Bharathiar University

State University I "A++" Grade by NAAC I 26th Rank in MoE-NIRF
Maruthamalai Road, Coimbatore, Tamil Nadu - 641 046.

Dr R RAJKUMAR

Assistant Professor
Department of Environmental Sciences

Bharathiar University
Coimbatore, 641046
Tamil Nadu

E-mail: drrajkumar@buc.edu.in
Phone: 9080739369
Office Number: 0422-2428396

Research Area

- Carbon sequestration and climate change mitigation
- Green energies
- Wastewater treatment
- Aquatic Microbial Ecology

Courses Teaching

- Environmental Chemistry
- Ecotourism
- Waste Management and Bioremediation
- Environmental Geosciences

Research Experience: 17

Teaching Experience: 7

Research Credentials (as on January 2024 – Source: Google scholar)

H-index: 731 Citations: 13 i10-index: 14

Publications

International Journals: 20 National Journals: 5 Books/Chapters: 7
Conferences: 16

Career

At Bharathiar University

1. Designation : Assistant Professor
Period : November 2016 - Till Date

Other Institutes

1. Designation : Post Doctoral Fellow
Institution Name : National University of Malaysia, Malaysia
Period : June 2011 - December 2015

2. Designation : Post Doctoral Fellow
Institution Name : CSIR-Central Leather Research Institute, Chennai
Period : February 2016 - November 2016

Education

Ph. D.
Subject : Botany
Institution : Centre for Advanced Study in Botany
Affiliated University : University of Madras
Year of Award : January 2011

M. Sc.
Subject : Botany
Institution : Centre for Advanced Study in Botany
Affiliated University : University of Madras
Year of Award : April 2005

Dr R RAJKUMAR , Assistant Professor , Department of Environmental Sciences

B. Sc.
Subject : Botany
Institution : Government Arts College, Ariyalur
Affiliated University : Bharathidasan University
Year of Award : April 2002

Projects
National Level
Ongoing - 1 completed - 5

Research Guidance
Completed
Ph.D. - 2 M.Phil. - 1 PG - 18
On Going
Ph.D. - 2 PG - 2

Publications

International Journals - 20

20. Biosorption potential of Stoechospermum marginatum for removal of heavy metals from aqueous solution: Equilibrium, kinetic and thermodynamic study

Chemical Engineering Research and Design. 203, 207-218 (January 2024)
NaduvilVeettil Sarangi and Renganathan Rajkumar

19. Assessment of phytochemicals from marine algae Ulva fasciata and Dictyota dichotoma with antioxidant and antimicrobial potential

Applied Chemical Engineering. 6:3, 1-13 (October 2023)
Naduvil Veettil Sarangi, Mullikkottu Veettil Saranya Prakasan, Renganathan Rajkumar, Sathiyaraj Srinivasan

18. Evaluation of chemical constituents of Stoechospermum marginatum and its potential for antioxidant and antimicrobial activity

Biomass Conversion and Biorefinery. 1-12 (February 2023)
N.V.Sarangi, A.BaalaHarini, R.Rajkumar, Ashokkumar.V

17. Cultivation of marine diatom, Amphora sp. in municipal wastewater for enhancing lipids toward sustainable biofuel production

South African Journal of Botany. 155, 288-297 (February 2023)
A.BaalaHarini, N.V. Sarangi, N.Nisha and R.Rajkumar

16. Development of sustainable bioproducts from microalgae biomass: Current status and future perspectives

BioResources. 17:4, 7285- 7312 (November 2022)
A.BaalaHarini, R.Rajkumar

15. Technical insights into carbon dioxide sequestration by microalgae: A biorefinery approach towards sustainable environment

Biomass Conversion and Biorefinery (February 2022)
R.Rajkumar, Mohd Sobri Takriff and Ashokkumar Veeramuthu

14. A green approach for the synthesis of silver nanoparticles by Chlorella vulgaris and its application in photocatalytic dye degradation activity

Environmental Technology & Innovation. 21, 101282 (February 2021)
R. Rajkumar, G. Ezhumalai and M. Gnanadesigan

13. Enhanced production of lipid as biofuel feedstock from the marine diatom Nitzschia sp. by optimizing cultural conditions

Bioresources. 15:4, 7532-7550 (August 2020)
B. H. Anandapadmanaban, R. Rajkumar, and M.S. Takriff

12. Prospects of algae and their environmental applications in Malaysia: A case study

Journal of Bioremediation and biodegradation. 7:321 (January 2016)
R. Rajkumar, and M.S. Takriff

