NAME	**Dr. Sumit Kumar**
DESIGNATION	Assistant Professor
EMAIL ID	skumar37@amity.edu
CONTACT NUMBER	9801413780
RESEARCH INTERESTS	Enzyme and Microbial Biotechnology; Extremophiles and their bioactive molecules

EDUCATIONAL QUALIFICATIONS:

Name of College / University	Degree	Year
Bangalore University, Bangalore, Karnataka, India	B.Sc.	2005
Sardar Patel University, Anand, Gujarat, India	M.Sc.	2007
Indian Institute of Technology Delhi, New Delhi, India	Ph.D.	2014

Title of Ph.D. thesis: "**Studies on moderately halophilic *Marinobacter* sp. EMB8 and its salt and solvent stable α-amylase**"

EXPERIENCE

Designation	Type of post held (teaching/ research)	Name of the Institute	Year (From – To)
Assistant Professor	Teaching and Research	Amity Institute of Biotechnology, Amity University Uttar Pradesh, Noida, India	August 2022- Continue
Project consultant	Research	Indian Institute of Technology Delhi, India	April 2022- August 2022
CSIR-SRA (Scientist's Pool Scheme)	Research	Indian Institute of Technology Delhi, India	April 2019- March 2022
Research Associate	Research	Indian Institute of Technology Delhi, India	June 2018- March 2019
Postdoctoral Fellow	Research	Institute of Microbiology, Chinese academy of sciences, Beijing, China	Feb 2016- Feb 2018
Research Associate	Research	Indian Institute of Technology Delhi, India	May 2015- February 2016

No. of Ph.D. students supervised	Nil
No. of Post-Doc	Nil
No. of M.Tech. Students supervised:	Nil
No. of B.Tech. Students supervised:	5
PUBLICATIONS: 31 (Publications in peer reviewed Scopus and WOS indexed journals and books)	**List of publications** 1. **Sumit Kumar** and S.K. Khare (2012) "Purification and characterization of maltooligosaccharide-forming α-amylase from moderately halophilic *Marinobacter* sp.

EMB8", **Bioresource Technology**. 116:247-251. **(Impact Factor 11.889)**

2. **Sumit Kumar**, R. Karan, S. Kapoor, S.P. Singh and S.K. Khare (2012) "Screening and isolation of halophilic bacteria producing industrially important enzymes", **Brazilian Journal of Microbiology**. 43:1595-1603. **(Impact Factor 2.214)**

3. A. Sinha, **Sumit Kumar** and S.K. Khare (2013) "Biochemical basis of mercury remediation and bioaccumulation by *Enterobacter* sp. EMB21", **Applied Biochemistry and Biotechnology**. 169:256-267. **(Impact Factor 3.094)**
4. A. Sinha, A. Singh, **Sumit Kumar**, S.K. Khare and A. Ramanan (2014) "Microbial mineralization of struvite: A promising process to overcome phosphate sequestering crisis", **Water Research**. 54:33-43. **(Impact Factor 13.4)**
5. **Sumit Kumar** and S.K. Khare (2015) "Chloride activated halophilic α-amylase from *Marinobacter* sp. EMB8: Production optimization and nanoimmobilization for efficient starch hydrolysis", **Enzyme Research**. Article ID 859485.

6. **Sumit Kumar** and S.K. Khare (2016) "Structural elucidation and molecular characterization of *Marinobacter* sp. α-amylase", **Preparative Biochemistry and Biotechnology**. 46:238-246. **(Impact Factor 3.141)**

7. **Sumit Kumar**, J. Grewal, A. Sadaf, R. Hemamalini and S.K. Khare (2016) "Halophiles as a source of polyextremophilic α-amylase for industrial applications", **AIMS Microbiology**. 2: 1-26.

8. Neerja, Jasneet Grewal, Amrik Bhattacharya, **Sumit Kumar**, D.K. Singh and S.K. Khare (2016)

	"Biodegradation of 1,1,1-trichloro-2,2-bis (4-chlorophenyl) ethane (DDT) by using *Serratia marcescens* NCIM 2919", **Journal of Environmental Science and Health, Part B**. 51:809-816. **(Impact Factor 2.506)** 9. Dahe Zhao, Haibo Yang, Junyu Chen, Feiyue Cheng, **Sumit Kumar**, Jing Han, Ming Li, Jian Zhou and Hua Xiang (2017) "Development of the first gene expression system for *Salinicoccus* strains with potential application in bioremediation of hypersaline wastewaters", **Applied Microbiology and Biotechnology**. 101:7249-7258. **(Impact Factor 5.560)** 10. Dahe Zhao#, **Sumit Kumar#**, Jian Zhou, Rui Wang, Ming Li, and Hua Xiang (2017) "Isolation and complete genome sequence of *Halorientalis hydrocarbonoclasticus* sp. nov., a hydrocarbon-degrading haloarchaeon", **Extremophiles**. 21:1081-1090. **(Impact Factor 3.035) # Joint first author** 11. **Sumit Kumar**, Arun K. Dangi, Pratyoosh Shukla, Debabrat Baishya and Sunil K. Khare (2019) "Thermozymes: adaptive strategies and tools for their biotechnological applications", **Bioresource Technology**. 278:372-382. **(Impact Factor 11.889)** 12. Mukesh Kumar Awasthi, Surendra Sarsaiya, Steven Wainaina, Karthik Rajendran, **Sumit Kumar**, Wang Quan, Yumin Duan, Sanjeev Kumar Awasthi, Hongyu Chen, Ashok Pandey, Zengqiang Zhang, Archana Jain, Mohammad J. Taherzadeh (2019) " A critical review of organic manure biorefinery models toward sustainable circular bioeconomy: Technological challenges, advancements, innovations, and future perspectives", **Renewable and Sustainable Energy Reviews**. 111:115-

