

## Welcome to the Research Group of Dr. K Madhavan Nampoothiri @ CSIR-NIIST



Our team focuses on the development of an integrating system of metabolic engineering and bioprocess development for various microbial products of industrial importance, exploration of microbial genomics for health and nutraceutical purpose.

### Dr.K.Madhavan Nampoothiri, PhD, FBRS

Senior Principal Scientist & Head  
Microbial Processes and Technology Division  
Professor in Biological Sciences, (ACSIR),  
CSIR- National Institute for Interdisciplinary  
Science & Technology (NIIST)  
Industrial Estate Post  
Thiruvananthapuram - 695 019, Kerala, India  
Telephone : +91 471 - 2515366(O), +91 471-  
2491696 (R), +91 9447890498 (Mobile)

Email: [madhavan@niist.res.in](mailto:madhavan@niist.res.in), [madhavan85@hotmail.com](mailto:madhavan85@hotmail.com)

Google scholar:

<https://scholar.google.co.in/citations?user=cQ09vN8AAAAJ&hl=en> (cQ09vN8AAAAJ)

ORCID 0000-0003-4151-0974

Web of Science Researcher ID - [J-4727-2017](https://orcid.org/0000-0003-4151-0974)

- o Fellow, Biotech Research Society , 2016
- o Young Scientist Award BRSI, 2003
- o Alexander Von Humboldt Fellow, Germany 1998-2000
- o Wellcome Trust Fellow, UK 2001

### Education:

**PhD:** Cochin University of Science & Technology, Cochin, Microbial Biotechnology

### Post-Doctoral

Biochemistry Department, Indian Institute of Science (IISc), Bangalore  
Alexander von Humboldt fellow – FZ, Juelich , Germany  
Wellcome trust Post-Doctoral fellow, University of Newcastle upon Tyne, England

### Professional Experience:

- Scientist C: CSIR –National Institute for Interdisciplinary Science and Technology (RRL) -2001-2005
- Scientist E1: CSIR –National Institute for Interdisciplinary Science and Technology - 2005-2009
- Principal Scientist: CSIR –National Institute for Interdisciplinary Science and Technology - 2009-2014
- Senior Principal Scientist: CSIR-National Institute for Interdisciplinary Science and Technology - 2014 – till date

### Broad Areas of interest:

- Microbial enzymes for industrial applications
- Genetically engineered microbial strains for the development of bioprocess for value added products - emphasis to *Corynebacterium gluamicum*, Lactic acid bacteria etc.
- Nutraceuticals and bioactive molecules from lactic acid bacteria  
Development of starter /probiotic cultures
- Genomics and infectious diseases (Mycobacterium)
- Biopolymer nanoparticles and Microbial degradation of plastics

### AcSIR Course teaching:

- Fundamentals of Molecular Biology
- Basics of Industrial Biotechnology

### Open Position for Ph.D Program:

Interested students can apply through AcSIR Ph.D Program

### Present/Past group members:

Number of PhD Awarded - 15  
Number of Ongoing PhD - 07



## N. RAMESH KUMAR M.Sc, Ph.D

Principal Scientist, Microbial Processes and Technology Division  
CSIR-National Institute for Interdisciplinary Science and Technology  
Industrial Estate PO, Trivandrum 695019. INDIA

Phone: +91-471-2515325 (O)

Email: rameshkumar@niist.res.in

### Education

M.Sc : University of Madras, Chennai, India

Ph.D : M.S. Swaminathan Research Foundation, University of Madras, Chennai, India

### Awards /Honours

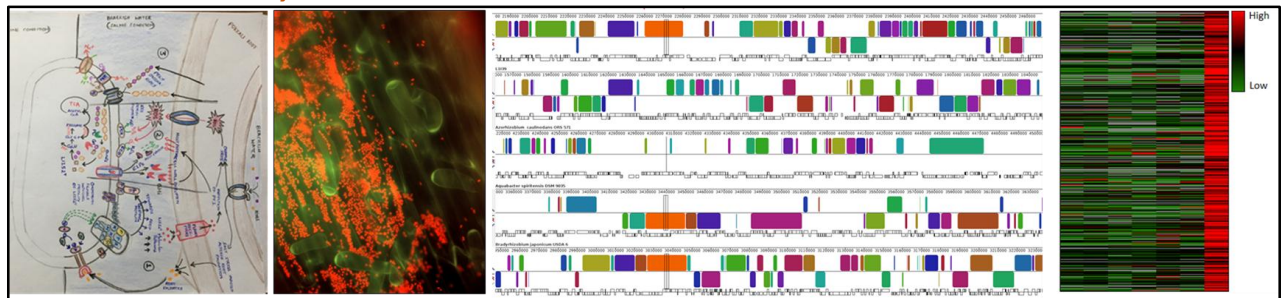
Max Planck-DST Mobility Grant (2014-2018)