Dr R RAJKUMAR , Assistant Professor , Department of Environmental Sciences

11. Nutrient removal of POME using POME isolated microalgae strain, Characium sp.

Advanced Materials Research. 1113, 364-369 (July 2015)
T. B. Tamil Selvam, R. Rajkumar, and M. S. Takriff

10. Nutrient removal from anaerobically treated Palm Oil Mill Effluent by Spirulina platensis and Scenedesmus dimorphus

Der Pharmacia Lettre. 7:7, 416-421 (July 2015)
R. Rajkumar, and M. S. Takriff

9. The current methods for the biomass production of the microalgae from waste waters – an overview

World Applied Sciences Journal. 31:10, 1744-1758 (January 2014)
Z. Yaakob, K.F. Kamarudin, R. Rajkumar, M. S. Takriff, and S. N. Badar

8. Potential of the micro and macro algae for biofuel production: A Brief Review

Journal of Bioresources. 9: 1, 1606-1633 (December 2013)
R. Rajkumar, Z. Yaakob, and M. S. Takriff

7. Bioremediation of palm oil mill effluents (POME) using Scenedesmus dimorphus and Chlorella vulgaris

International Journal of Advanced Science Letters. 19:10, 2914-2918 (October 2013)
K. F. Kamarudin, Z. Yaakob, R. Rajkumar, M. S. Takriff, and J. A. Ghani

6. Optimization of medium composition for the production of peroxidase by Bacillus sp

Der Pharma Chemica. 5:2, 167-174 (April 2013)
R. Rajkumar, Z. Yaakob, M. S. Takriff, and K. F. Kamarudin

5. Phycoremediation in anaerobically digested palm oil mill effluent using Cyanobacterium, Spirulina platensis

International Journal of Biobased Materials and Bioenergy. 6, 1–6 (December 2012)
A. Zainal, Z.Yaakob, M. S. Takriff, R. Rajkumar, and J. A. Ghani

4. In vitro anticancer activity of natural ?-carotene from Dunaliella salina EU5891199 in PC-3 cells

Biomedicine & Preventive Nutrition. 3:2, 99-105 (October 2012)
K.R. Jayappriyan, R. Rajkumar, V. Venkatakrishnan, S. Nagaraj, and R. Rengasamy

3. Purification and characterization of a protease produced by Bacillus megaterium RRM2: application in detergent and dehairing industries

Journal of Basic Microbiology. 51, 1-11 (July 2011)
R. Rajkumar, K.R. Jayappriyan, and R. Rengasamy

2. Unusual occurrence of non carotenogenic strains of Dunaliella bardawil and Dunaliella parva in India

Journal of Basic Microbiology. 51, 473–483 (June 2011)
K.R. Jayappriyan, R. Rajkumar, and R. Rengasamy

1. Production and characterization of a novel protease from Bacillus sp RRM1 under Solid State Fermentation

Journal of Microbiology and Biotechnology. 21:6, 627-636 (April 2011)
R. Rajkumar, K.R. Jayappriyan, and R. Rengasamy

Conferences - 16

16. Phytoprospection of seaweed resource for environmental sustainability

International Conference on Advances in Biotechnology- Algae towards Sustainable Environment 2024 (ICAB-ASE 2024) conducted by Dwaraka Doss Goverdhan Doss Vaishnav College, Chennai, TN on January 22-23, 2024 (January 2024)

R. Rajkumar

15. Enhanced Lipid Production of Marine Diatoms Cultivated in Municipal Wastewater

National Conference on Sustainable Wellness through Noni, Medicinal Plants, Microbes and Biomolecules conducted by Madurai Kamaraj University, Madurai, TN during November 27-28, 2023. (November 2023)

A. Baala Harini and R. Rajkumar

14. Utilization of microalgal biomass in biocircular economy

Two days National conference on "Environment and Ecology" 04th & 05th October, 2023, Bharathiar University, Coimbatore, TN (October 2023)

Ezhumalai, G and Rajkumar, R.

Dr R RAJKUMAR , Assistant Professor , Department of Environmental Sciences

13. Screening and characterization of high lipid producing microalgae isolated from Saltpans of Tamil Nadu, India

International Conference on algae food, feed, fuel and fine chemicals 6-8th September, 2023, Bharathidasan University, Trichy, TN (September 2023)

Ezhumalai, G and Rajkumar, R

12. Assessment of phytochemical profile in Turbinaria ornata for its application of Antioxidant and Anticancer activities

National Conference on "Biomaterials in Health Care 2023" 18-19th August 2023 Sree Balaji Medical College and Hospital, Chennai, TN. (August 2023)

