



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

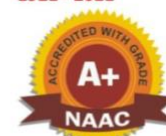
HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

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School of Chemical Technology
Department of Biochemical Engineering
List of Book Chapter Published (2025-26)

1. Mishra, P., Sompura, S., Villafuerte, M. E. M., Valdivia, J. L. S., & **Singh, L. K.** (2025). Application of Biochar in Biohydrogen Production. *Biochar and the Circular Economy*, 189-200. <https://doi.org/10.1201/9781003659761-15>
2. Gupta, H., Mishra, P., **Singh, L. K.**, Chaurasia, S. P., & Vivekanand, V. (2025). Application of Biochar in Anaerobic Digestion. *Biochar and the Circular Economy*, 168-188. <https://doi.org/10.1201/9781003659761-14>
3. Chandra, P., Varshney, P., Sachan, N., & **Singh, L. K.** (2026). Federated learning and privacy-preserving AI for cardiac signal analysis in robotic surgery. In *Deep Learning for Cardiac Signal Analysis in Robotic Applications*, 317-330. <https://doi.org/10.1016/B978-0-443-45242-0.00012-8>
4. Bajpai, M., Nigam, M., **Singh, L. K.**, & Awasthi, G. (2025). Electronic Waste: An Emerging Pollutant of Human Health Concern and Biological Techniques for Their Treatment. *Environmental Toxicants and Lifestyle Diseases*, 141-156. Springer Nature Singapore. https://doi.org/10.1007/978-981-95-0575-3_8
5. Yadav, A. A., Jha, M. K., **Kumar, S.**, & Hans, M. (2026). Biofuel Significance in a Today's Transforming World. In *Biofuels* (pp. 1-18). CRC Press. <https://doi.org/10.1201/9781003485636>
6. Sharma, A., & **Kumar, S.** (2026). Lignocellulosic Ethanol Production: Bioreactor Designing and Analytical Approach. In *Biofuels* (pp. 70-98). CRC Press. <https://doi.org/10.1201/9781003485636>
7. Daniel, R., Vaid, D., **Kumar, S.**, & Jagadevan, S. (2026). Breakthrough in the co-production of biohydrogen and biomethane using fermentative technologies. In *Next-Generation Biofuels* (pp. 87-115). Elsevier. <https://doi.org/10.1016/B978-0-443-27564-7.00015-6>
8. Sharma, R., **Kumar, S.**, & Lal, A. K. (2026). Conversion of biomass waste to leather. In *Sustainable Technologies for Value Addition to Biomass Waste* (pp. 371-390). Elsevier. <https://doi.org/10.1016/B978-0-443-36318-4.00009-1>



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1. Mishra, P., Sompura, S., Sharma, S., Jung, J. H., Punetha, S., Vuppu, S., & **Singh, L. K.** (2025). Food waste: an emerging trend to convert waste into energy. *Waste-to-Energy*, 219-247. <https://doi.org/10.1016/B978-0-443-22356-3.00010-5>
2. Karmakar, S., **Singh, L. K.**, & Rani, R. (2025). Bioelectrochemical Systems for Sustainable Treatment of Industrial Wastewater: Current Status and Future Prospects. *Biotechnological Applications in Industrial Waste Valorization*, 23-42. https://doi.org/10.1007/978-981-96-2302-0_2
3. Kapoor, A., **Kumar, S.**, Arya, A. K., Nishad, V., Fatma, H., Gupta, A., & Singh, S. (2024). Microfluidic biosensors for the detection of foodborne pathogens. *Biosensors for foodborne pathogens detection*, 223-246. <https://doi.org/10.1016/B978-0-323-95586-7.00010-1>
4. Bhowmik, S., **Kumar, S.**, Raj, A., Adom, D., & Saxena, R. (2025). Metabolomics in Understanding and Mitigating Metal Toxicity. In *Microbial Metabolomics: Recent Developments, Challenges and Future Opportunities* (pp. 347-375). Singapore: Springer Nature Singapore. [10.1007/978-981-96-4824-5_15](https://doi.org/10.1007/978-981-96-4824-5_15)
5. Mishra, P., **Kumar, S.**, Maurya, A. K., Tiwari, P., Tirkey, S., & Sharma, S. (2024). Bio-based materials in drug delivery. *Sustainable Bio-Based Composites: Biomedical and Engineering Applications*, 20, 79. [10.1515/9783111321530-005](https://doi.org/10.1515/9783111321530-005)
6. Arya, A. K., Kapoor, A., Pal, D. B., Awasthi, A., Sastry, S. V. A. R., & **Kumar, S.** (2024). Molten Salt Thermal Storage Systems for Solar Energy Concentrators. *Solar Energy Concentrators: Essentials and Applications*, 219-234. <https://doi.org/10.1002/9781394204533.ch10>
7. Verma, S., & **Singh, L. K.**, (2025). Introduction to Modelling and Optimizing an Airlift Bioreactor for Selenite Removal using ANN and Particle Swarm Optimization. *Emerging Trends in Green Chemical Technologies: Navigating Challenges and Exploring Opportunities*, 38. ISBN: 978-1-0364-4554-3
8. Niranjana, V., Srivastava, J., Verma, S., Pal, M., & **Singh, L. K.**, (2025). Advancements and Future Trajectories in Tissue Engineering and Regenerative Medicine: A review *Emerging Trends in Green Chemical Technologies: Navigating Challenges and Exploring Opportunities*, 38. ISBN: 978-1-0364-4554-3



