



**Dr. D.DHANASEKARAN**  
**Assistant Professor**

### Contact

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### Academic Qualifications: M.Sc. Ph.D.

### Teaching Experience: 12 Years

### Research Experience: 12 Years

### Additional Responsibilities

- DRC member, Department of Microbiology, Bharathidasan University, India
- UGC-BSR Fellowship Selection committee member (Subject Expert) in the Dept. of Botany, Annamalai University, Chidambaram
- DST Inspire Fellowship-Convenor- upgradation of JRF to SRF committee member Ms.S.Latha and Ms.G. Vinothini, Research Scholars, Dept. of Microbiology, Bharathidasan University

- UGC-RGNF Fellowship- upgradation of JRF to SRF committee member as Convener for P.Priya Dharsini and K. Nithya, Research Scholars, Dept. of Microbiology, Bharathidasan University
- University Graduation Day Committee Member, Bharathidasan University, Tiruchirappalli, India

### Areas of Research

- Actinobacteriology, mycology and phycology - Diversity, taxonomy and natural products derived actinobacteria, fungi, mushroom, microalgae for Plant, animal and human health improvement
- Genome wide approaches of actinobacteria, Biosynthetic gene cluster analysis
- Microbiome analysis using Next generation sequencing methods- Microbiome of actinorhizal plant root nodules, lichen, and Buffalo vagina by metagenomic approach
- Probiotics developments from actinobacteria

### Research Supervision / Guidance

Program of Study		Completed	Ongoing
Research	Ph.D.	10	02
	M.Phil.	20	-
Project	PG	36	05

### Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters / Monographs / Manuals
66	-	14	04	Books-06 Manuals-02 Chapters-20

<b>Cumulative Impact Factor (as per JCR) :</b>	<b>77.72</b>
<b>h-index :</b>	<b>18</b>
<b>i10 index :</b>	<b>40</b>
<b>Total Citations :</b>	<b>1158</b>

## Funded Research Projects

### Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	International Foundation for Science-IFS, Sweden	2007	2010	Characterization of Novel <i>Streptomyces</i> sp. as a potential bioactive substance producer from marine soil of east coastal region of Tamil Nadu	8000 USD
2	Dept. of Biotechnology (DBT) Govt. of India	2009	2012	Entrepreneurship programme of Oyster Mushroom cultivation technology for SC/ST population in and around Tiruchirappalli District	9.24
3	Indian Council for Medical Research (ICMR) Govt. of India	2012	2014	Evaluation of Larvicidal Effect of Actinobacterial Metabolites for Biological Control of <i>Culex</i> Mosquito	14.50
4	University Grants Commission (UGC), Govt. of India	2012	2015	Biosynthesis and antimicrobial applications of silver nanoparticles from marine actinobacteria against the multidrug resistant microbial pathogens	12.10

### Ongoing Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	Dept. of Biotechnology (DBT), Govt. of India	2017	2020	Culturable Actinomycetes Associated with Coastal Lichens: A Potential Source of Bioactive Compounds	42.64

## Patents

Filed patent on **Nanobased genomic DNA extraction from microorganisms using biogenic nano silver** (E2/1390/2016-CHE/201641015447)- P.M.Gopinath and D.Dhanasekaran

## Distinctive Achievements / Awards

1. Awarded UGC-Raman Post Doctoral Fellowship to visit USA- University of New Hampshire, Durham (2016-2017).
2. Qualified the **Tamil Nadu State Eligibility Test (SET)** for Lectureship held on 12<sup>th</sup> March 2006 in Life Science conducted by Bharathiyar University, Coimbatore

3. First class with distinction (with CWAM of 77.40) and secured Second Rank in M.Sc. Microbiology.

### Events organized in leading roles

Number of Seminars / Conferences / Workshops / Events organized: 3

**1.Organizing Chairman** in the National symposium on Prospects and Retraspects in Microbial technology jointly organized by Dept. of Microbiology, Biotechnology, Cauvery College for Women and Dept. of Microbiology, Bharathidasan University, Tiruchirappalli on Feb 17 and 18<sup>th</sup>, 2012

**2. Organizing Secretary** in the National Conference on New Opportunities and Challenges in Microbial Research, Dept. of Microbiology, Bharathidasan University, September 5-6<sup>th</sup>, 2013 (Sponsored by DBT, ICMR, DST-PURSE and UGC).

**3. Organizing Secretary** in Workshop on Edible Mushroom cultivation for Self employment of rural population held at Dept. of Microbiology, Bharathidasan University, during 22.02.2018 & 23.02.2018 (supported by DST-PURSE programme).

