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| **<https://www.researchgate.net/profile/Dr_Shashi_Bhatia>****<http://scholar.google.co.kr/citations?user=xKOzI-wAAAAJ&hl=en>****https://orcid.org/0000-0002-7688-6069** |

### Thrust area

Biocatalysis and enzyme engineering, biofuel, biomaterial, biochemical engineering, antibiotics, metabolic engineering, glycosylation, bioencapsulation, mutagenesis, protein purification, molecular biology

### Education

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| **Degrees/ Experience** | **University/Department** | **Year** | **Subjects/Topic** |
| **Associate Professor** | Konkuk University, South korea | 2020-Current | Biological Engineering |
| **Assistant Professor** | Konkuk University, South korea | 2014-2019 | Biological Engineering |
| **Post Doc position** | Konkuk University, South Korea | 2013-2014 | Biological Engineering |
| **Assistant Professor** | IIE, Shimla | 2012-2013 | Biotechnology |
| **Ph. D.** **in Biotechnology** **2013** | Department of Biotechnology, Himachal Pradesh University, Shimla, India | 2007-2013 | Characterization of hydroxynitrile degrading activity of *Alcaligenes* spp. and its application for the production of aliphatic and aromatic hydroxy acids.<http://hdl.handle.net/10603/128106> |
| **M. Sc. Biotechnology****(First division)** | Department of Biotechnology, Himachal Pradesh University, Shimla, India | 2005-2007 | Biotechnology |
| **B. Sc.** **(First division)** | Swami Vivekanand College,Ghumarwin, Distt. Bilaspur,Himachal Pradesh | 2002-2005 | Botany, Zoology, Chemistry |

###### Major achievements in research

* Bioplastic production using microbial system
* Biofuel production using microbial system

###### Development of bioprocess for the production of industrially important chemicals: mandelic acid α-hydroxyisobutyric, cadaverine using green chemistry approach

* *Streptomyces* sp. antibiotic production

###### Academic achievements

* Qualified All India Combined Biotechnology Entrance Examination –2005 conducted by J.N.U. New Delhi.
* Qualified GATE-2006, conducted by IIT- Kharagpur
* Qualified DBT-JRF 2007
* Qualified UGC-Net 2008 (20-6/2008(ii)EU-IV) Roll No-335300
* KU-Brain Pool-2014 Post Doc (South Korea)

