




Bharathiar University

State University | "A++" Grade by NAAC | 46th Rank in MoE-NIRF
Maruthamalai Road, Coimbatore, Tamil Nadu - 641 046.

<p>Dr M RAJKUMAR Professor and Head Department of Environmental Sciences Bharathiar University Coimbatore, 641041 Tamil Nadu E-mail: mraaj13@buc.edu.in Phone: 8939189830 Office Number: 0422-2428395</p>	
<p>Research Area</p> <ul style="list-style-type: none"> • Bioremediation - Phytoremediation • Plant-metal-microbe interaction • Climate change biology • Environmental Microbiology • Plant Stress Physiology 	<p>Courses Teaching</p> <ul style="list-style-type: none"> • Environmental Pollution • Environmental Microbiology and Biotechnology • Waste Management and Bioremediation
<p>Research Experience: 25</p>	<p>Teaching Experience: 15</p>
<p>Research Credentials (as on October 2024 – Source: Google scholar) H-index: 42 Citations: 11531 i10-index: 58</p>	
<p>Publications International Journals: 64 National Journals: 2 Books/Chapters: 8 Conferences: 62 Publication Database: 53</p>	
<p>Career</p> <p>Other Institutes</p> <ol style="list-style-type: none"> 1. Designation : Post Doctoral Fellow Institution Name : JSPS Fellow, Graduate School of Agricultural Science, Kobe University, Japan Period : September 2008 - September 2010 2. Designation : Faculty Fellow Institution Name : Scientist D - DBT Ramalingasamy Fellow, NEERI - CSIR. Taramani, Chennai Period : March 2011 - August 2013 3. Designation : Post Doctoral Fellow Institution Name : College of Agriculture, Chonbuk National University, South Korea Period : June 2003 - January 2006 4. Designation : Faculty Fellow Institution Name : Scientist D - DBT Ramalingasamy Fellow, Central University of Tamil Nadu, Period : August 2013 - November 2016 5. Designation : Post Doctoral Fellow Institution Name : FCT Research and Teaching Fellow, University of Coimbra, Portugal Period : April 2006 - August 2008 6. Designation : Lecturer Institution Name : Department of Biotechnology, KSR Collage of Technology Period : April 2002 - April 2003 <p>At Bharathiar University</p> <ol style="list-style-type: none"> 1. Designation : Professor Period : November 2016 - November 2024 	
<p>Education</p>	



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Maruthamalai Road, Coimbatore, Tamil Nadu - 641 046.

Dr M RAJKUMAR , Professor and Head , Department of Environmental Sciences

Ph. D.

Subject : Environmental Science

Institution : Centre for Environmental Studies (Supervisor: Dr. R. Nagendran, Former Expert Member, NGT)

Affiliated University : Anna University, Chennai

Year of Award : September 2002

M. Sc.

Subject : Botany

Institution : ANJAC, Sivakasi

Affiliated University : MK University, Madurai

Year of Award : May 1996

B. Sc.

Subject : Botany

Institution : ANJAC, Sivakasi

Affiliated University : MK University, Madurai

Year of Award : May 1994

Projects

Research Guidance Completed

Ph.D. - 3 Post-Doc - 2M.Phil. - 1

Visits

1. SOUTH KOREA -Post Doc Work (2006-01-20 - 2003-06-01)
2. PORTUGAL - Post Doc Work (2006-04-04 - 2008-08-31)
3. JAPAN - Post Doc Work (2008-09-08 - 2010-09-08)
4. SPAIN - Paper Presentation (2006-09-10 - 2006-09-13)
5. PORTUGAL - Paper Presentation (2009-12-02 - 2009-12-08)

Publications

International Journals - 64

64. Synergistic effect of biochar and plant growth promoting bacteria improve the growth and phytostabilization potential of Sorghum bicolor in Cd and Zn contaminated soils

Rhizosphere 29 100844 (July 2024)

Vadivel Anbuganesan, Ramasamy Vishnupradeep, Ninu Mehnaz, Adarsh Kumar, Helena Freitas, Mani Rajkumar

