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<https://www.scopus.com/authid/detail.uri?authorId=55928874800>

[https://www.researchgate.net/profile/Aruliah\\_Rajasekar](https://www.researchgate.net/profile/Aruliah_Rajasekar)

<http://loop.frontiersin.org/people/123359/overview>

**Education:**

Postdoctoral Research Fellowship (PDF): National University of Singapore (NUS), Kent Ridge, Singapore.

Ph.D. (Microbiology), Bharathidasan University & Central Electrochemical Research Institute (CSIR-CECRI), Karaikudi.

M.Sc. (Microbiology), Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India.

B.Sc. (Biochemistry), Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India.

**Career:**

2013 – Present      Assistant Professor, Thiruvalluvar University, Vellore, India.

2008 – 2013      Postdoctoral Research Fellow, National University of Singapore (NUS).

2006 – 2008      Senior Research Fellow, CSIR-CECRI, Karikudi, India

2005 – 2006      Junior Research Fellow, CSIR-CECRI, Karikudi, India

2002 – 2003      Project Fellow, CSIR-CECRI, Karikudi, India

2001 – 2002      Project Assistant, Sri Sankara Arts and Science College, Kanceepuram.

2000 – 2001      Lecturer, Sri Sankara Arts and Science College, Kanceepuram, Tamilnadu

**Areas of Interest:**

- Microbiologically Influenced Corrosion of aqueous/non-aqueous environments
- Biodegradation and Bioremediation
- Metagenomics
- Bioleaching of precious metals from minerals and waste materials
- Bio-Electrokinetics for waste management
- Microbial fuel cell
- Airborne bacteria (Aerobiology)

### **Summary of research:**

Molecular identification of the corrosive microbial communities and biocorrosion and electrochemical behavior of hydrocarbon degrading bacteria on various engineering material and its corrosion control strategies using biocide/inhibitors. In addition, biofilm formation and its role/mechanism on biocorrosion of different metals were investigated. We screened many eco-friendly compounds and selected some green inhibitors to inhibit the microbial corrosion problems in the oil reservoir conditions. Additionally many of biocides and chemical inhibitors also applied to inhibit the biofilm formation over the metal surfaces.

In addition we also carried out biodegradation of petroleum hydrocarbons using bacterial strains with reference to bioremediation purposes. We also interested in biosurfactant studies such as screening and optimization of culture conditions for enhanced productions and their role in the biodegradation of hydrocarbons and might be applied for other environmental applications such as microbial oil recovery, bioremediation, as emulsifier in food industry also utilized for pharmaceutical applications. Also we have interested in the waste water, textile and tannery effluent treatment using integrated approaches of electro-kinetics with biodegradation. We also fabricated microbial fuel cell for waste water treatment along with generation of electric power.

### **Honors/Awards/Fellowship:**

2016: **BEST POSTER AWARD** in Asia-Pacific Conference on Biotechnology for Waste Conversion, Hong Kong Baptist University, Hong Kong.

2016: **BEST PAPER AWARD** in National seminar on “Frontiers in bioprocess Technology and Microbial Ecology (FBTME-2016) for both Oral/Poster held at Periyar University, Salem.

2015: **Best Oral Presentation Award** in International conference on “Converging Biotechnological Innovations for Health, Food and Environmental welfare- ICCBI” by Karunya University, Coimbatore.

2015: **Young Scientist Award** in International conference on “Converging Biotechnological Innovations for Health, Food and Environmental welfare- ICCBI” by Karunya University, Coimbatore.

2013: **Ramalingaswamy Fellowship** awarded by Department of Biotechnology (DBT), Govt. of India,

2013: **Young Scientist Award** by SERB, Department of Science and Technology (DST), Govt. of India,

2008: **Postdoctoral Research Fellowship** awarded by National University of Singapore (NUS).

2006: **Senior Research Fellow (SRF)** awarded by CSIR, India.