**Publications**

Research Papers

**2021**

1. Ahuja, V., Bhatt, A.K., Sharma, V., Rathour, R.K., Rana, N., Bhatia, R.K., Varjani, S., Kumar, M., Magdouli, S., Yung, H., Bhatia, S.K. 2021. Advances in glucosamine production from waste biomass and microbial fermentation technology and its applications. *Biomass Conversion and Biorefinery*.
2. Patel, A.K., Singhania, R.R., Awasthi, M.K., Varjani, S., Bhatia, S.K., Tsai, M.-L., Hsieh, S.-L., Chen, C.-W., Dong, C.-D. 2021. Emerging prospects of macro- and microalgae as prebiotic. *Microbial Cell Factories*, **20**(1), 112.
3. Ham, S., Han, Y.-H., Kim, S.H., Suh, M.J., Cho, J.Y., Lee, H.-J., Park, S.-H., Park, K., Ahn, J.-O., Joo, J.C., Bhatia, S.K., Yang, Y.-H. 2021. Application of l-glutamate oxidase from Streptomyces sp. X119-6 with catalase (KatE) to whole-cell systems for glutaric acid production in Escherichia coli. *Korean Journal of Chemical Engineering*, **38**(10), 2106-2112.
4. Khan, M.J., Rai, A., Ahirwar, A., Sirotiya, V., Mourya, M., Mishra, S., Schoefs, B., Marchand, J., Bhatia, S.K., Varjani, S., Vinayak, V. 2021. Diatom microalgae as smart nanocontainers for biosensing wastewater pollutants: Recent trends and innovations. *Bioengineered*, null-null.
5. Kumar, A., Singh, S.K., Kant, C., Verma, H., Kumar, D., Singh, P.P., Modi, A., Droby, S., Kesawat, M.S., Alavilli, H., Bhatia, S.K., Saratale, G.D., Saratale, R.G., Chung, S.-M., Kumar, M. 2021. Microbial Biosurfactant: A New Frontier for Sustainable Agriculture and Pharmaceutical Industries. *Antioxidants*, **10**(9), 1472.
6. Lee, H.S., Lee, H.-J., Kim, S.H., Cho, J.Y., Suh, M.J., Ham, S., Bhatia, S.K., Gurav, R., Kim, Y.-G., Lee, E.Y., Yang, Y.-H. 2021. Novel phasins from the Arctic Pseudomonas sp. B14-6 enhance the production of polyhydroxybutyrate and increase inhibitor tolerance. *International Journal of Biological Macromolecules*.
7. Bhatia, S.K. 2021. Wastewater Based Microbial Biorefinery for Bioenergy Production. *Sustainability*, **13**(16), 9214.
8. Dange, P., Pandit, S., Jadhav, D., Shanmugam, P., Gupta, P.K., Kumar, S., Kumar, M., Yang, Y.-H., Bhatia, S.K. 2021. Recent Developments in Microbial Electrolysis Cell-Based Biohydrogen Production Utilizing Wastewater as a Feedstock. *Sustainability*, **13**(16), 8796.
9. Gurav, R., Bhatia, S.K., Choi, T.-R., Kim, H.-J., Lee, H.-J., Cho, J.-Y., Ham, S., Suh, M.-J., Kim, S.-H., Kim, S.-K., Yoo, D.-W., Yang, Y.-H. 2021. Seafood Processing Chitin Waste for Electricity Generation in a Microbial Fuel Cell Using Halotolerant Catalyst Oceanisphaera arctica YHY1. *Sustainability*, **13**(15), 8508.
10. Bhatia, S.K., Palai, A.K., Kumar, A., Kant Bhatia, R., Kumar Patel, A., Kumar Thakur, V., Yang, Y.-H. 2021. Trends in renewable energy production employing biomass-based biochar. Bioresource technology, **340**, 125644.
11. Quraishi, M., Bhatia, S.K., Pandit, S., Gupta, P.K., Rangarajan, V., Lahiri, D., Varjani, S., Mehariya, S., Yang, Y.-H. 2021. Exploiting Microbes in the Petroleum Field: Analyzing the Credibility of Microbial Enhanced Oil Recovery (MEOR). Energies, **14**(15), 4684.
12. Kumar, M., Kumari, N., Thakur, N., Bhatia, S.K., Saratale, G.D., Ghodake, G., Mistry, B.M., Alavilli, H., Kishor, D.S., Du, X., Chung, S.-M. 2021. A Comprehensive Overview on the Production of Vaccines in Plant-Based Expression Systems and the Scope of Plant Biotechnology to Combat against SARS-CoV-2 Virus Pandemics. Plants, **10**(6), 1213.
13. Kumar, M., Kherawat, B.S., Dey, P., Saha, D., Singh, A., Bhatia, S.K., Ghodake, G.S., Kadam, A.A., Kim, H.-U., Manorama, Chung, S.-M., Kesawat, M.S. 2021. Genome-Wide Identification and Characterization of PIN-FORMED (PIN) Gene Family Reveals Role in Developmental and Various Stress Conditions in Triticum aestivum L. International Journal of Molecular Sciences, **22**(14), 7396.
14. Cho, J.Y., Lee Park, S., Lee, H.-J., Kim, S.H., Suh, M.J., Ham, S., Bhatia, S.K., Gurav, R., Park, S.-H., Park, K., Yoo, D., Yang, Y.-H. 2021. Polyhydroxyalkanoates (PHAs) degradation by the newly isolated marine Bacillus sp. JY14. Chemosphere, **283**, 131172.
15. Vinayak, V., Khan, M.J., Varjani, S., Saratale, G.D., Saratale, R.G., Bhatia, S.K. 2021. Microbial fuel cells for remediation of environmental pollutants and value addition: Special focus on coupling diatom microbial fuel cells with photocatalytic and photoelectric fuel cells. Journal of Biotechnology, **338**, 5-19.
16. Lee HS, Song H-S, Lee H-J, Kim SH, Suh MJ, Cho JY, et al. Comparative study of the difference in behavior of the accessory gene regulator (Agr) in USA300 and USA400 Community-associated methicillin-resistant &lt;i&gt;Staphylococcus aureus (CA-MRSA). J Microbiol Biotechnol. 0000;31(8).
17. Liu, H., Kumar, V., Jia, L., Sarsaiya, S., Kumar, D., Juneja, A., Zhang, Z., Sindhu, R., Binod, P., Bhatia, S.K., Awasthi, M.K. 2021. Biopolymer poly-hydroxyalkanoates (PHA) production from apple industrial waste residues: A review. Chemosphere, **284**, 131427.