### Technical Expertise

Molecular microbiology and molecular bacteria taxonomy

### Research

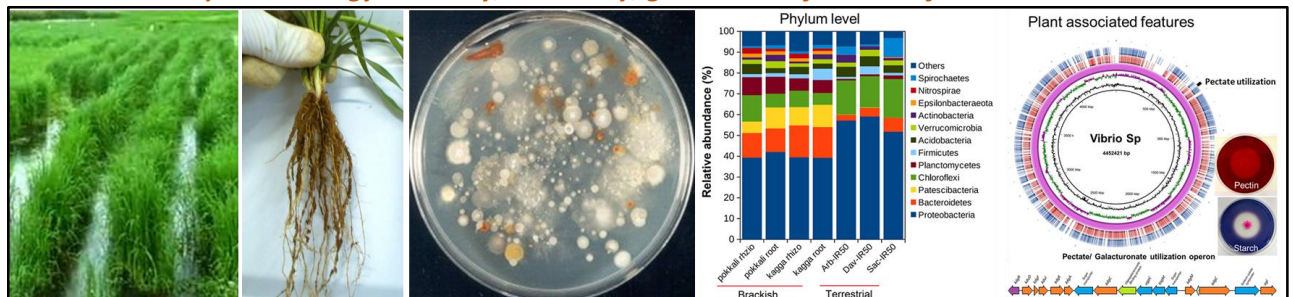
**Molecular plant-beneficial bacteria interactions under brackish conditions: Pokkaliibacter plantistimulans- Pokkali rice as model system.**



### Key Publication:

- Krishnan R, Lang E, Midha S, Patil PB, Rameshkumar N\* (2018). Isolation and characterization of a novel 1-aminocyclopropane-1-carboxylate (ACC) deaminase producing plant growth promoting marine Gammaproteobacteria from crops grown in brackish environments. Proposal for *Pokkaliibacter plantistimulans* gen. nov., sp. nov., *Balneartrichaceae* fam. nov. in the order *Oceanospirillales* and an emended description of the genus *Balneartrix*. *Systematic and Applied Microbiology*. Nov; 41(6): 570-580.

**Molecular rhizosphere ecology: diversity, taxonomy, genome and function of root-associated bacteria**



### Key Publications:

- Menon RR, Kumari S, Tomeu Viver, Rameshkumar, N. (2020). *Flavobacterium pokkali* sp. nov., a novel plant growth promoting native rhizobacteria isolated from pokkali rice grown in coastal saline affected agricultural regions of southern India, Kerala. *Microbiological research*, 240, 126533, 2020
- Menon RR, Kumari S, Kumar P, Verma A, Krishnamurthi S, Rameshkumar N. (2019). *Sphingomonas pokkali* sp. nov., a novel plant associated rhizobacterium isolated from a saline tolerant pokkali rice and Its draft genome analysis. *Systematic and Applied Microbiology* May; 42(3): 334-342.
- Weinhold A, Karimi Dorcheh E, Li R, Rameshkumar N, Baldwin IT (2018). Antimicrobial peptide expression in a wild tobacco plant reveals the limits of host-microbe-manipulations in the field. *Elife*. Apr 17; 7:e28715. doi: 10.7554/eLife.28715.

### Team members

**PhD Students:** Mr. Rahul R Menon, Mrs. Sunitha Kumari, Mrs. Gayathri GS, Mrs. Kriti K and Mr. Sanoj Mohan

**Project Associate:** Mrs. Ruchitha R, Ms. Amuratha and Mr. Aghil

If you are curious, self-motivated, broad-thinking and interested to work in the area of Plant-Microbe-Environmental Interactions are welcome to contact me : [rameshkumar@niist.res.in](mailto:rameshkumar@niist.res.in) with your detailed CV and an outline of your research interest in the above mentioned area.



## Welcome to the Research Group of Dr. Binod Parameswaran @ CSIR-NIIST



### Research Statement:

The main interest of research is on Industrial Biotechnology where major focus is on development of processes and products through microbial biotechnology. Current R&D involves the sustainable production of biofuels, biopolymers and bio-based chemicals such as diols, furan derivatives and organic acids.