### Events Participated

#### Conferences / Seminars / Workshops: 67

Muthukumar, C., Muralitharan, G., **D.Dhanasekaran** and N.Thajuddin. 2009. Molecular characterization of Marine Cyanobacteria using 16Sr RNA gene sequence analysis. National symposium on Phycology India, held at Department of Botany, Punjabi University, Patiala 12&13<sup>rd</sup> February 2009

**Dhanasekaran D.** 2013. Actinobacteria: A key resource in Microbial technology, UGC sponsored National Level Seminar on 7and 8<sup>th</sup>, October 2013 on the topic Microbiology and Microbial Technology, Dept. of Botany, St. Terasa college, Ernakulam, Kerala

Gayathri, L., **D. Dhanasekaran**, M.A. Akbarsha. National Cytotoxic and Genotoxic effects of Ochratoxin A and Citrinin in HepG2 cell model, National Symposium on Mycological research- emerging trends, applications and prospects and 41<sup>st</sup> annual meeting of Mycological Society of India held at Dept. of Botany, Punjabi University, Patiala, 23,24, February, 2015

Gopinath, P. M., A. Ranjani and **D. Dhanasekaran.** 2016. Assessment of imaging facilitator potential of nano silver synthesized using actinobacterial cell free extract. International Conference on Transnational Medicine and Imaging, held at Rajiv Gandhi Centre for Biotechnology (RGCB) Thiruvananthapuram Kerala, March 4-5, 2016

**Dhanasekaran D** and M. Narayanasamy. 2017. Diversity of *Frankia* from the actinorhizal plant *Casuarina equisetifolia*, South India. Northeast Section Meeting of the American

Society of Plant Biologists (NEASPB) at Yale University, New Haven, Connecticut, USA, April 22-23<sup>rd</sup>, 2017.

**Dhanasekaran, D.**, Ennis, N., Narayanasamy, M and Louis S. Tisa. 2017. Metagenome analysis of the root nodule endophyte community of *Casuarina equisetifolia* from Tamil Nadu, India. 23<sup>rd</sup> annual Boston Bacterial Meeting BBM, held at Department of Microbiology and Immunobiology, Harvard University Medical School, Cambridge, Boston, Massachusetts, USA, June 15-16<sup>th</sup>, 2017.

**Dhanasekaran, D.**, Participated in ASM Microbe 2017 Conference - American Society of Microbiology held at Ernest N. Morial Convention Center, New Orleans, Louisiana (LA), USA, June 1-5, 2017

Srinivasan, M, **Dhanasekaran.D** and G. Archunan. 2018. A metagenomic approach to characterization of buffalo vaginal genetic diversity and abundance in buffalo during estrus cycle. 9<sup>th</sup> International Symbiosis Society Congress held at Oregon State University, Corvallis, Oregon, USA, July 15-20, 2018

**Dhanasekaran. D.** 2018. Co-occurrence of ochratoxin a and citrinin producing fungi and their respective mycotoxins in mold-contaminated food and feed commodities samples, International Symposium on "Fungal Biology: Advances, Applications and Conservation & 45<sup>th</sup> Annual Meet of Mycological Society of India (MSI) held at National Fungal Culture Collection of India, Agharkar Research Institute Pune 411004, India during 19.11.2018-21.11.2018

### **Other Training Programs**

Participated Seminar cum Workshop on A Primer on Intellectual Property held at IPR Cell, Bharathidasan University, Tiruchirappalli on 30.07.2018

Participated Refresher course in Life Science (Interdisciplinary) held at UGC - Human Resource Development Centre (HRDC), Bharathidasan University, Tiruchirappalli from 19.06.2018 to 09.07.2018

Participated orientation workshop in SWAYAM (MOOC Course) jointly organized by Department of Library and Information Science and UGC-Human Resource Development centre, Bharathidasan University on 03.05.2018.

Participated QIIME (Quantitative Insight into Microbial Ecology): Bioinformatic pipeline for Microbial ecology held at Hubbard Center for Genome Studies, University of New Hampshire, Durham, February 13-14<sup>th</sup>, 2017.

Participated Ethical and Responsible Conduct of Research Training held at College Teaching & of Education, University of New Hampshire, Durham, NH on February 17<sup>th</sup>, 2017

Participated Training on Cyanobacteria monitoring collaborative (Bloom watching, cyanoscope and cyanobacteria monitoring), organized by United States Environmental Protection Agency, Merry meeting River, Alton, New Hampshire, USA, June 23, 2017

Participated UNH Marine Innovation Day, hosted by University of New Hampshire Innovation at UNH Wildcat Stadium Victory club, Durham, New Hampshire, USA, July 27, 2017

Participated Refresher course in Life Science (Interdisciplinary) held at UGC Academic Staff College, Bharathidasan University, Tiruchirappalli from 18.07.2014 to 07.08.2014.