18. Bhatia, S.K., Gurav, R., Choi, Y.-K., Lee, H.-J., Kim, S.H., Suh, M.J., Cho, J.Y., Ham, S., Lee, S.H., Choi, K.-Y., Yang, Y.-H. 2021. Rhodococcus sp. YHY01 a microbial cell factory for the valorization of waste cooking oil into lipids a feedstock for biodiesel production. Fuel, **301**, 121070. <https://doi.org/10.1016/j.fuel.2021.121070>
19. Patel, A.K., Singhania, R.R., Awasthi, M.K., Varjani, S., Bhatia, S.K., Tsai, M.-L., Hsieh, S.-L., Chen, C.-W., Dong, C.-D. 2021. Emerging prospects of macro- and microalgae as prebiotic. Microbial Cell Factories, **20**(1), 112. Doi: 10.1186/s12934-021-01601-7
20. Lee, S.M., Lee, H.-J., Kim, S.H., Suh, M.J., Cho, J.Y., Ham, S., Song, H.-S., Bhatia, S.K., Gurav, R., Jeon, J.-M., Yoon, J.-J., Choi, K.-Y., Kim, J.-S., Lee, S.H., Yang, Y.-H. 2021. Engineering of Shewanella marisflavi BBL25 for biomass-based polyhydroxybutyrate production and evaluation of its performance in electricity production. International Journal of Biological Macromolecules, **183**, 1669-1675. <https://doi.org/10.1016/j.ijbiomac.2021.05.105>
21. Song, H.J., Gurav, R., Bhatia, S.K., Lee, E.B., Kim, H.J., Yang, Y.-H., Kan, E., Kim, H.H., Lee, S.H., Choi, Y.-K. 2021. Treatment of microcystin-LR cyanotoxin contaminated water using Kentucky bluegrass-derived biochar. Journal of Water Process Engineering, **41**, 102054. IF. 3.46. <https://doi.org/10.1016/j.jwpe.2021.102054>
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23. Lee, S.M., Lee, H.-J., Kim, S.H., Suh, M.J., Cho, J.Y., Ham, S., Jeon, J.-M., Yoon, J.-J., Bhatia, S.K., Gurav, R., Lee, E.Y., Yang, Y.-H. 2021. Screening of the strictly xylose-utilizing Bacillus sp. SM01 for polyhydroxybutyrate and its co-culture with Cupriavidus necator NCIMB 11599 for enhanced production of PHB. International Journal of Biological Macromolecules, **181**, 410-417. IF. 5.1. <https://doi.org/10.1016/j.ijbiomac.2021.03.149>
24. Han, Y.-H., Kim, H.J., Choi, T.-R., Song, H.-S., Lee, S.M., Park, S.L., Lee, H.S., Cho, J.Y., Bhatia, S.K., Gurav, R., Park, K., Yang, Y.-H. 2021. Improvement of cadaverine production in whole cell system with baker’s yeast for cofactor regeneration. Bioprocess and Biosystems Engineering, **44**(4), 891-899. IF. 2.3. Doi: 10.1007/s00449-020-02497-0
25. Gurav R., **Bhatia, S.K**., Choi, T.-R., Choi, Y.-K., Kim, H.J., Song, H.-S., Park, S.L., Lee, H.S., Lee, S.M., Choi, K.-Y., Yang, Y.-H. 2021. Adsorptive removal of crude petroleum oil from water using floating pinewood biochar decorated with coconut oil-derived fatty acids. *Science of The Total Environment*, **781**, 146636. <https://doi.org/10.1016/j.scitotenv.2021.146636>
26. Park, S.L., Cho, J.Y., Choi, T.-R., Song, H.-S., **Bhatia, S.K**., Gurav, R., Park, S.-H., Park, K., Joo, J.C., Hwang, S.Y., Yang, Y.-H. 2021. Improvement of polyhydroxybutyrate (PHB) plate-based screening method for PHB degrading bacteria using cell-grown amorphous PHB and recovered by sodium dodecyl sulfate (SDS). International Journal of Biological Macromolecules, 177, 413-421. IF. 5.2. <https://doi.org/10.1016/j.ijbiomac.2021.02.098>
27. Park, S.A., Bhatia, S.K., Park, H.A., Kim, S.Y., Sudheer, P.D.V.N., Yang, Y.-H., Choi, K.-Y. 2021. Bacillus subtilis as a robust host for biochemical production utilizing biomass. *Critical Reviews in Biotechnology*, **41**(6), 827-848.
28. **Bhatia, S.K**., Otari, S.V., Jeon, J.-M., Gurav, R., Choi, Y.-K., Bhatia, R.K., Pugazhendhi, A., Kumar, V., Rajesh Banu, J., Yoon, J.-J., Choi, K.-Y., Yang, Y.-H. 2021. Biowaste-to-bioplastic (polyhydroxyalkanoates): Conversion technologies, strategies, challenges, and perspective. Bioresource technology, **326**, 124733. IF. 7.53. <https://doi.org/10.1016/j.biortech.2021.124733>
29. **Bhatia, S.K**, Gurav, R., Choi, Y.-K., Choi, T.-R., Kim, H.-j., Song, H.-S., Mi Lee, S., Lee Park, S., Soo Lee, H., Kim, Y.-G., Ahn, J., Yang, Y.-H. 2021. Bioprospecting of exopolysaccharide from marine *Sphingobium yanoikuyae* BBL01: Production, characterization, and metal chelation activity. Bioresource technology, 324, 124674. IF. 7.53. <https://doi.org/10.1016/j.biortech.2021.124674>
30. Thakur, V., Ratho, R.K., Kumar, P., **Bhatia, S.K**., Bora, I., Mohi, G.K., Saxena, S.K., Devi, M., Yadav, D., Mehariya, S. 2021. Multi-Organ Involvement in COVID-19: Beyond Pulmonary Manifestations. Journal of Clinical Medicine, **10**(3), 446. IF. 3.3. https://www.mdpi.com/2077-0383/10/3/446
31. Kumar, M.D., Kavitha, S., Tyagi, V.K., Rajkumar, M., **Bhatia, S.K**., Kumar, G., Banu, J.R. 2021. Macroalgae-derived biohydrogen production: biorefinery and circular bioeconomy. Biomass Conversion and Biorefinery. IF. 2.6. doi:10.1007/s13399-020-01187-x
32. Yadav, G., Sekar, M., Kim, S.-H., Geo, V.E., **Bhatia, S.K**., Sabir, J.S.M., Chi, N.T.L., Brindhadevi, K., Pugazhendhi, A. 2021. Lipid content, biomass density, fatty acid as selection markers for evaluating the suitability of four fast growing cyanobacterial strains for biodiesel production and ameliorating the abiotic factors. Bioresource technology, 124654. IF. 7.53. <https://doi.org/10.1016/j.biortech.2020.124654>