Sarangi, N.V. and Rajkumar, R

11. Assessment of lipid productivity in Chlorella vulgaris isolated from Saltpans of Tamil Nadu, India

1st National Conference on Biomaterials in Health Care 18th & 19th August 2023, Sree Balaji Medical College & Hospital, Chromepet, Chennai, TN (August 2023)

Ezhumalai, G and Rajkumar, R

10. In vitro antioxidant and antimicrobial activity of methanolic extract from brown seaweed, Stoechospermum marginatum

International Conference on "Recent innovations in multidisciplinary scientific research" (ICRIMSR- 2022) 9- 11th June 2022. Karpagam Academy of Higher education, Coimbatore, TN. (June 2022)

Sarangi, N.V. and Rajkumar R

9. Recent progress in microalgal research and its significance to the economics of climate change: A brief review

Proceedings of ICSSR Sponsored Webinar on Human Behaviour andEnvironmental Sustainability conducted by PSG College of Arts & Science, Coimbatore, TN, during December 17 - 18, 2021. ISBN: 978-81-954992-3-6. (December 2021)

A. Baala Harini, N.V. Sarangi, G.C. Singha, G. Ezhumalai and R. Rajkumar

8. Antimicrobial activity of extracts from macroalgae Dictyota dichotoma

National seminar on "Current scenario in Plant science" 18th December 2019 Avinashilingam Institute for Home Science and Higher Education for Women. Coimbatore, TN (December 2019)

Sarangi, N.V. and Rajkumar, R

7. Enhanced production of lipid as biofuel feedstock from the marine diatom Nitzschia sp. by adjustment of cultivation conditions

One day national seminar on current scenario in plant science, 18 December, 2019, Avinashilingam Institute for Home science and Higher Education for women. Coimbatore, TN (December 2019)

Baala Harini, A and Rajkumar R

6. Bioactive extracts of green seaweed, Ulva fasciata with antimicrobial potential

National Conference on "Bioprospecting of Algae" 1st and 2nd August 2019, Central University of Kerala, Kasaragod, Kerala (August 2019)

Sarangi, N.V., Saranya Prakasan, M.V. and Rajkumar, R

5. Assessment on the antimicrobial activity of green microalgae

Proceedings of International Conference on Renewable Energy and Sustainable Environment – RESE19. Organized by Dr. Mahalingam College of Engineering & Technology, Coimbatore, Tamil Nadu. ISBN No: 978-93-5235-155-8 (January 2019)

A. Baala Harini, N.V. Sarangi, and R. Rajkumar

4. Physicochemical characteristics and phytoplankton diversity in two lakes of Coimbatore, South India

International Conference on Advances and Challenges for sustainable Eco System - ICACSE 2018 conducted by Department of Chemical Engineering, National Institute of Technology, Tiruchirappalli, TN, December 6- 8, 2018. (December 2018)

R. Rajkumar and N. Deepak

3. Prospects and biotechnological applications of diatoms: A Review

International conference on Recent Scenario in Plant Science Research – climate change and its Associated variations" (ICRSPSR- 2018) conducted by Department of Botany Annamalai University, March 23-25, 2018, page: 166 (ISSN: 2184-0261). (March 2018)
R. Rajkumar and A. Baala Harini

Dr R RAJKUMAR , Assistant Professor , Department of Environmental Sciences

2. Microalgae: a potential resource for biofuel and bioremediation

National seminar on Current scenario in plant science research (CSPSR-2018) conducted by Annamalai University, TN, during 26 & 27 February 2018. (February 2018)

R. Rajkumar

1. Distribution of phytoplankton in Mandapam Coastal waters, South East Coast of India

10th NABS National Conference Proceedings paper: Recent trends in Life Science: Research, Practices and Application for Sustainable Development; Macmillan publishers, New Delhi. 10th NABS National Conference conducted by Bharathiar University, Coimbatore, TN (September 2017)
R. Rajkumar

Books/Chapters - 7

7. Algae materials for advanced biofuel production through the cost-effective process and integration of nanocatalysts

Algae Materials, Applications Benefitting Health, 1st Edition., 29-62. eBook ISBN: 9780443188176. Elsevier- Academic Publisher (March 2023)

G.C Singha, M. Vijayakumar, R. Rajkumar, K.R. Jayappriyan and S. Pujithaa

6. Bioactive Compounds from Algae: Potential Applications.

Algal Functional Foods and Nutraceuticals: Benefits, Opportunities, and Challenges. 1: 184-211. ISBN: 978-981-5051-88-9;eISBN: 978-981-5051-87-2 (Online)Bentham Science Publisher (November 2022)

