects of Applied Sciences & Informatics: The Paradigm Shifting, New Delhi Publishers, New Delhi, India, Dec., 2022. **ISBN**: 978-93-93878-60-1.
2. RipaSutar**, Dr. SomakJyotiSahu, Dr. Lipika Das Samanta**, "Degradation of methylene blue through photocatalysis using synthesized ZnO/CeO_2nanocomposite catalyst" Lecture Notes in Chemical Engineering and Material Sciences, IIChE, Kolkata. [ISBN No: 978-93-5620-063-0]

2021-22

1. Y. Kumar, **L. Das**, and K. GuhaBiswas, Chapter Name:"Biodiesel: Features, Potential Hurdles and Future Direction" Book Name: "Status and Future Challenges for Nonconventional Energy Sources" Volume 2, Chapter-5, Springer, Singapore, page 99-122 , March, 2022. [ISBN 978-981-16-4508-2].

2020-21

1. **B. Bej**, N. C. Pradhan, S. Neogi, "Production of Hydrogen by Steam Reforming of Methanol over Novel Nano-Nickel Oxide based Catalyst" Lecture Notes in Bioengineering book series Springer, Singapore, page 405-414 , 2020. [ISBN No. 978-981-15-7409-2]

2017-18

2. Biswas, K.G.;**Das, L**. "Role of Biofuels/Biomass in Current Energy Scenario of India", Low Carbon Energy Supply, Green Energy and Technology. Springer Nature Singapore Pte Ltd., 2018, Page: 203-209. [ISBN No. 978-981-10-7325-0]

Patent

Department of Chemical Engineering

2025-26

1. Wendrila Biswas, Arunangshu Giri, Shamba Chatterjee, Samual Biswas, **Tanushree Ghosh**, **Patent granted** on "Employee Wellbeing Monitoring Hr Device", Patent No. 461545-001, 24.09.2025, (Ref : 209634), from Intellectual Property India (GOV. of India).
2. Wendrila Biswas, Arunangshu Giri, Satakshi Chatterjee, Shamba Chatterjee, Samual Biswas, **Tanushree Ghosh**, **Patent granted** on "Recruitment Screening Device", Patent No. 465529-001, 11.11.2025, (Ref : 213214), from Intellectual Property India (GOV. of India).
3. **BiswajitMandal**, Swarnajit Bhattacharya, MrinmoySen, AsimHalder, Asit Kumar Nayak, AmitBiswas, SubrataMondal, Sunil BaranKuila, Sutapa Roy, Lipika Das Samanta a **patent published** on "IOT-Enable Smart Water Health Monitoring and Control System using Lorawan Communicator Pisciculture", Application No. 202431000061 A, Publication Date: 04/07/2025 (The Patent Office Journal No. 27/2025)
4. **Biswajit Mandal,** Saptarshi Mitra, Avijit Ghosh, Aniruddha Hore, Tapas Kumar Manna, A **Patent published** on "A portable hydrogen gas generator using spent aluminium to produce hydrogen gas on demand" Application No. 202431050150 A, Publication Date: 02/01/2026 (The Patent Office Journal No. 01/2026 Dated 02/01/2026).
5. Gourab Chatterjee, Shamama Khurshid, Anjan Mishra, **Asit Kumar Saha**, AchintyaSaha, **Patent published** on "Development of Thymoquinone-Rich Microencapsulated Powder from Nigella Sativa Seed Oil", Patent Application No.202531050808, Application date: 27/05/2025, Publication Date: 11.07.2025.
6. Monojit Manna, Somrita Jana, **Aditi Sinha,** Dr. AshokeMondal, DrArpitaGhosh, Dr. TaniyaDeyMalakar, IshiraGanguly, KaustavNandy, **Patent Applied** on **"**Solar Powered Smart Cap with Sos Features", Application no: 493681-001, From Intellectual Property India (GOV. of India).
7. Sajal Sarkar, Dr. Vikash Kumar, Palaniandavar Venkateswaran, Debraj Roy, Sourish Dutta, Mehbub Rahaman Mondal, Piyali Maur, Rajib Kumar Dolai, Ishira Ganguly,**Aditi Sinha,** Amit Khan, Monojit Manna**,Patent Applied** on **"**IOT adaptive bottle for differently abled infant", Application no: 496149-001, From Intellectual Property India (GOV. of India).