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1. **Bhatia, S.K**., Vivek, N., Kumar, V., Chandel, N., Thakur, M., Kumar, D., Yang, Y.-H., Pugazendhi, A., Kumar, G. 2020. Molecular biology interventions for activity improvement and production of industrial enzymes. Bioresource technology, 124596. IF. 7.53. <https://doi.org/10.1016/j.biortech.2020.124596>
2. **Bhatia, S.K**., Jagtap, S.S., Bedekar, A.A., Bhatia, R.K., Rajendran, K., Pugazhendhi, A., Rao, C.V., Atabani, A.E., Kumar, G., Yang, Y.-H. 2021. Renewable biohydrogen production from lignocellulosic biomass using fermentation and integration of systems with other energy generation technologies. Science of The Total Environment, **765**, 144429. IF. 6.55. <https://doi.org/10.1016/j.scitotenv.2020.144429>
3. Park, Y.-L., Song, H.-S., Choi, T.-R., Lee, S.M., Park, S.L., Lee, H.S., Kim, H.-J., **Bhatia, S.K**., Gurav, R., Park, K.-M., Yang, Y.-H. 2020. Revealing of sugar utilization systems in Halomonas sp. YLGW01 and application for poly(3-hydroxybutyrate) production with low-cost medium and easy recovery. International Journal of Biological Macromolecules. IF. 5.16. <https://doi.org/10.1016/j.ijbiomac.2020.11.163>
4. Kumar H, Bhardwaj K, Dhanjal DS, Nepovimova E, Șen F, Regassa H, Singh R, Verma R, Kumar V, Kumar D, **Bhatia SK**, Kuča K. Fruit Extract Mediated Green Synthesis of Metallic Nanoparticles: A New Avenue in Pomology Applications. International Journal of Molecular Sciences. 2020; 21(22):8458. IF. 4.55. doi: [10.3390/ijms21228458](https://dx.doi.org/10.3390/ijms21228458)
5. Park, Y.-L., Choi, T.-R., Kim, H.J., Song, H.-S., Lee, H.S., Park, S.L., Lee, S.M., Kim, S.H., Park, S., **Bhatia, S.K**., Gurav, R., Sung, C., Seo, S.-O., Yang, Y.-H. 2020b. NaCl concentration-dependent aminoglycoside resistance of Halomonas socia CKY01 and identification of related genes. Journal of Microbiology and Biotechnology. IF. 1.9. doi: 10.4014/jmb.2009.09017
6. Song, H.-S., Choi, T.-R., Han, Y.-H., Park, Y.-L., Park, J.Y., Yang, S.-Y., **Bhatia, S.K**., Gurav, R., Kim, Y.-G., Kim, J.-S. 2020. Increased resistance of a methicillin-resistant Staphylococcus aureus Δ agr mutant with modified control in fatty acid metabolism. AMB Express, 10, 1-10. IF. 0.68. https://doi.org/10.1186/s13568-020-01000-y
7. Sharma R, Garg P, Kumar P, **Bhatia SK**, Kulshrestha S. Microbial Fermentation and Its Role in Quality Improvement of Fermented Foods. Fermentation. 2020; 6(4):106. [**https://doi.org/10.3390/fermentation6040106**](https://doi.org/10.3390/fermentation6040106)
8. Park, J.Y., Park, Y.-L., Choi, T.-R., Kim, H.J., Song, H.-S., Han, Y.-H., Lee, S.M., Park, S.L., Lee, H.S., **Bhatia, S.K**., Gurav, R., Yang, Y.-H. 2020a. Production of γ-aminobutyric acid from monosodium glutamate using Escherichia coli whole-cell biocatalysis with glutamate decarboxylase from Lactobacillus brevis KCTC 3498. Korean Journal of Chemical Engineering. IF. 2.24. doi: 10.1007/s11814-020-0633-z
9. Bhatia, R.K., Ullah, S., Hoque, M.Z., Ahmad, I., Yang, Y.-H., Bhatt, A.K., **Bhatia, S.K**. 2020. Psychrophiles: A source of cold-adapted enzymes for energy efficient biotechnological industrial processes. *Journal of Environmental Chemical Engineering*, 104607. IF. 4.3. <https://doi.org/10.1016/j.jece.2020.104607>
10. Kumar, H., Bhardwaj, K., Kaur, T., Nepovimova, E., Kuča, K., Kumar, V., **Bhatia, S.K**., Dhanjal, D.S., Chopra, C., Singh, R., Guleria, S., Bhalla, T.C., Verma, R., Kumar, D. 2020. Detection of Bacterial Pathogens and Antibiotic Residues in Chicken Meat: A Review. *Foods*, **9**(10), 1504. IF. 4.0. [**https://doi.org/10.3390/foods9101504**](https://doi.org/10.3390/foods9101504)