### Dr. Binod Parameswaran

Principal Scientist and Associate Professor, AcSIR,  
Microbial Processes and Technology division  
CSIR-National Institute for Interdisciplinary Science  
and Technology (CSIR-NIIST) Industrial Estate P. O.,  
Thiruvananthapuram 695019, Kerala, INDIA  
Email: [binodkannur@niist.res.in](mailto:binodkannur@niist.res.in);  
[binodkannur@gmail.com](mailto:binodkannur@gmail.com)  
Ph: 91-471-2515361 (Off.), 9447014980

### Education:

Ph D – Biotechnology, University of Kerala, Thiruvananthapuram (2008)  
M Sc.- Botany, Kannur University, Kannur (2000)

### Professional Experience:

Post-Doctoral Fellow – Korea Institute of Energy Research, Republic of Korea  
Scientist – CSIR-NIIST (2011-2015)  
Senior Scientist – CSIR-NIIST (2015-2019)  
Principal Scientist (CSIR-NIIST (2019- Till date)

**Broad Areas of interest:** Microbial bioprocess technology

### AcSIR Course teaching:

[AcSIR-01-CS-AD-004: Biodegradable polymers]

### Open Position for Ph.D Program:

Interested students can apply through AcSIR Ph.D Program

### Present/Past group members:

#### Former Ph D fellows

Dr Anju Alphonsa Jose

Dr Vivek Narisetty

Dr Hazeena S H

#### Present Ph D Fellows

Mr Godan T K

Mr Rajesh R O

Ms Lakshmi M Nair

Ms Alphy Maria Paul

Ms Reena Rooban

### Achievements/Awards:

- 2021 Listed in the world's top 2% scientist for the whole career as per the study by Stanford University and Elsevier BV
- 2020 Listed in the world's top 2% scientist for the year 2019 as per the study by Stanford University
- 2019 Pandey Research Excellence Award of International Bioprocessing Association (IBA-FIBiop), France
- 2018 Fellow of International Society for Energy, Environment and Sustainability
- 2018 Prof S B Chincholkar Memorial Award of the Biotech Research Society, India
- 2018 Best Paper Award, BIORESTEC 2018, Sitges, Spain
- 2018 Elsevier Impactful Research Award, Bioresource Technology
- 2016 Visiting Fellowship, EPFL, Switzerland (October 2016)
- 2014 Elsevier Renewable Energy Best Paper Award
- 2014 Kerala State Young Scientist Award - 2014
- 2014 Visiting Fellowship, EPFL, Switzerland (Sept – Nov 2014)
- 2013 Marie Curie Fellow (Fellowship to visit University of Naples, Italy, Oct 2013)
- 2011 Young Scientist Award, International Forum on Industrial Bioprocesses (IFIBiop), France
- 2008 Post-doctoral Fellowship, Korea Institute of Energy Research, South Korea
- 2004 Visiting Research Fellowship, Technical University of Budapest, Hungary
- 2004 Visiting Research Fellowship, University of Debrecen, Hungary
- 2004 Senior Research Fellowship, CSIR, India
- 2002 Junior Research Fellowship, CSIR, India



Welcome to the Research Group of Dr. Balakumaran P.A. @ CSIR-NIIST



**Scientist and Assistant Professor, AcSIR**

Microbial Processes and Technology division, CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST), Industrial Estate P. O. Thiruvananthapuram 695019, Kerala, INDIA

**Email:**

[balakumaranpa@niist.res.in](mailto:balakumaranpa@niist.res.in);

[genbalu86@gmail.com](mailto:genbalu86@gmail.com)

**Ph: Off:** +91-471-2535587,

**Mobile:** 98400 51941

**CSIR-NIIST Profile link:**

<https://www.niist.res.in/english/scientists/p-a-balakumaran-professional-experience.html>

**Google scholar link:**

<https://scholar.google.co.in/citations?user=sfa8UMUAAA&hl=en>

Our research focus is in the area of recombinant protein production, metabolic engineering to produce high value compounds, Genome editing and process development for industrially important enzymes and chemicals.

**Education:**

2011 – 2017: PhD in Biotechnology, Centre for Biotechnology, Anna University, Chennai, India  
2007-2011: M.S.(By Research) in Biotechnology, Centre for Biotechnology, Anna University, Chennai, India  
2003 – 2007: B.Tech in Industrial Biotechnology, Anna University, Chennai, India.