8. Gourab Chatterjee, Priyanka Saha, Achintya Saha, **Asit Kumar SAHA,** Anjan Mishra, **International Patent Published**, on " Barnyard millet based ready –to-eat (RTE) Fiber enriched lkichdi premix enriched with black cumin seed oil "under the patent cooperation treaty (PCT) (19) World Intellectual Property Organization International Bureau (10) International Publication Number WO 2026/078621 A1 (43) International Publication Date 16 April 2026 (16.04.2026) WIPOIPCT (51) International Patent Classification: A23L 7/10 (2016.01) (21) International Application Number: A23L 27/10 (2016.01) PCT/IB2025/060235.

2024-25

1. **Biswajit Mandal**, SaptarshiMitra, AvijitGhosh, AniruddhaHore, **Tapas Kumar Manna, A patent applied** on "A Portable Hydrogen Gas Generator Using Spent Aluminium to Produce Hydrogen Gas on Demand" Patent Application No. 202431050150 dated 01.07.2024, (Ref no.: 5289/ASA/PP-4072/HIT-(AS-SM), in India.
2. ArunangshuGiri, WendrilaBiswas, DipanwitaChakrabarty, ShambaChatterjee, **Tanushree Ghosh**, **Patent granted** on"Customer Experience Monitoring Wireless Device", Patent No. 434951-001, 09.12.2024, (Ref.: 186780), From Intellectual Property India (GOV. of India).
3. GourabChatterjee, PriyankaSaha, AchintyaSaha, **Asit Kumar Saha**, Anjan Mishra, **Patent published** on"Barnyard millet based ready-to-eat (rte) fiber enriched khichdi premix enriched with black cumin seed oil". Application No.202431076490A, Publication Date : 29/11/2024.
4. **Deepak Kumar Samal**, Shakti Prasanna Khadanga, **Ankita Mazumder**, **Patent published** on "Self-Rotating Liquid Distributing Stirrer (SRLDS), Application No.:202531049092, Date of Publication: 30/05/2025,(The Patent Office Journal No. 22/2025), published an ordinary patent.
5. **Sunil Baran Kuila &Biswajit Mandal**, **Patent granted on** "A new Polymeric IPN Membrane for Regenerative Fuel Cell, Fuel Cell and Pervaporative Separation", Patent No. 561021, Date of Grant: 24.02.2025, From Intellectual Property India (GOV. of India).
6. **Somak Jyoti Sahu, Amalesh Sirkar, Sebak Ranjan Roy, Patent published** on "A Novel Fermentor System for Manufacture of Ethanol from Glucose", Application

No.202531007426, date 29.01.2025, Publication Date: 07.03.2025, From Intellectual Property India (GOV. of India).

7. ArunangshuGiri, WendrilaBiswas, Anjan Mishra, ShambaChatterjee, **Tanushree Ghosh**, **Patent granted on** "Emotion Recognition Interactive Billboard", Patent No. 450618-001, 12.06.2025, (Ref : 201999), from Intellectual Property India (GOV. of India).
8. Gourab Chatterjee, Shamama Khurshid, Anjan Mishra, **Asit Kumar Saha**, AchintyaSaha, **patent published** "Novel Method for Extraction of Thymoquinone-Rich Black Cumin Seed Oil Using Supercritical CO_2 Technology", Patent Application No.202531048100 A 20/06/2025, The Patent Office Journal No. 25/2025 published Date: 20/06/2025.
9. **Aditi Sinha,** Parameshwari, Namala Vijaylaxmi, Pooja Verma, Deependra Pandey, Dr. Payel Patial, Patent granted on "Aesthetic interactive switch panel design for smart homes" Design No. 448115-001,(Patent office journal no. 24/2025 Dated 13/06/2025), Patent office, Government of India.