K.R. Jayappriyan, C. Kurinjimalar, M. Kaviraj, M. Vijayakumar, R. Rajkumar and Rathinam Raja

5. Biodegradation of organic pollutants by microbial process

Environmental Microbiology: Emerging Technologies, 137-160. ISBN:3110727226, 9783110727227. Walter de Gruyter GmbH & Co KG, 2022 Publisher (September 2022)

Sarangi, N. V. and Rajkumar. R

4. Food wastes/residues: Valuable source of energy in circular economy

Handbook of Biofuels 1st Edition. Elsevier- Academic Press. ISBN: 9780128228104 (November 2021)

R. Rajkumar, and C. Kurinjimalar

3. Microbes and plant mineral nutrition

Microbiological activity for soil and plant health management, Springer Publisher. ISBN: 978-981-16-2921-1 (November 2021)

R. Rajkumar, and C. Kurinjimalar

2. Food and Nutraceutical Applications of Algae

Algae for Food: Cultivation, Processing and Nutritional Benefits, CRC Press-Taylor and Francis Group. ISBN 9780367762087 (October 2021)

K.R. Jayappriyan, B. Baskar, M. Vijayakumar, A. Brabakaran, R. Rajkumar, and S. Elumalai

1. The biology of microalgae

Biotechnical applications of microalgae: biodiesel and value added products, CRC Press, Taylor and Francis Group, UK. ISBN: 9780429087110 (May 2013)

R. Rajkumar and Z. Yaakob

National Journals - 5

5. Investigation of microalgae growth in palm oil mill effluent

International Journal of Multidisciplinary Research (IJMR). II:6 (III), 42-45 (January 2013)

T. B. Tamil Selvam, R. Rajkumar, and M. S. Takriff

4. Optimization of culture conditions for production of protease from Bacillus megaterium

Journal of Ecobiotechnology. 2:4, 40-46 (October 2010)

R. Rajkumar, K.R. Jayappriyan, P. Ramesh Kannan, and R. Rengasamy

3. Discrimination between the morphological and molecular identification in the genus Dunaliella

International Journal of Current Research. 8, 73–78 (September 2010)

K.R. Jayappriyan, R. Rajkumar, S. Nagaraj, S. Divya, and R. Rengasamy

2. Significance of 18S rDNA specific primers in the identification of genus Dunaliella

Journal of Experimental Sciences. 1:1, 27–31 (August 2010)

K.R. Jayappriyan, R. Rajkumar, P. Ramesh Kannan, S. Divya, and R. Rengasamy

Dr R RAJKUMAR , Assistant Professor , Department of Environmental Sciences

1. Optimization study in Dunaliella salina EU5891200 isolated in salt pans of Tamil Nadu, South India

Recent Research in Science and Technology. 2:4, 54-62 (July 2010)
K.R. Jayappriyan, R. Rajkumar, L. Sheeja, S. Divya, and R. Rengasamy

Projects

Ongoing - 1

1. Investigation on microalgal distribution in the saltpans of Tamil Nadu and assessment of its lipid profile for bioenergy production TANSCHE 22.65 Lakhs (May 2021 - May 2024)

Completed - 5

1. Investigation on the bioflocculant potential of Exopolysaccharide obtained from cyanobacteria. Funded by RUSA 2.0 - BEICH Others 10 Lakhs (December 2019 - June 2020)

2. Exploration and enumeration of high lipid producers of diatoms for biodiesel production from South East Coast of India DST – SERB 37.20 Lakhs (January 2016 - May 2019)

3. Study of biomass production, stress induced enhancement of exopolysaccharides from cyanobacteria and their flocculation activity. Under 'Student Project Scheme' funded by Tamil Nadu State Council for Science and Technology (TNSCST), Chennai during the academic year 2018-19. Name of the PG Student: Ms. S. Shalini Others 7500/- (January 2018 - May 2018)

4. Cultivation of Spirulina sp. in a photobioreactor for CO2 sequestration and commercial applications: A viable remedy to climate change. Under 'Student Project Scheme' funded by Tamil Nadu State Council for Science and Technology (TNSCST), Chennai during the academic year 2019-20. Name of the PG Student: Ms. M.J. Kanchana Others 7500/- (January 2020 - May 2020)

5. A Green approach in the cultivation of Chlorella sp. using dairy and fish wastes as low-cost nutrient medium for producing biomass and bio?products. Under 'Student Project Scheme' funded by Tamil Nadu State Council for Science and Technology (TNSCST), Chennai during the academic year 2022-23. Name of the PG Students: Mr. Phillmon Smart and Ms. S. Swetha Others 7500/- (January 2023 - May 2023)