11. Song, H.-S., Choi, T.-R., **Bhatia, S.K**., Lee, S.M., Park, S.L., Lee, H.S., Kim, Y.-G., Kim, J.-S., Kim, W., Yang, Y.-H. 2020. Combination Therapy Using Low-Concentration Oxacillin with Palmitic Acid and Span85 to Control Clinical Methicillin-Resistant Staphylococcus aureus. *Antibiotics*, **9**(10), 682. IF. 3.89.  [**https://doi.org/10.3390/antibiotics9100682**](https://doi.org/10.3390/antibiotics9100682)
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13. Kumar, H., Chen, B.-H., Kuca, K., Nepovimova, E., Kaushal, A., Nagraik, R., **Bhatia, S.K**., Dhanjal, D.S., Kumar, V., Kumar, A., Upadhyay, N.K., Verma, R., Kumar, D. 2020. Understanding of Colistin Usage in Food Animals and Available Detection Techniques: A Review. *Animals*, **10**(10), 1892. IF. 2.32. [**https://doi.org/10.3390/ani10101892**](https://doi.org/10.3390/ani10101892)
14. Gurav, R., **Bhatia, S.K**., Choi, T.-R., Choi, Y.-K., Kim, H.J., Song, H.-S., Lee, S.M., Lee Park, S., Lee, H.S., Koh, J., Jeon, J.-M., Yoon, J.-J., Yang, Y.-H. 2021. Application of macroalgal biomass derived biochar and bioelectrochemical system with Shewanella for the adsorptive removal and biodegradation of toxic azo dye. *Chemosphere*, **264**, 128539. IF. 5.70. doi:[10.1016/j.chemosphere.2020.128539](https://doi.org/10.1016/j.chemosphere.2020.128539)
15. Rajesh Banu, J., Ginni, G., Kavitha, S., Yukesh Kannah, R., Adish Kumar, S., **Bhatia, S.K**., Kumar, G. 2021. Integrated biorefinery routes of biohydrogen: Possible utilization of acidogenic fermentative effluent. *Bioresource technology*, **319**, 124241. IF. 7.53. <https://doi.org/10.1016/j.biortech.2020.124241>
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17. Han, Y.-H., Choi, T.-R., Park, Y.-L., Park, J.Y., Song, H.-S., Kim, H.J., Lee, S.M., Park, S.L., Lee, H.S., **Bhatia, S.K**., Gurav, R., Yang, Y.-H. 2020. Enhancement of pipecolic acid production by the expression of multiple lysine cyclodeaminase in the Escherichia coli whole-cell system. *Enzyme and Microbial Technology*, **140**, 109643. IF.3.44. <https://doi.org/10.1016/j.enzmictec.2020.109643>
18. **Bhatia, S.K**., Bhatia, R.K., Jeon, J.-M., Pugazhendhi, A., Kumar Awasthi, M., Kumar, D., Kumar, G., Yoon, J.-J., Yang, Y.-H. 2021. An overview on advancements in biobased transesterification methods for biodiesel production: Oil resources, extraction, biocatalysts, and process intensification technologies. Fuel, **285**, 119117. IF. 5.77. <https://doi.org/10.1016/j.fuel.2020.119117>
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22. Song, H.-S., Jeon, J.-M., **Bhatia, S.K**., Choi, T.-R., Lee, S.M., Park, S.L., Lee, H.S., Yoon, J.-J., Ahn, J., Lee, H., Brigham, C.J., Choi, K.-Y., Yang, Y.-H. 2020b. Enhanced isobutanol production by co-production of polyhydroxybutyrate and cofactor engineering. Journal of Biotechnology, **320**, 66-73. IF. 3.50. <https://doi.org/10.1016/j.jbiotec.2020.06.017>.
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4. Bhatia RK, **Bhatia SK**, Mehta PK, Bhalla TC. Biotransformation of nicotinamide to nicotinyl hydroxamic acid at bench scale by amidase acyl transfer activity of pseudomonas putida BR-1. J Mol Catal B Enzym. 2014;108:89-95. doi.org/10.1016/j.molcatb.2014.07.001. IF 2.26
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2. **Bhatia SK**, Mehta PK, Bhatia RK, Bhalla TC. An isobutyronitrile-induced bienzymatic system of alcaligenes sp. MTCC 10674 and its application in the synthesis of α-hydroxyisobutyric acid. Bioprocess Biosyst Eng. 2013;36(5):613-25. doi: 10.1007/s00449-012-0817-y. IF 2.37
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###### Project as main PI