Participated Refresher course in Life Science (Interdisciplinary) held at UGC Academic Staff College, Bharathiyar University, Coimbatore from 08.03.2012-28.03.2012.

Participated training on Mosquito Collection, preservation, identification and larval bioassay technique, held at Vector Control Research Centre (VCRC), Pondicherry on August 27th-31, 2012.

Participated Orientation programme held at UGC Academic Staff College, Bharathidasan University, Khajamalai campus, Tiruchirappalli-23 from 27<sup>th</sup> January 2011-23<sup>rd</sup> Feb 2011

Faculty development programme on Bioprocess principles – BP1303, organized by Department of Biotechnology, Banariamman Institute of Technology, Sathyamangalam from 29<sup>th</sup> May – 10<sup>th</sup> June, 2006 Sponsored by Anna University, Chennai.

## **Overseas Exposure / Visits**

Awarded with Raman Post Doctoral Fellowship (UGC, Govt. Of India) for an year to carry out his research under the mentorship Prof. Louis S. Tisa, Department of Molecular, Cellular and Biomedical Sciences, University of New Hampshire, New Hampshire, Durham, USA on genome wide approaches of symbiotic actinobacteria and microbiome analysis by metagenomic methods.

## **Membership in**

### **Professional Bodies**

1. Life Member in National Academy of Biological Sciences (NABS)
2. Life member in Mycological Society of India
3. Member in American Society of Microbiology (ASM), USA
4. Member in North American Mycology Association (NAMA), USA
5. Member in International Society for symbiosis

### **Editorial Board**

1. Associate Editor in International Journal of Mosquito Research (ISSN Number: 2348-5906), Innovative Journal Solutions, 169, Pocket C-11, Sector-3, Rohini, New Delhi, India
2. Editorial advisory board member in Intech Opens publication, Croatia, Eastern Europe

## Academic Bodies

1. Board of study member in Microbiology, Auxillium College, Vellore, G.R.Dhamodharan College, Coimbatore, RVS College, Coimbatore, ANJA College, Sivakasi
2. External expert member in **Board of Studies in Part IV Self Employment course – Microbial Production Technology**, Ayya Nadar Janaki Ammal College, Sivakasi
3. Board of study Member in M.Sc., M.Phil Microbiology, Dept. of Microbiology, Bharathidasan University
4. Board of study Member in B.Sc., M.Sc., Microbiology, Bharathidasan University

## Resource persons in various capacities

Number of Invited / Special Lectures delivered: 30

## Others

1. Articles published in Newspapers / Magazines : 20
2. No. of PhD Thesis evaluated : 05
3. No. of PhD Public Viva Voce Examination conducted : 11
4. Sequences submitted in GenBank: 78

## Recent Publications

- 1) Srinivasan M., Dhanasekaran D., and G. Archunan. 2019. Vaginal microbiome analysis of buffalo (*Bubalus bubalis*) during estrous cycle using high-throughput amplicon sequence of 16S rRNA gene.Symbiosis. **DOI** : 10.1007/s13199-018-00595-y (**IF 1.71**)
- 2) Ranjani, A., Gopinath P.M., Ananth S., Narchonai G., Thajuddin N and **D. Dhanasekaran** (2018). Multidimensional dose-response toxicity exploration of silver nanoparticles from *Nocardiosis flavascens* RD30, Applied Nanoscience 8:699–713.doi.org/10.1007/s13204-018-0824-7. ISSN: 2190-5509 (Print) 2190-5517 (Online), (**IF 3.2**) .
- 3) Nithya K, Muthukumar C, Biswas Br, Alharbi N. S, Shine K, Khaled Jamal M and **D. Dhanasekaran**. 2018. Desert Actinobacteria as a source of bioactive compounds production with a special emphases on Pyridine-2,5-diacetamide a new pyridine alkaloid produced by *Streptomyces* sp.DA3-7. Microbiological Research, 207, 116-133. <https://doi.org/10.1016/j.micres.2017.11.012> (**IF 3.2**)
- 4) Vinothini G, Kavitha R, Latha S, Arulmozhi M and **D. Dhanasekaran**. 2018. Cell aggregating temperament and biopotency of cultivable indigenous actinobacterial community profile in chicken (*Gallusgallus domesticus*) gut system. Arabian Journal for Science and Engineering, <https://doi.org/10.1007/s13369-018-3083-8>. ISSN: 2193-567X (print version),ISSN: 2191-4281 (electronic version),( **IF 1.09**).
- 5) Gayathri L., Karthikeyan B.S. Rajalakshmic M., **Dhanasekaran, D**, Li, A.P., and M. A. Akbarsha. 2018. Metabolism-dependent cytotoxicity of citrinin and ochratoxin A alone and

in combination as assessed adopting integrated discrete multiple organ co-culture (IdMOC). *Toxicology in Vitro*. 46 166–177. DOI information: 10.1016/j.tiv.2017.09.022 (<https://doi.org/10.1016/j.tiv.2017.09.022>) (IF 2.8).

