

Faculty Profile

Name : Kalpana B
Designation : Associate Professor
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1. Academic Qualifications:

Course	Name of the Institution / University	Year of Passing	% of Marks	Class
Ph.D (Biotechnology)	Indian Institute of Technology Madras, Chennai	2021	-	-
M.Tech (Nanoscience and Technology)	K.S.Rangasamy College of Technology	May 2010	8.35/10 (CGPA)	First
M.Phil Biotechnology	Periyar University, Salem	June 2010	75	First
M.Sc. Biotechnology	Alagappa University	May 2004	78.5	First (University 2 nd)
B.Sc Microbiology	Shrimathi Indira Gandhi College, Bharathidasan University	May 2002	80.01	First (University 6 th)
H.S.C.	Vellalar Matriculation Higher Secondary School, Erode	April 1999	79.75	First
S.S.L.C.	Rajammal Rangasamy Matriculation Higher Secondary School, Tirchengode, Namakkal	April 1997	83.54	First

Teaching Experience

- **Associate Professor & Head in-charge**, Department of Nanoscience and Technology, K S Rangasamy College of Technology from 11.01.2021.
- **Associate Professor**, Department of Biotechnology, K.S.Rangasamy College of Technology, Tiruchengode, from 01.06.2019 to 10.01.2021
- **Assistant Professor**, Department of Biotechnology, K.S.Rangasamy College of Technology, Tiruchengode, from 02.01.2010 to 31.05.2019.
- **Lecturer**, Department of Biotechnology, K.S.Rangasamy College of Technology, Tiruchengode, from 13.10.2004 to 1.1.2010

Projects

Post Graduate (M.Sc)

- **Title:** “Bioprospecting of novel protease gene from soil through metagenomics”

Post Graduate (M.Tech)

- **Title:** “Biosynthesis of Silver nanoparticles using *Bacillus sonorensis*.”

Ph. D

- **Thesis title:** “Analysis of Severe Early Childhood Caries Tooth Biofilm Microbiome and Quorum Quenching Efficacy of Plant Extracts against Carious Biofilm”

Publications

International Journals

1. Karthick, M., Surendhiran, S., Jagan, K.S.G. Balakrishnan Kalpana, et al. Synthesis and characterization of Araucaria columnaris leaf-mediated NiO nanoparticles for removal of pharmaceutical pollutants in municipal water bodies. Appl. Phys. A 129, 608 (2023). <https://doi.org/10.1007/s00339-023-06876-8>
2. Mariyappan Kowsalya, Thangavel Velmurugan, R. Mythili, Balakrishnan Kalpana, Mohan Prasanna Rajeshkumar et al. Extraction and characterization of exopolysaccharides from Lactiplantibacillus plantarum strain PRK7 and PRK 11, and evaluation of their antioxidant, emulsion, and antibiofilm activities, International Journal of Biological Macromolecules, Volume 242, Part 2, 2023, 124842, ISSN 0141-8130, <https://doi.org/10.1016/j.ijbiomac.2023.124842>.
3. K.S.G. Jagan, S. Surendhiran, S. Savitha, K.S. Balu, M. Karthick, B. Kalpana, et al. , Influence of different alkaline actuators in synthesis of NiO NPs: A comparative green approach on photocatalytic and in vitro biological activity, Inorganic Chemistry Communications, Volume 151, 2023, 110618, ISSN 1387-7003, <https://doi.org/10.1016/j.inoche.2023.110618>.
4. Savitha, S., Surendhiran, S., Jagan, K.S.G. Kalpana Balakrishnan et al. Evaluation of the physicochemical characteristics and photocatalytic activity of cobalt oxide nanoparticles derived from Moringa seed extract. J Mater Sci: Mater Electron 34, 89 (2023). <https://doi.org/10.1007/s10854-022-09506-w>
5. Kalpana, B., Prabhu, P., Bhat, A.H. et al. Bacterial diversity and functional analysis of severe early childhood caries and recurrence in India. Sci Rep 10, 21248 (2020). <https://doi.org/10.1038/s41598-020-78057-z>
6. Balakrishnan K, Sivanesan D, Mohan G, Gunthe SS, Verma RS. Importance of Interkingdom Interactions Among Oral Microbiome Towards Caries Development – A Review. J Immunological Sci. (2021); 5(2): 27-35