63. Combined Application of Biochar and Plant Growth-Promoting Rhizobacteria Improves Heavy Metal and Drought Stress Tolerance in Zea mays

Plants 13 1143 (January 2024)

Vadivel Anbuganesan, Ramasamy Vishnupradeep, L Benedict Bruno, Krishnan Sharmila, Helena Freitas, Mani Rajkumar

62. Amaranthus Biochar-Based Microbial Cell Composites for Alleviation of Drought and Cadmium Stress: A Novel Bioremediation Approach

Plants 12 1973 (September 2023)

Tripti, Kumar, A., Maleva, M., Borisova, G., Rajkumar, M.

61. Plant growth promoting bacteria improve growth and phytostabilization potential of Zea mays under chromium and drought stress by altering photosynthetic and antioxidant responses

Environmental Technology & Innovation 102154 (November 2022)

R Vishnupradeep, L Benedict Bruno, Zarin Taj, Chinnannan Karthik, Dinakar Challabathula, Adarsh Kumar, Helena Freitas, Mani Rajkumar



60. Effect of Plant Growth-Promoting Rhizobacteria and Biochar on Ricinus communis Growth, Physiology, Nutrient Uptake and Soil Enzyme Activities,

Applied Ecology and Environmental Sciences 10 640 (September 2022)

V. Anbuganesan, R. Vishnupradeep, V.S. Varshini, A.S. Archana, S. Soundarya, L. Benedict Bruno, M. Rajkumar.

59. Synergism of Industrial and Agricultural Waste as a Suitable Carrier Material for Developing Potential Biofertilizer for Sustainable Agricultural Production of Eggplant

Horticulturae 8 444 (July 2022)

Tripti; Kumar, A.; Kumar, V.; Anshumali; Bruno, L.B.; Rajkumar

58. Enhanced phytoextraction of multi-metal contaminated soils under increased atmospheric temperature by bioaugmentation with plant growth promoting Bacillus cereus

Journal of Environmental Management 289, 112553 (October 2021)

L. B. Bruno, V. Anbuganesan, C. Karthik, Tripti, A. Kumar, J. R. Banu, H. Freitas, M. Rajkumar

57. Valorization of agricultural residues: different biorefinery routes,

Journal of Environmental Chemical Engineering 9 (4) 105435 (August 2021)

G. Ginni, S. Kavitha, R.Y. Kannah, S. K. Bhatia, S. A. Kumar, M. Rajkumar, K. Gopalakrishnan, A. Pugazhendhi, N. T. L. Chi, J. R. Banu,

56. Synergistic effect of ACC deaminase producing Pseudomonas sp. TR15a and siderophore producing Bacillus aerophilus TR15c for enhanced growth and copper accumulation in Helianthus annuus L

Chemosphere 130038 (August 2021)

Adarsh Kumar, Tripti, Maria Maleva, Benedict Bruno, Mani Rajkumar

55. Cellulosimicrobium funkei strain AR6 alleviate Cr(VI) toxicity in Lycopersicon esculentum by regulating the expression of growth responsible, stress tolerant and metal transporter genes

Rhizosphere 18 100351 (June 2021)

C.Karthik, K.Kadirvelu, B.Bruno, K.Maharajan, M.Rajkumar, S.R.Manoj, P.I.Arulselvi,

54. Macroalgae derived biohydrogen production: Biorefinery and circular bioeconomy

Biomass Conversion and Biorefinery In press (June 2021)

Dinesh Kumar M, Kavitha S, Vinay Kumar Tyagi, Rajkumar M., Shashi Kant Bhatia, Gopalakrishnan Kumar, Rajesh banu J

53. Bioaugmentation with copper tolerant endophyte Pseudomonas lurida strain EOO26 for improved plant growth and copper phytoremediation by Helianthus annuus

Chemosphere 266 128983 (March 2021)