- 6) Latha, S., Sivaranjani, G. and **D. Dhanasekaran**. 2017. Response surface methodology: A non-conventional statistical tool to maximize the throughput of *Streptomyces* species biomass and their bioactive metabolites, *Critical Reviews in Microbiology*, 43(5): 567–582 (ID: 1271308 DOI:10.1080/1040841X.2016.1271308) (IF 8.13)
- 7) Nithya K, Muthukumar C, Shine K, Naiyf S.A, Jamal M. K, **Dhanasekaran D**, 2017. Purification, characterization, and statistical optimization of a thermostable  $\alpha$ - amylase from desert actinobacterium *Streptomyces fragilis* DA7-7. *3 Biotech*. 7(5):350. doi: 10.1007/s13205-017-0981-5 (IF 1.36).
- 8) Gopinath, P. M., Ranjani, A., **Dhanasekaran, D.**, Thajuddin, N., Archunan, G., Akbarsha, M. A., Gulyás, B., and Padmanabhan, P. (2016). Multi-functional nano silver: A novel disruptive and theranostic agent for pathogenic organisms in real-time. **Nature Scientific Report**. 6, 34058; DOI: 10.1038/srep34058. (IF: 5.228)
- 9) Gayathri.L, Dhivy.R, **Dhanasekaran.D**, Periasamy.V.S, Alshatwi. A. A. and M. A. Akbarsha. 2015. Hepatotoxic effect of ochratoxin A and citrinin, alone and in combination, and protective effect of vitamin E: In vitro study in HepG2 cell. *Food and Chemical Toxicology*, 83, 151-163 (IF 2.8).
- 10) Sanjay R, Gayathri L, **Dhanasekaran D**, Mohammad A. Akbarsha, G. Partha Sarathi. 2017. Model studies on the interactions of a Cu(II) - quinone complex with surfactant micelles and DNA explore its induction of apoptosis in human MDA-MB-231 breast adenocarcinoma cells. *Journal of Coordination Chemistry*. DOI:<http://dx.doi.org/10.1080/00958972.2017.1330466> (IF 1.75)
- 11) Narayanasamy M, **Dhanasekaran D**, Vinothini G and N. Thajuddin. 2018. Extraction and recovery of precious metals from electronic waste printed circuit boards by bioleaching acidophilic fungi. *International Journal of Environmental Science and Technology*, 15: 119-132. DOI: 10.1007/s13762-017-1372-5. (IF 2.344).
- 12) Muthuselvam R, Vinothini G, Palliyarai Thaiyammal S, Latha S, Arunachalam C, Alharbi S, **Dhanasekaran D**, Padmanabhan P, Archunan G. Cell aggregating propensity of probiotic Actinobacterial isolates: isolation and characterization of the aggregation inducing peptide pheromone. *Biofouling*. 2016; 32(1): 71-80. (IF 3.00)
- 13) Nisha J, Ramanathan K, Nawaz Khan F, **Dhanasekaran D**, and V. Shanthi. 2016. Discovery of a potential lead compound for treating leprosy with dapson resistance mutation in *M.leprae* folP1. *Molecular Biosystems*. 12, 2178-2188. DOI: 10.1039/c6mb00225k (IF: 3.210)
- 14) Latha S, Vinothini G, Calvin DJ, **Dhanasekaran D**. 2016. *In vitro* probiotic profile based selection of indigenous Actinobacterial probiont *Streptomyces* sp. JD9 for enhanced broiler production. *J Biosci Bioeng*. 121(1):124-131. (IF 1.98)
- 15) Gopinath, P.M., **Dhanasekaran, D**, Ranjani, A, Thajuddin, N, Akbarsha, M.A., M. Velmurugan and A. Pannerselvam. 2015. Optimization of sporicidal activity and environmental *Bacillus* endospores decontamination by biogenic silver nanoparticle. *Future Microbiology*, DOI :10.2217/FMB.14.150. (IF 4.2)