7. Bhat, A.H., Prabhu, P. & Balakrishnan, K. A critical analysis of state-of-the-art metagenomics OTU clustering algorithms. *J Biosci* 44, 148 (2019). <https://doi.org/10.1007/s12038-019-9964-5>
8. Puniethaa Prabhu, Arun P, Ashaq Hussain Bhat, Kalpana B, Comparative Analysis of Soil Microbiome Diversity using QIIME and CloVR pipelines, (2017) *CiiT International Journal of Biometrics and Bioinformatics*, Vol 9, No 1, 11- 19.
9. Anita, S. Sameshwari, T. Kalpana,B. Formulation and evaluation of instant soup powder using millets (2016), *International Journal of Current Research*,8,(08),35668-35673.
10. Anita Sundarajan, Gomathi Thangavel, Aravindh Mani, Kalpana Balakrishnan. Evaluation of nutraceutical properties of Jamun squash probioticated using kefir seeds (2016), *Pakistan Journal of Food Science*, 26(3),109-118.
11. Kalpana, B. and Narayana, S.G. Isolation of Novel Lipase Gene from Waste Engine Oil Contaminated Soil Metagenome (2013), *International Journal of Future Biotechnology* (2013), 2(2), 21-25.
12. Kalpana, B. and Narayana, S.G. Lipase Production from Waste Engine Oil using Microbial Strains, *International Journal of Bioprocess Technology* 2012, 1(1), 1-6.

International Conferences

1. 2022 Kalpana Balakrishnan, Sruthi N, Kalai Kalangiam K. V, Karthik Arumugam. Ponumurugan P, Sai Ram K.V. S. S, M.Anusha, Reddy M S, Efficacy of Nano 5G-P in onion production, 2022,7th Asisan PGPR International Conference for Sustainable Agriculture, 23rd-26th August 2022, Universitie Putra Malasiya, Malasiya.
2. 2018 Kalpana Balakrishnan, Puniethaa prabhu, Rama S Verma, Metagenomic Analysis of Changes in Active Bacterial Composition in Caries Lesions of Early Childhood Caries(ECC) and Recurrent ECC, 2018 NGBT Conference, 3rd-5th October 2018, Jaipur, India.
3. 2017 Kalpana Balakrishnan, Puniethaa prabhu, Rama S Verma, Metagenomic Profiling of Microbes associated with Severe Early Chidhood Caries of Tamilnadu Children - A Preliminary Report, ICBB, 2017, Bharathiyar University, Coimbatore, India.
4. 2016 Kalpana Balakrishnan, Puniethaa prabhu, S Natarajan, Krishna M Das, Metagenomic Analysis of Changes in Active Bacterial Composition in Caries Lesions of Early Childhood Caries(ECC) and Recurrent ECC, 2016 NGBT Conference, 3rd-5th October 2016, Cochin, India.
5. 2016 Arun.P, Puniethaa Prabhu, Kalpana B, Next Generation Sequence analysis of soil metagenome using QIIME Pipeline, National Conference on Advances in Science and Engineering Research, 18-19 March 2016, Arunai Engineering College, India.

6. 2011. Kalpana B Isolation Of Novel Microbial Protease From Soil Metagenome For Tanning Industry, National Workshop on Green Technologies, Department of Civil Engineering, K.S.Rangasamy College of Technology, 20th August 2011.
7. 2011. Kalpana B Fabrication of using silver nanoparticles, Bio-Blossom 2011, A National level Conference on implementation of Modern Biotechniques in Human Welfare, Department of Biotechnology, Pavendar Bharathidasan college of Engineering and Technology, 28th March, 2011.
8. 2010. Kalpana B Isolation of Novel Protease gene form soil metagenome through enrichment method, 2nd National Conference on Current Scenario in microbial Biotechnology, Department of Biotechnology, K.S.Rangasamy College of Technology, 10th and 11th March 2010.
9. 2010. Kalpana B Biosynthesis of Gold nanoparticles using *Bacillus sonorensis*, International conference on Nanomaterials and Nanotechnology (Nano 2010), Department of Nanoscience and Technology, K.S.Rangasamy College of Technology, 13th – 16th December 2010.

Best Presentations

Poster Presentations

1. 2012. Kalpana B and Arutselvi, R Biosynthesis of metal nanoparticles using leaf extract of *Curcuma longa*, National symposium on Heading towards molecular horizons in plant pathology: Host resistance, pathogen dynamics, diagnostics and Management, Indian phytopathological society (south zone) and Sugarcane Breeding Institute (ICAR) Coimbatore, 16th and 17th November 2012
2. 2011. Kalpana, B S.M.Brindha Shree, P.Suresh, , Arutselvi, R Biosynthesis of nanoparticles using leaf extract of *Curcuma longa*, 3rd Biopesticide International conference (BIOCICON 2011), crop Protection Research Centre, Department of Advance Zoology and Bitechnology, St.Xavier's college and Centre for plant protection studies, Tamil Nadu agricultural University, 28th - 30th November 2011.