Adarsh Kumar, Tripti, Olga Voropaeva, Maria Maleva, Ksenia Panikovskaya, Galina Borisova, Mani Rajkumar, L. Benedict

52. Amelioration of chromium and heat stresses in Sorghum bicolor by Cr6+ reducing-thermotolerant plant growth promoting bacteria

Chemosphere 244 125521 (November 2020)

L. Benedict Bruno, ChinnannanKarthik, Ying Ma, K. Kadirvelu, Helena Freitas, M. Rajkumar

51. Understanding the molecular mechanisms for the enhanced phytoremediation of heavy metals through plant growth promoting rhizobacteria: A review

Journal of Environmental Management 254 109779 (January 2020)

Srinivas Ravi Manoj, ChinnannanKarthik, Krishna Kadirvelu, PadikasanIndra Arulselvi, Thangavel Shanmugasundaram, Benedict Bruno, M. Rajkumar

50. Potential of plant beneficial bacteria and arbuscular mycorrhizal fungi in phytoremediation of metal-contaminated saline soils

Journal of Hazardous Materials 379 120813 (November 2019)

Ying Ma, M. Rajkumar, Rui S. Oliveira, Chang Zhang, Helena Freitas

49. Synthesis of water soluble and bio-tagable CdSe@ZnS quantum dots

RSC Advances 8 8516-8527 (November 2018)

G. Ramalingam, K. VenkataSaravanan, T. KayaVizhi, M.



48. Surfactant assisted disperser pretreatment on the liquefaction of *Ulva reticulata* and evaluation of biodegradability for energy efficient biofuel production through nonlinear regression modelling

Bioresource Technology 255 116–122 (November 2018)

M. Dinesh Kumar, K. Tamilarasan, S. Kaliappan, J. Rajesh Banu, M. Rajkumar, Sang Hyoun Kim

47. Impact of mild alkali dosage on immobilized *Exiguobacterium* spp. mediated cost and energy efficient sludge disintegration

Bioresource Technology 245 434-441 (November 2017)

J. Rajesh Banu, U Ushani, M. Rajkumar, R. Naresh Kumar, OP Karthikeyan.

46. Serpentine endophytic bacterium *Pseudomonas azotoformans* ASS1 accelerates phytoremediation of soil metals under drought stress

Chemosphere 185 75-85 (November 2017)

Y. Ma, M. Rajkumar, A. Moreno, C. Zhang, H. Freitas

45. Alleviation of environmental stress in plants: the role of beneficial *Pseudomonas* spp.

Critical reviews in Environmental Science and Technology 47 372–407 (March 2017)

M. Rajkumar., L. Bruno., Rajesh Banu,

44. Inoculation of *Brassica oxyrrhina* with plant growth promoting bacteria for the improvement of heavy metal phytoremediation under drought conditions

Journal of Hazardous Materials. 320 36–44 (November 2016)

Y Ma, M. Rajkumar, C. Zhang, H. Freitas

43. Treatment of seafood processing wastewater using upflow microbial fuel cell for power generation and identification of bacterial community in anodic biofilm

Journal of Environmental Management 180 351-358 (November 2016)

Jayashree C., Rajkumar M., Arulazhagan P., Yogalakshmi KN. Srikanth M., Rajesh Banu J.

42. Beneficial role of bacterial endophytes in heavy metal phytoremediation.

Journal of Environmental Management 174 14-25 (September 2016)

Y Ma, M. Rajkumar, C. Zhang, H. Freitas

41. Improving the biogas production performance of municipal waste activated sludge via disperser induced microwave disintegration.

Bioresource Technology 217 21–27 (June 2016)

S. Kavitha, J. Rajesh Banu, J. Vinoth Kumar, M. Rajkumar

40. The hyperaccumulator *Sedum plumbizincicola* harbors metal-resistant endophytic bacteria that improve its phytoextraction capacity in multi-metal contaminated soil

Journal of Environmental Management, 156 62-69, 2015 (November 2015)

Y. Ma., R.S. Oliveira., F. Nai., M. Rajkumar., Y. Luo., I. Rocha., H. Freitas

39. Serpentine bacteria influence metal translocation and bioconcentration of *Brassica juncea* and *Ricinus communis* grown in multi-metal polluted soils.