2004: **BEST PAPER AWARD** in 12<sup>th</sup> National Corrosion Council of India (NCCI) entitled “Corrosion problems in fire protection system: A case study” held at Visakhapatnam (A.P), India.

### **Research activities**

#### **Ph.D. student thesis completed: 4**

1. Biocorrosive microbial communities in petroleum facilities, (P. Parthipan).
2. Microbial influenced corrosion by thermophilic bacteria in petroleum industry, (P. Elumalai)
3. Community analysis of bacterial biofilm in cooling water system and its impact on corrosion (J. Narenkumar)
4. An integrated approach of electro-oxidation and biodegradation towards remediation of textile and tannery effluents (K. Sathishkumar)

**PDF supervision (on-going): 1 (Dr. A. Selvi)**

**Ph.D. students (on-going): 3 (Mr. R.K. Sarankumar, Mr. G. Balusamy, Mr. S. Selvaraj)**

**M. Sc. research projects completed: 15, on-going: 04**

**M. Phil. research projects completed: 02.**

#### **Courses Taught**

1. Microbiology
2. Virology
3. Pharmaceutical Technology
4. Environmental Biotechnology
5. Research Methodology

### **Editorial Board Member:**

1. Recent Patents in Corrosion Science - from: 2009.
2. Frontier in Environmental Science, section Wastewater Management – from 2013.
3. European Journal of Applied Sciences and Technology (EUJAST) - from 2014.
4. Journal of Environment and Biotechnology Research- from 2015.

### **Reviewer of Journals**

**Elsevier:** Bioresource Technology, Fuel, Material Physics and Chemistry, Journal of Material Science and Technology, Journal of Petroleum Science and Engineering, Marine Pollution Bulletin.

**Taylor & Francis:** Environmental Technology, Bioremediation, Biofouling, Green chemistry letters and reviews.

**Springer:** Petroleum Science, ESPR, Biodegradation, Environmental Monitoring Assessment, 3 Biotech.

### **Reviewer of Ph.D. theses:**

Reviewed Ph.D. theses from CSIR-CECRI- Karaikudi, Madurai Kamaraj University- Madurai, Annamalai University- Chidambaram, and University of South Australia- Australia.

### **Sponsored Projects:**

1. Molecular analysis of the bacterial diversity for biocorrosion control in crude oil reservoir, **DST-SERB**, Duration: 2016-2020, Grant: **49.12 Lakhs**
2. Electrochemical behavior of barophilic and thermophilic bacteria with special reference to petroleum industry, **DBT**, Duration: 2013-2018, **82 Lakhs**.
3. Microbiological influenced corrosion behavior of aerobic/anaerobic microbial consortia with special reference to petroleum crude oil industry, **UGC**, Duration: 2015-2018, Grant: **18 Lakhs**
4. Biocorrosion behavior of thermophilic/ barophilic bacteria with special reference to petroleum industry, **DST-SERB**, Duration: 2013-2016, Grant: **11.2 Lakhs**.