**Professional Experience:**

2020 – present: Scientist, CSIR-NIIST, Thiruvananthapuram  
2017 – 2019: Manager and Scientist R&D: Proklean Technologies Pvt Ltd., Chennai.  
2018-2019: Faculty, Academy of competitive examinations and Research Training, Chennai  
2018-2019: Subject Matter Expert, Six Red Marbles Inc., Chennai.  
2013-2014: DAAD scholar, RWTH Aachen University, Germany

**AcSIR Course teaching:**

AcSIR-39-ID-002: Biology for chemists  
AcSIR-39-BS-AD-004: Molecular Biology of Industrial organisms  
AcSIR-39-BS-AD-002: Bioprocesses Fermentation and Environmental Biotechnology  
AcSIR-39-ID-003: Bioprospecting for natural resources

**Recognitions:**

- SERB International Research Experience (SIRE) Fellowship, SERB, Govt. of India (2022-2023)
- DAAD fellowship, Germany (2013-2014)
- Senior Research Fellowship, CSIR, Govt. of India (2012-2016)
- Junior Scholarship, Lady Tata Memorial Trust, Mumbai, India (2011-2012)
- Student of the Department award for excellence in B.Tech programme (2003-2004)

**Association with professional organizations:**

- Member, European federation of Biotechnology
- Member, International Metabolic engineering society
- Life Member, Society for Biological engineering
- Life Member, Association of Microbiologists of India
- Life Member, Biotech Research Society of India

**Group members:**

Ms. Shalu Saseendran (Project Intern)

**Open Position for Ph.D Program:**

Interested students can apply through AcSIR Ph.D Program



Welcome to the Research Group of  
Dr. Knawang Chhunji Sherpa @ CSIR-NIIST



**Dr. Knawang Chhunji Sherpa**

Scientist and Asst. Professor,  
AcSIR

Microbial Processes and  
Technology Division

CSIR-National Institute for  
Interdisciplinary Science and  
Technology (CSIR-NIIST)  
Industrial Estate P. O.  
Thiruvananthapuram 695019,  
Kerala, INDIA

Email: [kcsherpa@niist.res.in](mailto:kcsherpa@niist.res.in);  
[knawang@gmail.com](mailto:knawang@gmail.com)

Contact no.: 91-471-2515279  
(Off.)

**Google scholar:**  
[https://scholar.google.com/citations?hl=en&user=f\\_xGongAAA\\_AJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.com/citations?hl=en&user=f_xGongAAA_AJ&view_op=list_works&sortby=pubdate)

**ORCID iD:**  
<https://orcid.org/0000-0002-6716-9578>

**Education:**

- Ph.D (2019) Advanced Technology Development Centre, Indian Institute of Technology (IIT) Kharagpur, West Bengal
- M.Sc (2011) Applied Microbiology, Vellore Institute of Technology, Tamil Nadu
- B.Sc (2009) St. Joseph's College, Bangalore University, Karnataka

**Professional Experience:**

- Scientist CSIR – National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, Kerala (August 2021 – Present)
- Research Associate, Hindustan Petroleum Green R & D Centre, Bengaluru, Karnataka (March 2019-March 2020)

**Broad Areas of interest:**

- 2G biofuels
- Fermentation
- Valorization for value added products
- Microbiology

**Fellowship**

Ministry of New and Renewable Energy (MNRE) sponsored  
“Renewable energy fellowship (REF)”

**Open Position for Ph.D Program:**

Interested students can apply through AcSIR Ph.D Program



Our Lab works in the broad areas of Membrane biophysics and Synthetic Biology. An engrossing goal of our lab is engineering 'Synthetic cells' from bottom-up for Biotechnological applications.