Frontiers in Plant Science 5 757, 2015 (IF 5.6) (August 2015)

Y. Ma, M. Rajkumar, I. Rocha, R. S. Oliveira, H. Freitas

38. Inoculation with metal mobilizing plant growth promoting rhizobacterium *Bacillus* sp. SC2b and its role in rhizoremediation

Journal of Toxicology and Environmental Health, Part A, Current Issues 78 931- 944 (July 2015)

Y. Ma, R.S. Oliveira.,L. Wu., Y. Luo., M.Rajkumar, I. Rocha, H. Freitas.

37. Improvement of Ni phytostabilization by inoculation of Ni resistant *Bacillus megaterium* SR28C.

Journal of Environmental Management 128 973-980, 2013 (IF 8.7) (November 2013)

M. Rajkumar, Y. Ma., H. Freitas



- 36. Phytoextraction of heavy metal polluted soils using *Sedum plumbizincicola* inoculated with metal mobilizing *Phyllobacterium myrsinacearum* RC6b.**
Chemosphere 93 1386-92, 2013 (IF 8.8) (November 2013)
Y. Ma., M. Rajkumar, Y. Luo, H. Freitas.
- 35. Climate change driven plant-metal-microbe interactions**
Environment International 53 74-86. 2013 (IF 11.8) (November 2013)
M. Rajkumar., M.N.V. Prasad., S. Sandhya., H. Freitas.
- 34. Effects of Chitosan Derivatives on Plant Growth and Ni uptake in *Ricinus communis* and *Helianthus annuus***
Journal of Chitin and Chitosan Science. 1 65-70, 2013 (June 2013)
M. Rajkumar, R. Jayakumar, H. Freitas.
- 33. Perspectives of plant associated microbes in heavy metal phytoremediation.**
Biotechnology advances 30 1562–1574, 2012 (IF 16) (November 2012)
M. Rajkumar., S. Sandhya., M.N.V. Prasad., H. Freitas
- 32. Detection of soil organic nitrogen in xylem sap collected from non-mycorrhizal plants using an immunological technique.**
Communications in Soil Science and Plant Analysis 43 2669–2678, 2012 (IF 1.8) (June 2012)
T. Yoshida , N. Ae , J.H. Park , M. Rajkumar , J. Kasuga, S. Matsumoto
- 31. Plant growth promoting rhizobacteria and endophytes accelerate phytoremediation of metalliferous soils.**
Biotechnology Advances. 29 248-258, 2011 (IF 16) (November 2011)
Y. Ma, M.N.V. Prasad, M. Rajkumar, H. Freitas
- 30. Inoculation of endophytic bacteria on host and non-host plants – Effects on plant growth and Ni uptake.**
Journal of Hazardous Materials. 196 230-237, 2011 (IF 14.2) (May 2011)
Y. Ma, M. Rajkumar, Y. Luo, H. Freitas.
- 29. Assessment of potentially reactive pools of aluminum in Andisols using a five-step sequential extraction**
Soil Science & Plant Nutrition. 57 500-507. 2011 (IF 2) (May 2011)
X. Qing, N. Ae, T. Suzuki, M. Rajkumar, Fukunaga, N. Fujitake
- 28. Inoculation of Ni-resistant plant growth promoting bacterium *Psychrobacter* sp. strain SRS8 for the improvement of nickel phytoextraction by energy crops.**
International Journal of Phytoremediation 13 126-139, 2010, (IF 3.7) (August 2010)
Y. Ma, M. Rajkumar, J.A.F. Vicente, H. Freitas
- 27. Potential of siderophore producing bacteria for improving heavy-metal phytoextraction**
Trends in Biotechnology. 28 142-149, 2010 (IF 17.3) (April 2010)
M. Rajkumar, N. Ae, M.N.V. Prasad, H. Freitas.
- 26. Biotechnological applications of serpentine soil bacteria for phytoremediation of heavy metals.**
Critical Reviews in Biotechnology 29 120-130 2009 (IF 9) (November 2009)
M. Rajkumar, M.N.V. Prasad, H. Freitas, N. Ae
- 25. Preparation, characterization, bioactive and metal uptake studies of alginate/phosphorylated chitin blend films.**
International Journal of Biological Macromolecules 44 107–111 2009, (IF 5.1) (November 2009)
R. Jayakumar, M. Rajkumar, H. Freitas, N. Selvamurugan, S. V. Nair, T. Furuike, H. Tamura.
- 24. Endophytic bacteria and their potential to enhance heavy metal phytoextraction.**
Chemosphere 77 153–160, 2009 (IF 8.8) (September 2009)
M. Rajkumar, N. Ae., H. Freitas.
- 23. Inoculation of plant growth promoting bacterium *Achromobacter xylosoxidans* strain Ax10 for the improvement of copper phytoextraction by *Brassica juncea*.**
Journal of Environmental Management 90 831-837 2009 (IF 8.7) (September 2009)
Y. Ma, M. Rajkumar and H. Freitas