Paper Presentation

1. 2012. Kalpana, B S.N,Gautham Harinarayanan, G.Saranya, S.Jalaja and S.Jamuna, Isolation of Novel Protease Gene Isolated from Soil through metagenomics, National conference on current Scenario in Biotechnology, Department of Biotechnology, K.S.Rangasamy College of Technology, 27th - 29th September 2012.
2. 2017 Kalpana Balakrishnan, Puniethaa prabhu, Rama S Verma, Metagenomic Profiling of Microbes associated with Severe Early Chidhood Caries of Tamilnadu Children - A Preliminary Report, ICBB, 2017, Bharathiyar University, Coimbatore, India.

Book Publication

1. 2011. Ponmurugan, P., Philip Robinson, J. and Kalpana, B. 2011. "Guides to Entrepreneurship in Biotechnology", Anuradha Publishing Company, Chennai, TamilNadu (ISBN: 978-81-907494-1-1).

EDP Program Attended:

- 1 Women Entrepreneurship Development Program organized by Kalasilingam Institute of Technology, Tamil Nadu from 27.07.2023 to 08.08.2023.
- 2 EDII sponsored Virtual Faculty Development Programme for "Entrepreneurship Trainer" organized by Entrepreneurship Development Institute of India, Ahmedabad, Gujarat from 14.06.2021 to 26.06.2021.
- 3 Undergone Innovation Ambassador training (Advanced Level) of MoE's Innovation Cell & AICTE from 16.08.2022 to 25.08.2022 in online mode.
- 4 Mentor of Change in "Atal Tinkering Labs" and guided 10+ students to participate in ATL Tinkerpreneur 2022 and 2023.

Fellowships & Awards

- 2022-23 Prathista Industries Ltd. Innovation Award in PGPR at the 7th Asian PGPR International Conference for Sustainable Agriculture on 23-26 August 2022.
- 2016-2017 SGRF Genome Grant Award winner by SGRF research Foundation, Chennai, for Metagenome sequencing of 40 samples to the tune of Rs. 3 Lakhs + Rs. 25,000
- 2014-2015 Tamilnadu Young Scientist Award, Tamilnadu State Council of Science and Technology

Patent:

- A carbon nanotube based electrodes & preparation method thereof
Reference No : 202141037460A Date: 24.09.2021 Status: Published

Sequences Deposited in NCBI

Bacterial Sequences deposited : 32

Comparative analysis of Severe Early Childhood Caries microbiome 16srDNA (V3 V4 amplicon)- Bioproject : PRJNA454811

Total samples- 31

Accession Number

SRR7647551 ,SRR7647550,SRR7647538 ,SRR7647537, SRR7647540,
SRR7647539,SRR7647542, SRR7647541, SRR7647544, SRR7647543,
SRR7647546, SRR7647545,SRR7647549 , SRR7647562,SRR7647563,
SRR7647564 ,SRR7647565 ,SRR7647558, SRR7647559 , SRR7647560,
SRR7647561 ,SRR7647566,SRR7647567 ,SRR7647548, SRR7647547,
SRR7647555,SRR7647554 ,SRR7647553 ,SRR7647552 ,SRR7647557
SRR7647556

Mycobiome of Severe Early Childhood caries and its recurrence 18srDNA (ITS1-ITS2 amplicon)- Bioproect : PRJNA607199

Total Seences: 28

Accession No:

SRR12186579, SRR12186580,SRR12186581, SRR12186582,SRR12186605,
SRR12186606,SRR12186583, SRR12186584,SRR12186585, SRR12186586
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SRR12186592,SRR12186593, SRR12186594,SRR12186595, SRR12186596
SRR12186597, SRR12186598,SRR12186599, SRR12186600,SRR12186601,
SRR12186602,SRR12186603, SRR12186604

Funds Received to Organize the Seminar

2013-2014 DBT, New Delhi sponsored Rs.75, 000 for conducting National Level “Technical Workshop on Forensic DNA Technology for Biotechnology Graduates”
2010–2011 CSIR, New Delhi sponsored Rs. 40,000 for conducting “Entrepreneurship Development Programme for Biotechnology Graduates”

Membership in Professional Bodies

- **Life Member**, Indian Society of Technical Education (ISTE)
- **Member (Life Member)** in Lichenology Society of India
- **Life Member** in Asian PGPR Society.