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Project title** | **Funding agency** | **Reference No** | **Amount** |
| **1** | Research on novel transcription factor discovery and increase of bioplastic production from Ralstonia using DNA capture method. | National Research Foundation of Korea (NRF), funded by the Ministry of Education,  South Korea | 2021R1F1A1050325 | $300,000(2021.6.1-2024.6.30) |
| **2.** | Development of biotransformation system for Itaconate production |  National Research Foundation of Korea (NRF), funded by the Ministry of Education,  South Korea |   NRF- 2017R1D1A1B03030766 |  $300,000(2017.3.1-2020.2.28) |
| **3.** |  Bioplastic production from coffee waste |  Konkuk University, South Korea |  KU Research Professor Program  |  $98,00(2018.3.1-2019.12.31) |

###### Patent

1. Mehtod for biotransformation using proteins left in enzymatic pretreated lignocellulosic biomass. 1017769060000 (2017.09.04)
2. Method for Isobutanol production from an engineered *Shewanella oneidensis*. 1017436030000 (2017.05.30)
3. Method for synthesizing derivatives of 5-O-cinnamoyl-xylitol acid using enzyme. 1016293740000 (2016.06.03)
4. Carbohydrate and protein separation process from food waste. 1017250480000 (2017.04.04)
5. A Method for continuedly production of large volume cadaverine using immobilized carrier and lysine decarboxylase―overexpressing recombinant E．coli. 1018735410000 (2018.06.26)
6. A Method for production of cadaverin by immobilization of lysine decarboxylase-overexpressing recombinant E. coli using barium-alginate. 1017229840000 (2017.03.29)
7. A Method for production of poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) comprising high amounts of 3-hydroxy hexanoate using butyrate. 1017209330000 (2017.03.23).
8. Method for synthesizing derivatives of 6-O-cinnamoyl-sorbitol acid using enzyme. 1015980150000 (2016.02.22)
9. Bioplastic, poly(HB-co-HHx) production process using fat and oils separated from coffee waste. 1020517430000 (2019.11.27)
10. Bioplastic, poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) production process using fat and oils separated from egg yolk. 1020022540000 (2019.07.15)
11. Method for manufacturing Itaconic acid by whole-cell bioconversion. 1020332170000 (2019.10.10)
12. Producing method of cadaverin by recycling of pyridoxal-5-phosphate with pyridoxal kinase. 1018077750000 (2017.12.05)