22. Improvement of plant growth and nickel uptake by nickel resistant-plant growth promoting bacteria.

Journal of Hazardous Materials 166 1154-1161 2009 (IF 14.2) (August 2009)
Y. Ma, M. Rajkumar and H. Freitas

21. Bioactive and metal uptake studies of carboxymethyl chitosan-graft-D-glucuronic acid membranes for tissue engineering and environmental applications

International Journal of Biological Macromolecules 45 135-139, 2009, (IF 5.1) (July 2009)
R. Jayakumar, M. Rajkumar, H. Freitas, N. Selvamurugan, S. V. Nair, T. Furuike, H. Tamura,

20. Isolation and characterization of Ni mobilizing PGPB from serpentine soils and their potential in promoting plant growth and Ni accumulation by Brassica spp.

Chemosphere 75 719-725 2009 (IF 8.8) (June 2009)
Y. Ma, M. Rajkumar and H. Freitas

19. Effects of chitin and salicylic acid on biological control activity of Pseudomonas spp. against damping off of pepper

South African Journal of Botany 74 268-273 2008 (IF 1.7) (November 2008)
M. Rajkumar, K.J. Lee and H. Freitas

18. Rehabilitation of abandoned mine sites: connection to bioprospecting of metal tolerant plants and phytoassisted rhizoremediation.

The Palaeobotanist 57 (3) 559-571 2008 (November 2008)
M.N.V. Prasad, M. Rajkumar, H. Freitas.

17. Characterization of metal resistant plant growth promoting Bacillus weihenstephanensis isolated from serpentine soil in Portugal

Journal of Basic Microbiology 48 500-508. 2008 (IF 2.2) (July 2008)
M. Rajkumar, Y. Ma., H. Freitas

16. Influence of metal resistant-plant growth promoting bacteria on the growth of Ricinus communis in soil contaminated with heavy metals

Chemosphere 71 834-842 2008 (IF 8.8) (July 2008)
M. Rajkumar and H. Freitas

15. Effects of inoculation of plant-growth promoting bacteria on Ni uptake by Indian mustard.

Bioresource Technology. 99 3491-3498. 2008 (IF 11.4) (July 2007)
M. Rajkumar and H. Freitas

14. Chitosan and its derivatives: Promising materials for textile finishing

Asian Chitin Journal 3 1-14 2007 (July 2007)
M. Prabakaran, M. Rajkumar and R. Jayakumar

13. Treatment of spent wash in an anaerobic mesophilic suspended growth reactor (AMSGR).

Journal of Environmental Biology 27 (1) 2006 (IF 0.7) (September 2006)
J. Rajesh Banu, S. Kaliappan, M. Rajkumar and Dieter Beck

12. Molecular Analysis of Korean Isolate of Barley Yellow Mosaic Virus.

Virus genes 32 175-180 2006 (IF 1.6) (July 2006)
Kui Jae Lee, Min Kyung Choi, Wang Hyu Lee and M. Rajkumar.