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9. Jha, A. A., **Kushwaha, R.**, Trivedi, M., & Singh, V. (2025). Fungal Waste Biomass as a Feedstock for Polylactic Acid (PLA) Production. *Fungal Waste Biomass Management for Energy, Environment and Value-Added Products*, 27-58. Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-82599-6_2
10. Trivedi, M., **Kushwaha, R.**, Mordina, B., Jha, A. A., & Singh, V. (2025). Utilizing Fungal Mycelium in Bio-nanocomposites as a Replacement for Chemically Synthesized Lightweight Polymers. *Fungal Waste Biomass Management for Energy, Environment and Value-Added Products*, 59-87. Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-82599-6_3
11. **Kumar, S.**, Mishra, P., Awasthi, A., and. Sastry, S. V. A. R., (2024). CO₂ Sequestering and Its Utilization for the Production of Bioenergy Using Microalgae Potential. *Sustainability in Chemical Processes through Digitalization and Green Chemistry Approaches*, Nova Science Publisher. <https://doi.org/10.52305/HUMP1467>
12. Sachan, H., Mishra, P., Nishad, V., **Kumar S.**, and Sastry, S. V. A. R. (2024). The Effect of Clay Idols and Plaster of Paris (Pop) Immersion on Water Quality. *Sustainability in Chemical Processes through Digitalization and Green Chemistry Approaches*, Nova Science Publisher. <https://doi.org/10.52305/HUMP1467>



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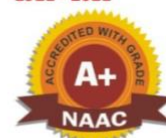
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1. Mahmood, Z., Nigam, M., **Singh, L.K.** (2024). Metabolic Engineering of Lipid Biosynthesis Pathway to Enhance the Oil Content in Microalgae. Recent Advances in Bioprocess Engineering and Bioreactor Design. Springer, Singapore. https://doi.org/10.1007/978-981-97-1451-3_3
2. Mahapatra, S., & **Singh, L. K.** (2024). Crude Microbial Enzymes (Fungal Enzymes) From Agro-Wastes as a Potent Agent for Biological Pretreatment of Algal Biomass Processing to Biofuel Production. *Biofuels*, 335-349. [10.1201/9781003350606-21](https://doi.org/10.1201/9781003350606-21)
3. Nigam, M., & **Singh, L. K.** (2024) Synergistic Multi-Microbial Approaches for Efficient Degradation of Industrial Dyes: Mechanisms and Optimization. *Sustainable Green Chemical Technologies: Challenges & Opportunities*, 128. Bharti Publications
4. **Agrahari, R., Kushwaha, R.,** Verma, A., & Banerjee, S. (2024). Reinforced multiscale polymer composites, properties and applications. *Polymer Composites: Fundamentals and Applications*, 153-179. Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-97-2075-0_5
5. Rahul, Saxena, R., **Kumar, S.,** & Pal, D. B. (2023). Volatile organic compounds impact on environment: biofiltration as an effective control method. *Sustainable Valorization of Agriculture & Food Waste Biomass: Application in Bioenergy & Useful Chemicals*, 51-69. Springer Nature Singapore. https://doi.org/10.1007/978-981-99-0526-3_3



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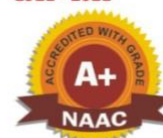
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1. Agarwal, B., & Singh, L. K. (2023). Strengthening Bioenergy-Based Economy Through Conversion of Wastewater Resources. *Extremophiles: Wastewater and Algal Biorefinery*, 1.
2. Pathak, A., & Singh, L. K. (2023). Impact of microplastics and nanoplastics interactions with other contaminants in environment. In *Current Developments in Biotechnology and Bioengineering* (pp. 333-359). Elsevier. <https://doi.org/10.1016/B978-0-323-99908-3.00015-4>
3. Agrahari, R., Agarwal, P., & Rani, R. (2023). Microbial fuel cell for simultaneous wastewater treatment and bioelectricity generation. In *Bio-based materials and waste for energy generation and resource management* (pp. 77-102). Elsevier. <https://doi.org/10.1016/B978-0-323-91149-8.00012-0>
4. Pathak, A. N., & Singh, L. K. (2022). Perfluoroalkyl and poly-fluoroalkyl substances (PFASs) accumulation in plants. In *Current Developments in Biotechnology and Bioengineering* (pp. 57-69). Elsevier. <https://doi.org/10.1016/B978-0-323-99906-9.00010-3>
5. Kumar, S., Mishra, P., Sachan, H., Saxena, R., Rahul, & Lal, A. K. (2024). Biodiesel production from agricultural waste biomass. *From Waste to Wealth*, 205-224. Springer Nature Singapore. [10.1007/978-981-99-7552-5_10](https://doi.org/10.1007/978-981-99-7552-5_10)