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2. **Bhatia S K**, Bhatia R K, Mehta P K and Bhalla T C (2012) Bienzymatic bioprocess for the conversion of 2-Hydroxyisobutyronitrile into 2-hydroxyisobutyric acid. World Congress on Biotechnology.
3. **Bhatia S K**, Bhatia R K, Mehta P K, Kumar V and Bhalla T C (2012) Factorial design an efficient approach to screen main factors influencing growth and aryalacetonitrilase production of Alcaligenes sp. MTCC 10675. International conference on advances in biological sciences. 15march-17 march. Kannur, India.
4. Kumar V, Mehta P K, **Bhatia S K**, Bhatia R.K and Bhalla T C (2011) Isolation of alkalophilic nitrile degrading bacteria from industrial effluents. In: 52nd annual conference of Association of Microbiologist of India on internal conference on microbial biotechnology for sustainable development. 3-6 Nov. Chandigarh, India.
5. Bhatia R K, **Bhatia S K**, Mehta P K, Kumar V and Bhalla T C (2011) Production of nicotinyl hydroxamic acid using *Pseudomonas* sp. BR1. In: 52nd annual conference of Association of Microbiologist of India on internal conference on microbial biotechnology for sustainable development. 3-6 Nov. Chandigarh, India.
6. Mehta P K, **Bhatia S K**, Bhatia R K, Kumar V and Bhalla T C (2011) Thermostable amidase from Geobacillus sp. RL-2A: isolation and screening. In: 52nd annual conference of Association of Microbiologist of India on internal conference on microbial biotechnology for sustainable development. 3-6 Nov. Chandigarh, India.
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9. Bhatia R K, **Bhatia S K**, Mehta P K, Kumar V and Bhalla T C (2010) Studies on nitrile metabolizing bacteria isolated from the rhizosphere of some cyanogenic plants. In: 51st annual conference of Association of Microbiologist of India on internal symposium on recent advances in cross-disciplinary microbiology: avenues & challenges 14-17 Sep. Ranchi India.
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11. Bhalla T C, Mehta P K, Sharma N N and **Bhatia S K** (2009) Production ofisonicotinic acid using agar entrapped whole cells of *Nocardia globerula* NHB-2. In: XVII International Conference on Bioencapsulation, 24-26 Sep. Groningen, Netherland.

###### Books edited

* Bioremediation using weeds (Springer, 2021). Editors: Deepak Pant, Shashi Kant Bhatia, Anil K. Patel, Anand Giri. ISBN: 978-981-33-6551-3. DOI:[10.1007/978-981-33-6552-0](http://dx.doi.org/10.1007/978-981-33-6552-0)
* Wastewater Based Microbial Biorefinery for Bioenergy Production (Sustainability, 2021). Editor: shashi Kant Bhatia. ISBN: ISBN 978-3-0365-1951-7. https://doi.org/10.3390/books978-3-0365-1951-7

###### Chapter in Books

1. Kumar V, Kumar, Gurav R.G, Yunh YH, Bhatia SK. Utilization of Weed Plants for Biochemicals and Bioactive Compounds Production. Bioremediation using weeds. pp 183-206. ISBN: 978-981-33-6551-3
2. Gurav R.G, Bhatia SK, Jagtap U, Yang YH, Choi YK, Tang J, Bhatnagar A. Utilization of Invasive Weed Biomass for Biochar Production and Its Application in Agriculture and Environmental Clean-up. Bioremediation using weeds. pp 207-24. ISBN: 978-981-33-6551-3
3. **SK Bhatia**, P Wadhwa, RK Bhatia, SKS Patel, YH Yang. Strategy for Biosynthesis of Polyhydroxyalkonates Polymers/Copolymers and Their Application in Drug Delivery. Biotechnological Applications of Polyhydroxyalkanoates. 2019. pp 13-34. ISBN: 978-981-13-3758-1
4. S Patel, K Sandeep, M Singh, GP Singh, JK Lee, **SK Bhatia**, VC Kalia. Biotechnological Application of Polyhydroxyalkanoates and Their Composites as Anti-microbials Agents. Biotechnological Applications of Polyhydroxyalkanoates. 2019. Pp 207-225.
5. Bhalla T C, Mehta P K, **Bhatia S K**, Thakur N and Pratush A (2008) Microorganisms for Food and Feed. In: Fundamentals of Food Biotechnology, Anne Publisher, New Delhi. ISBN 978-93-81141-49-6
6. Tek Chand Bhalla, **Shashi Kant Bhatia**, Vijay Kumar (2013) Hydroxy Acids: Production and Applications. Advances in Industrial Biotechnology. IK International Publishing House Pvt. Ltd. India. 56-76. ISBN 978-93-82332-76-3
7. **Shashi Kant Bhatia,** Ravi Kant Bhatia, Arvind Kumar Bhatt and Yung-Hun Yang (2016). Microbial biodiesel a reserviour for future fuel. Microorganism: Tools of Sustainability. Publisher: Bishen Singh Mahendra Pal Singh, 126-40. ISBN: 978-81-211-0950-5
8. Bhatia Ravi Kant, **Bhatia Shashi Kant**, Vishal Ahuja and Bhatt Arvind (2016) Bacterial communication: Mechanism and inhibition. Microorganism: Tools of Sustainability. Publisher: Bishen Singh Mahendra Pal Singh, 171-85. ISBN: 978-81-211-0950-5
9. Bhatia Ravi Kant, **Bhatia Shashi Kant,** Bhalla Tek Chand, Bhatt Arvind Kumar (2017) Green Synthesis of Hydroxamic Acid and Its Potential Industrial Applications. Microbial Applications Vol.2, 168-184. DOI 10.1007/978-3-319-52669-0 ISBN: 978-3-319-52668-3 (Print) 978-3-319-52669-0 (Online)