- 16) Amit D., Sanjay R., Palash M., Arup D., Kalachand M., Gayathri L., **Dhanasekaran D**, Partha Sarathi Sengupta, M.A. Akbarsha and Partha S. G. 2016. Studies on the interaction of 2-amino-3-hydroxy-anthraquinone with surfactant micelles reveal its nucleation in human MDA-MB-231 breast adenocarcinoma cells. **RSC Advanced**. 2016, 6, 28200-28212. **(IF 3.84)**.
- 17) Dey, D., Subrata Das, S., Ram Yadav, H., Ranjani, A., Gayathri, L., Roy, S., Sarathi Guin, P., **Dhanasekaran, D.**, Angshuman Roy Choudhury, A.R., Akbarsha, M.A., and B. Bhaskar. 2016. Design of a mononuclear copper(II)-phenanthroline complex: Catecholoxidation, DNA cleavage and antitumor properties. *Polyhedron*. 106: 106-114. **(IF 2.108)**
- 18) Dey, D. A. Basuroy, A. Ranjani, L. Gayathri, S. Chandraleka, **D. Dhanasekaran**, M.A. Akbarsha, Chung-yu shen H.L. Tsai, M. Maji, N. Kole, and B. Bhaskar. 2015. Synthesis and bio-catalytic activity of isostructural cobalt(III)-phenanthroline complexes. *J. Chem. Sci.* 127,(4) 649–661. **(IF-1.19)**.
- 19) Latha, S. Vinothini, G and **D. Dhanasekaran**. 2015. Chromium [Cr(VI)] biosorption property of the newly isolated actinobacterial probiont *Streptomyces werraensis* LD22, 3 *Biotech*, 5(4) 423-432. **(IF 1.361)**
- 20) Dey, D., S. Pal, Partha Mitra, **D. Dhanasekaran**, A. Ranjani, L. Gayathri, M. A. Akbarsha and N. Kole. Bhaskar, B. 2014. A novel trinuclear zinc-Schiff base complex: Bio-catalytic activity and cytotoxicity. *European Journal of Inorganic Chemistry*. (21), 3350-3358 **(IF=3.12)**
- 21) Subhasish, S., **Dhanasekaran, D.** Shanmugapriya S and S. Latha, 2013. *Nocardiosis* sp. SD5: A potent feather degrading rare actinobacterium isolated from feather waste in Tamil Nadu, India. *Journal of Basic Microbiology*, 53, 608–616. **(IF 1.585)**
- 22) Subhasish, S., Priyadarshini, A. **Dhanasekaran, D.** Thajuddin, N. Chandraleka, S. Chandramohan, G and A. Panneerselvam. 2012. Preclinical evaluation and molecular docking of 4-phenyl-1-Naphthylphenylacetamide (4P1NPA) from *Streptomyces* sp. DPTB16 as a potent antifungal compound. *Computers in Biology and Medicine*. 42(5):542-7 **(IF 1.28)**

#### Number of Books published (Edited books): 06

1. **Dhanasekaran. D.**, Thajuddin, N. and Panneerselvam, A. (Eds.), 2015. *Antimicrobials: Synthetic and Natural Compounds*, CRC press, Taylor & Francis Group, Boca Raton, FL, USA, 524 pages, ISBN No: 9781498715621, New York
2. **Dhanasekaran. D.**, Thajuddin, N. and Panneerselvam, A. (Eds.), 2012. *Fungicides for Plant and Animal Diseases*. In Tech Open Access publisher. 308 pages, US 150, ISBN: 978-953-307-670-6. Croatia, Eastern Europe
3. **Dhanasekaran. D** and Yi Jiang. 2016. *Actinobacteria: Basics and Biotechnological applications*. In Tech Open Access publisher, ISBN 978-953-51-2248-7, 398 pages, US \$180, Croatia, Eastern Europe (Feb. 2016)
4. Thajuddin. N and **D. Dhanasekaran**. 2016. *Algae-Organisms for Imminent Biotechnology*, In Tech Open Access, ISBN 978-953-51-2432-0, Print ISBN 978-953-

51-2431-3, 340 pages, US \$180, DOI: 10.5772/61365, Croatia, Eastern Europe(June 29, 2016)

5. **Dhanasekaran.D** and Thajuddin.N. 2016. Microbial Biofilms- Importance and Applications, InTech Open Access, ISBN 978-953-51-2435-1, 522 pages, US \$220, Croatia, Eastern Europe (July 13, 2016)
6. Tyagi, BK and **D. Dhanasekaran. D.** (Eds.), 2018. Microbial control of Vector borne Diseases, CRC press, Tailor & Francis Group, Boca Raton, FL, New York, USA, ISBN number 978-1-138-05581-0. 463 pages

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