131. **(Impact Factor 16.799)**

13. **Sumit Kumar**, Jian Zhou, Ming Li, Hua Xiang, and Dahe Zhao (2020) "Insights into the metabolism pathway and functional genes of long-chain aliphatic alkane degradation in haloarchaea". **Extremophiles**. 24:475-483. **(Impact Factor 3.035)**

14. **Sumit Kumar**, Neerja Yadav, Lata Nain and S.K. Khare (2020) "A simple downstream processing protocol for the recovery of lactic acid from the fermentation broth", **Bioresource Technology.** 318:124260. **(Impact Factor 11.889)**

15. Ayesha Sadaf, **Sumit Kumar**, Lata Nain and S.K. Khare (2021) "Bread waste to lactic acid: Applicability of simultaneous saccharification and solid state fermentation", **Biocatalysis and Agricultural Biotechnology.** 32, 101934.

16. M. Zhang, Q. Xue, S. Zhang, H. Zhou, T. Xu, J. Zhou, Y. Zheng, M. Li, **Sumit Kumar**, D. Zhao, H. Xiang (2021) "Development of whole-cell catalyst system for sulfide biotreatment based on the engineered haloalkaliphilic bacterium", **AMB Express.** 11:1-14. **(Impact Factor 4.126)**

17. Nikky Goel, S.W. Fatima, **Sumit Kumar**, R. Sinha, and S.K. Khare (2021) "Antimicrobial resistance in biofilms: Exploring marine actinobacteria as a potential source of antibiotics and biofilm inhibitors", **Biotechnology Reports.** e00613.

18. Nitin Srivastava, **Sumit Kumar**, Sugathan Shiburaj, Anshu Gupta and S.K. Khare (2021) "Cellular adaptation responses in a halotolerant *Exiguobacterium* exhibiting organic solvent tolerance with simultaneous protease production", **Environmental Technology & Innovation.** 23:101803. **(Impact Factor 7.758)**

19. H. Zhou, M. Yang, Q. Xue, **Sumit Kumar**, S. Zhang,

J. Zhou, D. Zhao, H. Xiang (2022) "*Rhabdonatronobacter sediminivivens* gen. nov., sp. nov. isolated from the sediment of Hutong Qagan Soda Lake", **Archives of Microbiology.** 204(2):1-7. **(Impact Factor 2.667)**

20. Ming Yang, Qiong Xue, Zhenqiang Zuo, Jian Zhou, Shengjie Zhang, Ming Li, Heng Zhou, Manqi Zhang, **Sumit Kumar**, Wei Li, Guiying Chen, Dahe Zhao, Hua Xiang (2022) "*Aliidiomarina halalkaliphila* sp. nov., a haloalkaliphilic bacterium isolated from a soda lake in Inner Mongolia Autonomous Region, China", **International Journal of Systematic and Evolutionary Microbiology.** 72(3):1-10. **(Impact Factor 2.4)**

21. H. Zhou, D. Zhao, S. Zhang, Q. Xue, M. Zhang, H. Yu, J. Zhou, M. Li, **Sumit Kumar**, H. Xiang (2022) "Metagenomic insights into the environmental adaptation and metabolism of *Candidatus* Haloplasmatales, one archaeal order thriving in saline lakes", **Environmental Microbiology.** 24(5): 2239-2258. **(Impact Factor 5.476)**

22. D. Zhao, S. Zhang, **Sumit Kumar**, H. Zhou, Q. Xue, W. Sun, J. Zhou, H. Xiang (2022) "Comparative Genomic Insights into the Evolution of *Halobacteria*-Associated "*Candidatus* Nanohaloarchaeota", **mSystems.** 7: e00669-22. **(Impact Factor 7.324)**

23. H. Fatima, **Sumit Kumar** and S.K. Khare (2022) Insights from the genome sequence of *Bacillus tropicus* EMB20, an efficient β-lactamase-producing bacterium. **3 Biotech.** 12: 330. **(Impact Factor 2.893)**

24. R.M. Martínez-Espinosa, **Sumit Kumar**, S.K. Upadhyay and F. Orhan (2023) Editorial: Adaptation of halophilic/halotolerant microorganisms and their applications. **Frontiers in Microbiology** 14:1252921. **(Impact Factor 5.2)**

Book Chapter

1. R. Karan, **Sumit Kumar**, R. Sinha and S.K. Khare

(2012) “Halophilic microorganisms as source of novel enzymes”, In: T. Satyanarayana, B. N. Johri, A. Prakash (eds). Microorganisms in Sustainable Agriculture and Biotechnology. **Springer, Netherlands**. P. 555-579.