11. Influence of plant growth promoting bacteria and Cr6+ on the growth of Indian mustard

Chemosphere 62 741-748. 2006 (IF 8.8) (June 2006)
M. Rajkumar, R. Nagendran, Kui Jae Lee and Wang Hyu Lee.

10. Growth of Brassica juncea under chromium stress: Influence of siderophores and indole 3 acetic acid producing rhizosphere bacteria

Journal of Environmental Biology 26 (4) 693-699 2005 (IF 0.7) (July 2005)
M. Rajkumar, Kui Jae Lee, Wang Hyu Lee and J. Rajesh banu.,



9. Characterization of a novel Cr6+ reducing Pseudomonas sp. with plant growth-promoting potential.

Current Microbiology 50 266-271 2005 (IF 2.6) (May 2005)
M. Rajkumar, R. Nagendran, Kui Jae Lee and Wang Hyu Lee.

8. Screening of bacterial antagonists for biological control of Phytophthora blight of pepper

Journal of Basic Microbiology 45(1) 55-63 2005 (IF 2.2) (February 2005)
M. Rajkumar, Wang Hyu Lee and Kui Jae Lee.

7. Synthesis, characterization, and Antibacterial Activity of Metal-Containing Polyurethanes

Journal of Applied Polymer Science 91(1) 288-295 2004 (IF 2.5) (November 2004)
R. Jayakumar, Y.S. Lee, M. Rajkumar, S. Nanjundan,

6. Polymeric Drug for Antimicrobial Activity Studies: Synthesis and Characterization

Journal of Bioactive and Compatible Polymers 18(3) 219 - 228 2003 (IF 1.6) (June 2003)
Arun. A, B. S. R. Reddy, and M. Rajkumar

5. Synthesis and characterization of metal containing polyurethane having antibacterial activity.

Journal of Applied Polymer Science, 85(6) 1194-1206. 2002 (IF 2.5) (November 2002)
R. Jayakumar, M. Rajkumar, R. Nagendran and S. Nanjundan.

4. Studies on metal containing polyurethanes based on divalent metal salts of Mono (hydroxyethoxy ethyl) pthalate.

Journal of Macromolecular Science, Part A-Pure and Applied Chemistry 38(9) 869-888 2001 (IF 1.3) (November 2001)
R. Jayakumar, S. Nanjundan, M. Rajkumar and R. Nagendran

3. Studies on the effects of chromium stress on the germination and growth of Phaseolus mungo- Influence of chromium resistant Pseudomonad

J. Environ. Sci. Health Part A-Toxic/Hazard. Subst. Environ. Eng., A35 (4) 625-634 2000 (IF 1.5) (November 2000)
M. Rajkumar and R. Nagendran

2. Synthesis, characterization and antibacterial activity of Mono (Hydroxyethoxy ethyl) Pthalate.

Oriental Journal of Chemistry. 16(2) 243-248 2000 (IF 0.6) (November 2000)
R. Jayakumar, M. Rajkumar and S. Nanjundan

1. Synthesis, characterization and antibacterial activity of divalent metal salts of Mono (HydroxyPentyl) Pthalate

Oriental Journal of Chemistry 15(3) 437-440 1999 (IF 0.6) (November 1999)
R. Jayakumar, M. Rajkumar and S. Nanjundan

Conferences - 62

62. Role of Plant Growth Promoting Rhizobacteria in Alleviation of Abiotic stresses

9th Asian PGPR conference- Beneficial Microbes for Sustainable Agriculture 29th and 30th July 2024 Department of Botany, Bharathiar University (July 2024)
M. Rajkumar

61. Enhancing Zea mays Growth and Heavy Metal Stress TolerancethroughPlant growth-promoting rhizobacteria PGPR (Zn11) andBiocharbasedSeed Coating