### Dr. Harsha Bajaj

Scientist and Ass. Professor, AcSIR

Microbial Processes and Technology division

CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST) Industrial Estate P. O. Thiruvananthapuram 695019, Kerala, INDIA

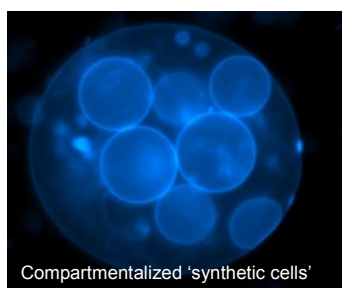
Email: [harshabajaj@niist.res.in](mailto:harshabajaj@niist.res.in); [209harsha@gmail.com](mailto:209harsha@gmail.com)

Ph: 91-471-2515433 (Off.), 8301947762

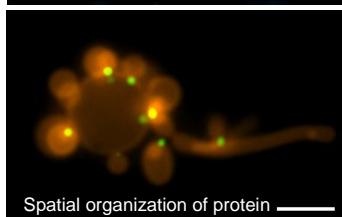
### Links

<https://www.harshabajajlab.com/>

<https://scholar.google.de/citations?user=Mf4RFwIAAAA&hl=en>



Compartmentalized 'synthetic cells'



Spatial organization of protein

### Education

- **Doctor of Philosophy in area of Molecular Biophysics (2015)**  
Jacobs University Bremen, Germany, based on the European Innovative Medicines Initiative (IMI) "Translocation" project. Thesis on "Antibiotic permeation through membrane proteins"
- **Master of Science in Molecular Life science, (2013)**  
Jacobs University Bremen, Germany
- **Bachelor of Technology in Biotechnology, (2011)**  
National Institute of Technology, Warangal, India

### Professional Experience:

- **Scientist (Aug. 2021 – till date)**  
CSIR- National Institute for Interdisciplinary Science and Technology, Trivandrum
- **Fellow Scientist (2018 - 2021)**  
CSIR- National Institute for Interdisciplinary Science and Technology, Trivandrum
- **Post-Doctoral Research Associate (2015 –2017)**  
Jacobs University Bremen, Germany, collaboration with University of Cambridge, UK

### Awards and Recognition:

- **DST-Inspire Faculty award 2020**
- **DBT HGB- Innovative Young Biotechnology Award 2018**

### Broad Areas of interest

- **Membrane Biophysics-** Transport of molecules across membranes and membrane proteins, activity of Antimicrobial properties
- **Synthetic Biology-** Bottom-up biology, Engineering 'Synthetic cells' for Biotechnology applications

### AcSIR Course teaching:

- AcSIR-39-BS-AD-004: Molecular Biology of Industrial Organisms

### Open Position for Ph.D Program:

Interested students can apply through AcSIR Ph.D Program and contact the PI at [harshabajaj@niist.res.in](mailto:harshabajaj@niist.res.in)



## Welcome to the Research Group of Dr. Rajeev K Sukumaran @ CSIR-NIIST



### Dr. Rajeev K Sukumaran

Senior Principal Scientist and  
Professor, AcSIR  
Microbial Processes and Technology  
Division  
CSIR-National Institute for  
Interdisciplinary Science and  
Technology (CSIR-NIIST)  
Industrial Estate P.O., Pappanamcode  
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[rajeev.csir@gmail.com](mailto:rajeev.csir@gmail.com)  
Tele: +91 471 2515368 (Off),  
+91 9446482557 (M)

#### Links

<https://www.niist.res.in/english/scientists/rajeev-kumar-sukumaran-/personal.html>

<https://scholar.google.co.in/citations?hl=en&user=aEoEMO8AAAAJ>

### Research Statement

Biomass conversion to fuels and chemicals is important for sustainable development and the reduce the global carbon foot print. Major challenges in realizing this is the lack of efficient and commercially viable technologies for plant biomass conversion.

We work on end to end technologies/strategies for efficient biomass conversion and the facilitating technologies to make them commercially viable. One of the major activities being undertaken is the development of biomass hydrolyzing enzyme cocktails. We are trying to understand the regulation of biomass hydrolyzing enzymes in filamentous fungi, so that we can tune these regulatory networks to produce enzymes at high titres overcoming natural controls.

### Education

M. Sc (Biotechnology),  
Cochin University of Science and Technology, Kochi – India, 1995  
Ph. D (Biotechnology)  
Cochin University of Science and Technology, Kochi – India, 2001

### Professional Experience

Member Technical -Bigtec Pvt Ltd, Bangalore & Consultant to Vittal Mallya Scientific Research Foundation (UB Group R&D): 2001

Post-Doctoral Fellow – Mount Sinai School of Medicine, New York, USA (Molecular immunology of Type I Diabetes- Teodor Brumeanu Lab: 2002-2003

Embryonic Stem Cell International Post-Doctoral Fellow- National University Hospital, NUS Singapore (Molecular reasons for embryonic stem cell pluripotency – Ariff Bongso Lab: 2003-2004