2. Shubhrima Ghosh, **Sumit Kumar** and S. K. Khare (2019) Microbial diversity of saline habitats: An overview of biotechnological applications. Microorganisms in Saline Environments: Strategies and Functions, Eds: Giri**,** Bhoopander, Varma, Ajit. Springer International Publishing, eds DOI-10.1007/978-3-030-18975-4, Hardcover ISBN-978-3-030-18974-7, eBook ISBN-978-3-030-18975-4

3. Mukesh Kumar Awasthi, Junchao Zhao, Parimala Gnana Soundari, **Sumit Kumar**, Hongyu Chen, Sanjeev Kumar Awasthi, Yumin Duan, Tao Liu, Ashok Pandey, and Zengqiang Zhang (2019) Sustainable Management of Solid Waste, Editor(s): Mohammad J. Taherzadeh, Kim Bolton, Jonathan Wong, Ashok Pandey, in Sustainable Resource Recovery and Zero Waste Approaches, Elsevier, Pages 79-99, ISBN 9780444642004

4. **Sumit Kumar** and S. K. Khare (2021) Recovery and purification of industrial enzymes, Eds: Kermasha, Selim, Eskin, Michael. Elsevier, Academic Press Pages 59-75, ISBN 978-0-12-800217-9

5. H. Fatima, J. Grewal, **Sumit Kumar** and S.K. Khare (2023) Biorefining Lignocellulosic Feedstocks for Microbial Production of Organic Acids. In *Biotic Resources* CRC Press, Pages 59-77.

6. R. Hemamalini, **Sumit Kumar**, and S.K. Khare (2023) "Immobilization of β-galactosidases." *Enzymes Beyond Traditional Applications in Dairy Science and*

	Technology. Elsevier, Academic Press Pages 351-360. 7. **Sumit Kumar**, B.B. Das, N. Srivastava, and S.K. Khare (2023) "Biochemistry and Biomolecules of Halophiles: Recent Trends and Prospects." *Some Key Topics in Chemistry and Biochemistry for Biotechnologists*. CRC Press, Pages 91-116. **Google Scholar citation index** **Citations 1171** **h-index 16** **i10-index 19**
PATENTS (1)	**Patent** A hydrocarbon degrading *Halorientalis* strain at hypersaline condition and the culture method (2017) granted by **State Intellectual Property Office of the People's Republic of China**. **Patent No.: ZL 201710199115.1**
RESEARCH PROJECTS Completed: ***(2)*** Ongoing: ***(Nil)***	1. "**Biodegradation of petroleum hydrocarbons under saline conditions: Understanding molecular mechanisms and developing biocatalysts for effective remediation**" sanctioned by **Chinese academy of sciences**, Beijing, China (2016-2018) 2. "**Studies on halocins as antimicrobial molecules from haloarchaea**" sanctioned by **Council for Scientific and Industrial Research** (**CSIR**), Govt. of India (2019-2022)
AWARDS & HONOURS/ DISTINCTIONS	• Awarded **CSIR-SRA (Scientist's Pool Scheme)** by Council for Scientific and Industrial Research (**CSIR**), Govt. of India (2019-2022). • Awarded **CAS-PIFI Postdoctoral fellowship** by **Chinese academy of sciences**, Beijing, China (2016-2018). • Recipient of "**Senior research fellowship**" from Council for Scientific and Industrial Research (**CSIR**), Govt. of India (2010-2013). • Recipient of "**Junior research fellowship**" from

	Council for Scientific and Industrial Research (**CSIR**), Govt. of India (2008-2010). • Recipient of **travel grant** from Department of Science and Technology (**DST, Govt. of India**) for attending "15th International Biotechnology Symposium (IBS) and Exhibition, 2012" at Daegu, Korea from September 16-21, 2012. • Qualified the Joint **CSIR-UGC** "Junior research fellowship (JRF) in Life Sciences, 2007. • Awarded **JRF** by Indian Council of Medical Research (**ICMR**), Govt. of India, 2007. • Qualified Graduate Aptitude Test for Engineering (**GATE-2007**) in Life science with **All India rank 6**. • **215** ranks in **Jawaharlal Nehru University** combined entrance test 2005 for M.Sc. Biotechnology. • **Guest Editor** of "**Frontiers in Microbiology**" • **Review Editor** of "**Frontiers in Microbiology**", "**Frontiers in Bioengineering and Biotechnology**" and "**Frontiers in Energy Research**" • Reviewer for "**Food and Bioproducts Processing**", "**Food Biosciences**", "**3 Biotech**", "**Biologia**" and "**Amylase**" journals.
MEMBERSHIP with Professional/ Academic bodies	• Lifetime member of "**Biotech Research Society of India, BRSI**". • Lifetime member of **"Asian Federation of Biotechnology, AFOB"**. • Lifetime member of **"Association of Microbiologists of India, AMI"**. • Lifetime member of **"Society of Biological Chemists, India, SBC (I)"**.