9th Asian PGPR conference- Beneficial Microbes for Sustainable Agriculture 29th and 30th July 2024 Department of Botany, Bharathiar University (July 2024)
Archana A S , Soundarya S and Rajkumar M

60. Effects of Biochar – Encapsulated Plant Growth Promoting Rhizobacteria on Growth and Physiological Response of Zea mays

9th Asian PGPR conference- Beneficial Microbes for Sustainable Agriculture 29th and 30th July 2024 Department of Botany, Bharathiar University (July 2024)
Sharmila K, Soundarya S, Archana A.S, Rajkumar M

59. Mitigating microplastic stress on Zea mays and Sorghum bicolor: The role of plant growth promoting bacteria

9th Asian PGPR conference- Beneficial Microbes for Sustainable Agriculture 29th and 30th July 2024 Department of Botany, Bharathiar University (July 2024)
Varshini V. S, Rajkumar M



58. Encapsulation of plant growth promoting rhizobacteria *Pseudomonas guariconensis* Zn30 with biochar and its effect on the growth of *Zea mays* under heavy metal stress

9th Asian PGPR conference- Beneficial Microbes for Sustainable Agriculture 29th and 30th July 2024 Department of Botany, Bharathiar University (July 2024)

Soundarya S, Archana A.S, Rajkumar M

57. Understanding plant-microbe interactions for remediation of microplastic-polluted soils

National Conference on Environment and Ecology- 2023 4th and 5th October 2023 Department of Environmental Sciences, Bharathiar University, Coimbatore (October 2023)

Varshini V. S, Sharmila K, Rajkumar M

56. Biochar based encapsulation of plant growth-promoting rhizobacteria for improving salinity stress tolerance in plants,

National Conference on Environment and Ecology- 2023 4th and 5th October 2023 Department of Environmental Sciences, Bharathiar University, Coimbatore (October 2023)

Sharmila K, Varshini VS, Rajkumar M,

55. Seed-coating with plant growth-promoting bacteria and biochar for alleviation of heavy metal stress in plants

National Conference on Environment and Ecology- 2023 4th and 5th October 2023 Department of Environmental Sciences, Bharathiar University, Coimbatore (October 2023)

Archana A.S, Soundarya S, Rajkumar M.

54. Preparation of Biochar Encapsulated Plant Growth Promoting Bacteria and Its Effects on *Zea mays* Under Heavy Metal Stress,

National Conference on Environment and Ecology- 2023 4th and 5th October 2023 Department of Environmental Sciences, Bharathiar University, Coimbatore – 641046 (October 2023)

Soundarya S, Archana A.S, Rajkumar M

53. Biochar and Plant Beneficial Bacteria based Seed Coating Improve *Zea mays* Growth and Heavy Metal Stress Tolerance, ,

National conference on climate change on earth's environment(CCEE-2023), September 14-15. 2023. Department of Marine Biotechnology, Academy of Maritime Education and Training, Chennai (September 2023)

Archana A.S, Sharmila K, Soundarya S, Rajkumar M,

52. Plant Beneficial Bacteria Encapsulated with Biochar Improve Plant Growth and Heavy Metal Tolerance in *Zea mays* Organized

National conference on climate change on earth's environment(CCEE-2023), by September 14-15. 2023., Department of Marine Biotechnology, Academy of Maritime Education and Training, Chennai, (September 2023)

Soundarya S, Varshini V.S, Archana A.S, Rajkumar M

51. Coating Seeds with Plant- Beneficial Bacteria and Biochar Improves the Growth of *Zea Mays*,"

International Conference on Recent Technology for Sustainable Development of Insects, Microbes and Health, March 9th and 10th 2023., Loyola College, Chennai, (March 2023)

Archana A.S, Vishnuprdeep R, Varshini V.S, Rajkumar M

50. Microencapsulation of Plant Beneficial Bacteria *Pseudomonas guariconensis* Zn30 and Its Effect on Growth of *Zea Mays*