2004-2007: Scientist B, Regional Research Laboratory, CSIR, Trivandrum (Currently- CSIR-NIIST)

2007-2010: Scientist C, CSIR-NIIST, Trivandrum

2010-2014: Senior Scientist, CSIR-NIIST, Trivandrum

2014-2018: Principal Scientist, CSIR-NIIST, Trivandrum

2018- Current : Senior Principal Scientist, CSIR-NIIST, Trivandrum

### Broad Areas of Interest

Lignocellulosic ethanol, Sustainable Development through Biomass Economy, Fungal Cellulases and molecular biology of cellulase regulation

## **AcSIR Course Teaching**

[Course code: Name]

AcSIR-39-BS-RM-003-Research Methodology, BIO-NIIST-1-3903-Computer Applications and Informatics (Bioinformatics)

AcSIR-39-BS-AD-002- Advanced Course, BIO-NIIST-3-3901 – Bioprocesses Fermentation and Environmental Biotechnology

AcSIR-39-BS-AD-004-Advanced Course, BIO-NIIST-3-3903- Molecular Biology of Industrial Microorganisms.

## **Open Position for Ph.D Program:**

Ph.D programs are in general oriented towards addressing biomass conversion and bioenergy and facilitating technologies/strategies. We are also looking at the gene regulation of biomass hydrolyzing enzymes in cellulase producing fungi, through genomic, transcriptomic and proteomic approaches.

Students interested to work in these areas may apply through AcSIR Ph.D Program

## **Present/Past group members**

### **Present**

**Meena Sankar:** Development of biomass hydrolyzing enzyme cocktails

**AthiraRaj SR:** Mechanism of production and regulation of cellulases in *Penicillium janthinellum*

**Meera Christopher:** Molecular reasons for the hyper cellulolytic potential of *Penicillium janthinellum* cellulase

**Reshma M Mathew:** Enzymatic synthesis of Ascorbic acid 2 glucoside

**Anoop Puthiyamadam:** Cost efficient cellulase cocktails through improved process conditions and blending

**Adarsh VP:** Ethanol production through consolidated bioprocessing employing filamentous fungus

**Athulya A:** Microbial degradation of organophosphate pesticides

**Valan Rebinro:** Antimicrobial Resistance development in non-clinical setup through exposure to organo-phosphorous pesticides

### **Past**

**Dr. Prajeesh KV** (Former PhD Student, Year of Award 2021)

Thesis: Glucose tolerant beta-glucosidase of *Aspergillus unguis*: In-silico characterization, cloning, expression and genome/transcriptome profiling to understand its regulation

Current Position: Post-Doctoral Fellow, University of Leiden, Amsterdam, The Netherlands

**Dr. Aswathi A** (Former PhD Student, Year of Award 2021)

Thesis: Bacterial xenobiotic response - insights into the efficacy and molecular mechanisms of organophosphate evasion and degradation

Current Position: Guest Faculty, School of Forensic Sciences, Cochin University of Science and Technology, India



**Dr. Aravind Madhavan** (Former PhD Student, Year of Award 2016)  
Thesis: Development of an expression system for heterologous protein expression in fungus  
Current Position: ICMR-DHR Young Scientist, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram India

**Dr. Vani Sankar** (Former PhD Student, Year of Award 2015)  
Thesis: Strategies for improved enzymatic hydrolysis of lignocellulose  
Current Position: Biotechnology Lead and Laboratory Manager, Genecis Bioindustries Inc., Toronto, Canada

**Dr. Sabeela Beevi U** (Former PhD Student, Year of Award 2015)  
Thesis: Microalgal biomass and oil production in non-potable waters for potential application in biofuels and nutraceuticals  
Current Position: Scientist, DBT-Institute of Bioresources and Sustainable Development (IBSD), Takyelpat, Imphal Manipur-795001

**Dr. Deepthy Alex** (Former PhD Student, Year of Award 2015)  
Thesis: Novel esterases from microbes through classical and metagenomics approach: Studies on the enzymes and their applications  
Current Position: Asst. Professor & Head, Dept. of Biotechnology, Mar. Ivanios College, Thiruvananthapuram, India

**Dr. Lalitha Devi Gottumukkala** (Former PhD Student, Year of Award 2014)  
Thesis: Biobutanol from lignocellulosic biomass by a novel *Clostridium sporogenes* BE01  
Current Position: Chief Innovation Officer, Celignis Limited, Limerick, Republic of Ireland