### Technical expertise

* Isolation and characterization of industrially important microbes
* Identification of bacterial isolates by biochemical kits and modern biotechnological methods (16s rRNA gene method)
* Optimization of cultural condition using factorial design
* Bioprocess development at bench scale
* Protein purification methods
* Gel electrophoresis (SDS-PAGE and Native PAGE)
* Design of specific primers and degenerate primer
* Plasmid DNA extraction methods (miniprep and large scale)
* Cloning and transformation of bacteria
* Work experience in *Streptomyces coelicolor*
* Genetic engineering of *E. coli* for PHA production
* DNA analysis methods (Southern blotting – Northern Blotting –Western blotting).
* Alignment the target sequence with data of NCBI and DNA Analysis (BLAST, ClustalW)
* Computer skills

### Workshops and training

* Attended the National Roving seminar on “**Patenting in Biotechnology**” organized by Department of Biotechnology H.P. University Shimla-5, Sponsered by DBT,GOI.
* Participated in seminar on **“Students Participation In Quality Enhancement**” organized by **NAAC and UGC –Academic Staff College,** Shimla
* Attended Assocham Global Knowledge Millennium Summit-IV on **“Nanotechnology And Biotechnology”** Sponsored by ASSOCHAM-New Delhi.
* Attended winter school training programme on **“Gene cloning and expression in bacteria”** organized by NRCBS centre of Madurai Kamraj University in September 16 to 1st Oct 2010.
* Participated in 51st annual conference of Association of Microbiologist India on **recent advances in cross-disciplinary microbiology: avenues & challenges** 14-17 Sep. Ranchi India
* Participated in 52st annual conference of Association of Microbiologist India on microbial biotechnology for sustainable development 3-6 Nove. 2011. Chandigarh India
* Participated in Global biodegradable plastic conference organized by Korea Biodegradable Plastic Association in October 30th 2013 at Seoul South Korea.

# Membership

* President of NGO: Himalayan Biotechnology and Enzyme Research
* Life time senior member: International Society of Research and Development
* Life member LM 2436: Biotech research society of India
* Life member 5088-2021: Association of Microbiologists of India

# Editorial board

* Associate editor: Microbial Cell Factories (IF. 5.1)
* Associate editor: Frontiers in Microbiology (SCIE, IF 5.6)
* Editorial Board member: Biomass Conversion and Biorefinery (IF. 4.98)
* Academic editor: PLOS one (IF. 3.2)
* Section editor: Energies (IF. 3.0)
* Section editor: Sustainability (MDPI SCIE IF. 3.2)
* Review editor: Frontiers in Energy Research (IF 4.0)

# Guest ediotrs for topic

* 3 Biotech (2021): **Novel natural and engineered enzymes: Technology and Applications.** <https://www.springer.com/journal/13205/updates/18702858?gclid=EAIaIQobChMIu-q6sZi_8gIVkzytBh27ngMCEAAYASAAEgIMGvD_BwE>**.**
* Sustainability (2021): Wastewater Based Microbial Biorefinery for Bioenergy Production. https://www.mdpi.com/journal/sustainability/special\_issues/Wastewater\_Based

# Referees

* **Prof. T. C. Bhalla**, Chairman, Department of Biotechnology, Himachal Pradesh University, Summer Hill, Shimla 171005, HP (India) email: bhallatc@rediffmail.com Fax no. +91-177-283154
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* **Prof. Yung hun Yang** Department of Biological Engineering, Konkuk University, Seoul, South Korea 143701 email: seokor@konkuk.ac.kr
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# Personal Details

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**Declaration**

I hereby declare that all the information given above is true to the best of my knowledge.

South Korea

Dec. 05th, 2021