Copyright

1. **Biswajit Mandal**, Copyright granted on "Smart portable indoor plant growth chamber for healthy air and cooling effect" on dated 21/11/2024.
2. Swarnajit Bhattacharya, **Biswajit Mandal**, AshimHalder Copyright granted on "Computer software work, a python code for DSO", registration number SW-20167/2025.

2023-24

1. Deepak Kumar Samal, Shakti Prasanna Khadanga, Gopendra Kishore Roy, Yashobanta Kumar Mohanty, **Patent granted** on "Laminar Pipe Flow Observation Apparatus (LPFOA)", Patent No. 494508 (application no. 201931049723), Grant date- 04.01.2024, (SL No :033131489:), From Intellectual Property India (GOV. of India).
3. **Biswajit Mandal**, Swarnajit Bhattacharya, MrinmoySen, AsimHalder, Asit Kumar Nayek, AmitBiswas, SubrataMondal, Sunil BaranKuila, Sutapa Roy, Lipika Das Samanta. **Patent Filed**: Patent Application No. **202431000061**dated 01.01.2024 entitled "IOT-Enable smart water health monitoring and control system using lorawan communication for pisciculture" From Intellectual Property India (GOV. of India).

4. **Deepak Kumar Samal,** Dr. Gopendra Kishore Roy. Mr. Shakti Prasanna Khadanga, **Patent granted** "Pressure Swing Rotating Bubble Cap (PSRBC)", Patent No. 511825 (application no.201931023024), Grant date-16.02.2024, (SL No: 033133228), From IntellectualProperty India (GOV. of India).
5. **Biswajit Mandal, Sunil Baran Kuila,** A **patent published** on "A new polymeric ipn membrane for regenerative fuel cell, fuel cell and pervaporative separation" on dated 01/03/2024. Application No.202231025760 A, Date of filing of Application: 03/05/2022. Name of Applicant: HaldiaInstituteofTechnology, ICARE Complex, HIT Campus Hatiberia, Haldia, Dist.-PurbaMedinipur West Bengal India West Bengal India.

Copyright Applied

1. Swarnajit Bhattacharya, **Biswajit Mandal**, Asim Halder, A copyright was applied on "Android synchronized portable digital storage oscilloscope" dated 26/04/2024
2. Aveel Samanta, Swarnajit Bhattacharya, **Biswajit Mandal**, Avijit Ghosh, A copyright was applied on "Smart portable indoor plant growth chamber for healthyindoor air quality and cooling effect" dated 17/05/2024.

2022-23

1. BiswajitMandal, "Air Analyzing Cum Air Health Monitoring System" dated 03/03/2023 was also filed with application number 202331014510.

2021-22

1. Kuila, S. B.; Mandal, B. Patent application No. 202231025760 dated 03-05- 2022 entitled "A new polymeric ipn membrane for regenerative fuel cell, fuel cell and pervaporative separation" in the name of HaldiaInstituteof Technology Our Ref: 4692/ASA/PP-3520/HIT.

2017-18

1. Sirkar, A.; Mitra, D.; Das, R. Sahu, S. J.; Mandal, B. "A process for removal of color from crude fatty acids", Patent No. 292435, 31.01.2018, (Ref : 6/OL/2011), From Intellectual Property India (GOV. of India).

2016-17

1. Mandal, B.; Kuila, S. B. "A Brown (HHO) Gas Generator Adapted for use in Automobile Engines", Date of grant: 03/05/2017, Patent No. 283077, Application No. 603/KOL/2009, Date of filling 08/04/2009.