**Dr. Rajasree KP** (Former PhD Student, Year of Award 2014)  
Thesis:  $\beta$ -glucosidases from *Aspergillus unguis* NII 08123: Molecular characterization, properties and applications  
Current Position: Rajasree K P, Dr. D S Kothari Postdoctoral Fellow, Dept of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India

**Dr. Abraham Mathew** (Former PhD Student, Year of Award 2011)  
Thesis: Studies on glucose tolerant  $\beta$ -glucosidases from *Byssoclamys fulva* and their application in biomass - to - ethanol conversion  
Current Position: Assistant Professor, P.G. and Research Department of Botany, St. Peter's College, Kolencherry, Ernakulam, India

**Dr. Reeta Rani Singhania** (Former PhD Student, Year of Award 2011)  
Thesis: Beta Glucosidase from *Aspergillus niger* NII 08121- Molecular characterization and applications in bioethanol production  
Current Position: Research Associate Professor, Department of Marine Environmental Engineering, National Kaohsiung University of Science and Technology, Kaohsiung City, Taiwan

#### **Achievements/Awards**

- Technical Lead for setting up India's first fully integrated Bioethanol pilot plant at CSIR-NIIST
- Lead Scientist to conduct India's first nationwide survey of surplus biomass residues for biofuel application (Published by TIFAC, 2009)
- Coordinator for CSIR's multi-lab program on Bioethanol involving 9 CSIR labs
- Member, Kerala Biotechnology Commission
- SB Chincholkar Memorial Award for outstanding contributions in the area of Microbial and Enzyme Technology from Biotech Research Society, India (BRSI) (2015)
- Listed in the Stanford University Top 2% scientists List 2020 and 2021.



## Welcome to the Research Group of Dr. Muthu Arumugam



**Research Statement:** Basic Biology and Bioprospecting of freshwater and marine microalgae for commercially important compounds like Omega-3 – fatty acids (DHA and EPA) and Selenoproteins (patent filed in India, PCT and US). Essentially to gain a commercial value to the few compounds of pharma, nutraceutical and specific therapeutic applications.

- Stress mediated lipid accumulation and Lipid enhancement strategy in microalga
- Omega-3 fatty acids – production and applications
- Selenoproteins: Basic biology and its therapeutic applications
- Scale-up studies in a closed Photobioreactor and open raceway ponds

### Dr. Muthu Arumugam., PhD (IISc)

Principal Scientist and Associate Professor, AcSIR

Microbial Processes and Technology Division

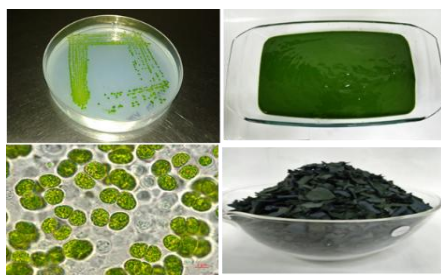
CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST) Industrial Estate P. O. Thiruvananthapuram 695019, Kerala, INDIA

Email: [arumugam@niist.res.in](mailto:arumugam@niist.res.in); [aasaimugam@gmail.com](mailto:aasaimugam@gmail.com)

Ph: 91-471-2515424 (Off.), 9562026677

### Links

<https://www.niist.res.in/english/scientists/muthu-arumugam/educational-qualification.html>



Microalga culturing and scale-up for commercially important products

### Education:

Ph.D. in Microbiology and Cell Biology, **Indian Institute of Science (IISc)**, Bangalore  
M.Sc (Ag.) in Genetics and Plant Breeding, University of Agricultural Sciences (UAS), GKVK Campus, Bangalore.  
BSc (Ag.) from Tamil Nadu Agricultural University (TNAU), Coimbatore.

### Professional Experience:

2003- 2009: Obtained research training programme at IISc, Bangalore

2009-2012: Scientist- B at DRDO-DIBER, Haldwani

2012-2016: Scientist at CSIR-NIIST, Trivandrum

2016-2020: Senior Scientist at CSIR-NIIST, Trivandrum

2020- present: Principal Scientist at CSIR-NIIST, Trivandrum

### Broad Areas of interest: Algal Biotechnology

### Patent filed:

“Organic selenium enriched edible marine microalgal biomass for food, feed supplements and bioprocessing for the preparation thereof” (i) *Indian patent filed 202011028987 on 08-07-2020 at CSIR-IPU, New Delhi.* (ii) *PCT Application No.: PCT/IN2021/050483 dated 19-05-2021.* (iii) *US Application No.: 17/773,356 Filing Date: 29 April 2022.*