International Conference on Recent Technology for Sustainable Development of Insects, Microbes and Health, March 9th and 10th 2023, Loyola College, Chennai, (March 2023)

Soundarya S, Anbuganesan V, Sharmila K, Rajkumar M, ","

49. Plant beneficial bacteria and biochar-based seed coating for sustainable agriculture

National seminar on Development of Kerala: possibilities and challenges, December 19-21, 2022., Malayalam University, Malappuram, Kerala (December 2022)

Archana A.S, Soundarya S, Sharmila K, Rajkumar M,



48. Effect of biochar amendment on alleviation of heavy metal and salinity stress in *Vigna unguiculata* and *Zea mays*

DST-PURSE supported Satellite Symposia on Physical Sciences, Life Sciences, Chemical Sciences, and Mathematical-Computational Sciences, September 13 to 15, 2022, Bharathiar University, Coimbatore - 641 046 (September 2022)

Soundarya S, Archana A.S, Sharmila k, Rajkumar M,

47. Isolation, Screening and Characterization of Endophytic Bacteria for Amelioration of Heavy Metal and Heat Stresses in Plants

DST-PURSE supported Satellite Symposia on Physical Sciences, Life Sciences, Chemical Sciences, and Mathematical-Computational Sciences, September 13 to 15, 2022, Bharathiar University, Coimbatore - 641 046 (September 2022)

Anbuganesan V, Vishnupradeep R, Rajkumar M

46. Effect of biochar on the growth of *Ricinus communis* grown on copper smelter slag: A pot scale study.

AIP Conference Proceedings 2390, 030094 (2022); <https://doi.org/10.1063/5.0069735>, Ural Federal University (August 2022)

Tripti, A. Kumar, M. Maleva, G. Borisova, I. Kiseleva, and M. Rajkumar..

45. Screening and Characterization of endophytic bacteria for improving plant growth under multiple abiotic stress conditions

7th International Conference on Environment and Ecology, 26-28 November 2021., International Foundation for Environment and Ecology, India (November 2021)

Anbuganesan V, Soundarya S, Benedict Bruno L, Rajkumar M

44. Effect of plant growth promoting bacteria and biochar on the growth and physiological response of *Ricinus communis* in heavy metal contaminated soils

7th International Conference on Environment and Ecology, 26-28 November 2021, International Foundation for Environment and Ecology (November 2021)

Vishnupradeep R, Archana AS, Benedict Bruno L, Rajkumar M

43. Redox-reactions of sunflower inoculated with plant growth promoting endophyte *Pseudomonas lurida* strain EOO26 under copper and nickel stress

The III International Symposium on Molecular aspects of plant redox metabolism, 22–28 August 2021, Ural Federal University (August 2021)

Tripti, Kumar A., Voropaeva O., Maleva M., Panikovskaya K., Borisova G., Bruno L. B.,

42. Effect of plant growth-promoting bacteria on *Zea mays* growth, photosynthetic and antioxidant response in chromium contaminated soils under drought stress

The III International Symposium on Molecular aspects of plant redox metabolism, 22–28 August 2021, Ural Federal University (August 2021)

Bruno L. B., Tripti, Kumar ?, Rajkumar M.

41. Effect of biochar on the growth of *Ricinus communis* grown on copper smelter waste: a pot scale study

International Scientific Conference – Actual Problems of organic chemistry and Biotechnology, November 18-21, 2020, Ural Federal University (November 2020)

T. Tripti, A. Kumar, M. Maleva, G. Borisova, I. Kiseleva, M. Rajkumar

40. Studies on the effects of P loaded biochar on the growth and ecophysiological responses of *Zea mays* under droughtstress

Frontiers in Ecobiological Sciences and its Applications (FESA - 2019) October 16 to 18, 2019., School of Life Sciences, PeriyarUniversity Salem (October 2019)

Vishnupradeep R, Benedict Bruno L, Anbuganesan V, Rajkumar M

39. Alleviation of adverse effects of drought stress on *Phaseolus vulgaris* using K⁺ loaded biochar

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