### AcSIR Course teaching:

**Course Co-ordinator:** BIO-NIIST-2-4104: Basic Molecular Biology

AcSIR-39-ID-002: Biology for Chemistry

**Course Teacher:** AcSIR-39-ID-003: Bioprospecting for natural resources

AcSIR-39-BS-AD-004: Molecular Biology of Industrial Organisms

### Open Position for Ph.D Program:

Interested students can apply through AcSIR Ph.D Program

### Present/Past group members:

PhD Scholar	Postdocs and Yung Scientists	MSc, MTech, MPhil
Degree awarded: 03	2	14
Ongoing: 02		



# Welcome to Research Group of Dr. Reshma M. V. @ CSIR-NIIST



**Our research focus is in the area of Functional foods and Nutraceuticals**



Senior Scientist  
Agro-processing &  
Technology Division  
CSIR-National Institute for  
Interdisciplinary Science  
and Technology (NIIST),  
Thiruvananthapuram-  
695019, Kerala, India  
Ph: +91-471-2515308 (Off.)  
+91-9496100937 (Mob.)  
E-mail:

[reshmamv2001@gmail.com](mailto:reshmamv2001@gmail.com)  
[mvreshma@niist.res.in](mailto:mvreshma@niist.res.in)

## **Past and Present Group Members**

- Ph.D. – 1  
(ongoing)
- Project assistants  
(4 present)
- M.Sc/M.Tech - 17  
(30 completed)

## **Education:**

1. **M.Sc.** – Food Science and Nutrition  
(Manasagangothri, University of Mysore)
2. **Post Graduate Diploma** – Food Analysis and Quality Control  
(Defence Food Research Laboratory, University of Mysore)
3. **Ph.D.** - Cochin University for Science and Technology (CUSAT)  
Ph.D. thesis title: Phytoconstituent Studies of Palmyra Palm  
(*Borassus flabellifer* Linn.) Sap, its Value Added Syrup and Process  
Optimization

## **Employment history:**

- Senior scientist at CSIR- NIIST (Sep 2012 to Present)
- Scientist C at CSIR- NIIST (Sep 2007 to Sep 2012)
- Scientist B at CSIR- NIIST (Sep 2004 to Sep 2007)
- Food Technologist at Rani Food Products, Vatakara  
(Aug 2003 to Sep 2004)
- Teaching Assistant at Kerala Agriculture University, Padannakad  
(Feb 2003 to Aug 2003)
- Product Development Executive at Elite Foods, Thrissur  
(Sep 2002 to Dec 2002)
- Guest Lecturer at Kannur University, Dept. of Life Science, Palayad  
(June 2001 to July 2002)

## **Broad Areas of Interest**

- **Nutraceuticals and Functional foods**
- **Structured lipids**
- **Natural Sweeteners**
- **Value addition of natural products**

## **Open Position for Ph.D Program**

Interested students can apply through  
AcSIR Ph.D Program



**Research focus area:** Mycology, Fungal ecology, taxonomy, Environmental Microbiology and their secondary metabolites like volatile compounds, drugs, dyes etc.



**Scientist & AcSIR Assistant Professor**

**Microbial Processes and Technology Division,  
CSIR-NIIST, Industrial Estate  
Pappanamcode,  
Thiruvananthapuram**

**Email:** [thirumalesh@niist.res.in](mailto:thirumalesh@niist.res.in) (2018 – present)

[thirubv@gmail.com](mailto:thirubv@gmail.com)

**Mobile No:** 91-9742170664

### **Education:**

- **Ph.D. (Microbiology)** from the department Microbiology, Kuvempu University, Karnataka, India (2013)
- **M.Sc., (Microbiology)** from the department Microbiology, Kuvempu University, Karnataka, India (2008).
- **B.Sc.** from Kuvempu University, Karnataka, India (2006)

### **Employment history:**

- **Assistant Professor** in Academy of Scientific and Innovative Research, New Delhi, India, (2018-till now)
- **Scientist** at Microbial Processes and Technology Division, National Institute for Interdisciplinary Science Technology, India (2018 – present)

### **Broad Areas of Interest**

- Ecology of fungi
- Secondary metabolites from fungi

### **Open Position for Ph.D Program**

Interested students can apply through AcSIR Ph.D Program