## **Publications:**

1. Parthipan P, Elumalai P, Narenkumar J, Laura L. Machuca, Murugan K, Karthikeyan OP, **Rajasekar A.** Allium sativum (garlic extract) as a green corrosion inhibitor with biocidal properties for the control of MIC in carbon steel and stainless steel in oilfield environments. *International Biodeterioration & Biodegradation*, (2018)132, 2018, 66-73. **(IF: 2.9)**
2. Parthipan P, Sabarinathan D, Angaiah S, **Rajasekar A.** Glycolipid biosurfactant as an eco-friendly microbial inhibitor for the corrosion of carbon steel in vulnerable corrosive bacterial strains *Journal of Molecular Liquids*, (2018) 261, 473-479. **(IF: 3.648)**
3. Selvi A, **Rajasekar A.** statistical approach of zinc remediation using acidophilic bacterium via an integrated approach of bioleaching enhanced electrokinetic remediation (BEER) technology. *Chemosphere*, (2018), 207, 753-763. **(IF: 4.208)**
4. Murugan K, Madhavan J, Samidoss CM, Panneerselvam C, Malathi A, **Rajasekar A**, Pandiyan A, Suresh Kumar, Alarfaj A, Higuchi A, Benelli G. Bismuth Oxyiodide Nanoflakes Showed Toxicity Against the Malaria Vector *Anopheles stephensi* and In Vivo Antiplasmodial Activity. *Journal of Cluster Science* <https://doi.org/10.1007/s10876-018-1332-3>. **(IF: 1.4)**
5. Parthipana P, Elumalaia P, Ting YP., Rahmane K.S.M, Rajasekar A. Characterization of hydrocarbon degrading bacteria isolated from Indian crude oil reservoir and their influence on biocorrosion of carbon steel API 5LX. *International Biodeterioration & Biodegradation* 129 (2018) 67–80. **(IF: 2.9)**
6. Li X, Narenkumar J, **Rajasekar A**, Ting YP. Biocorrosion behaviour of mild steel and copper metals used in cooling tower water and its control. *3 Biotech* (2018) 8:178. **(IF:1.39)**

7. Sathishkumar K, Narenkumar J, Selvi A, Murugan K, Babu Janarthanam R, **Rajasekar A**. Treatment of soak liquor and bioelectricity generation in dual chamber microbial fuel cell., **Environmental Science and Pollution Research** (2018) 1-7. (IF: 2.741)
8. Narenkumar J, Parthipan P, Madhavan J, Murugan K, Marpu SB, Suresh AK, Rajasekar A (2017) Bioengineered silver nanoparticles as potent anti-corrosive inhibitor for mild steel in cooling towers, **Environmental Science and Pollution Research** [Springer], (In press) doi:10.1007/s11356-017-0768-6. (IF: 2.741)
9. Narenkumar J, Ramesh N, **Rajasekar A\*** (2017) Control of corrosive bacterial community by biocide bronopol in industrial water system. 3 Biotech. (2017) 8:55. (IF:1.39)
10. Narenkumar J, Sathishkumar K, Selvi A, Gobinath R, Murugan K, **Rajasekar A\*** (2017) Role of calcium depositing bacteria *Agrobacterium tumefaciens* and its influence on corrosion of different engineering metals used in cooling water system. 3 Biotech, 7:374 [Springer], (IF:1.39)
11. Parthipan P, Sarankumar RK, Jaganathan A, Amuthavalli P, Babujanarthanam R, Rahman PKSM, Murugan K, Higuchi A, Benelli G, **Rajasekar A\*** (2017) Biosurfactants produced by *Bacillus subtilis* A1 and *Pseudomonas stutzeri* NA3 reduce longevity and fecundity of *Anopheles stephensi* and showed high toxicity against young instars, **Environmental Science and Pollution Research**, [Springer], (In Press) doi:10.1007/s11356-017-0105-0. (IF: 2.741)
12. Murugan K, Dinesh D, Nataraj D, Subramaniam J, Amuthavalli P, Madhavan J, **Rajasekar A**, Rajan M, Thiruppathi KP, Kumar S, Higuchi A, Nicoletti M, Benelli G (2017) Iron and iron oxide nanoparticles are highly toxic to *Culex quinquefasciatus* with little non-target effects on larvivorous fishes. Environ Sci Pollut Res [Springer], (In Press) doi:10.1007/s11356-017-0313-7 (IF: 2.741)
13. Murugan K, Suresh U, Panneerselvam C, Rajaganesh R, Roni M, Aziz A, Hwang JS, Sathishkumar K, **Rajasekar A**, Kumar S, Alarfaj AA, Higuchi A, Benelli G (2017), Managing wastes as green resources: cigarette butt-synthesized pesticides are highly toxic to malaria vectors with little impact on predatory copepods, **Environmental Science and Pollution Research**, [Springer], doi: 10.1007/s11356-017-0074-3. (IF: 2.741)

14. Narenkumar J, Sathishkumar K, Sarankumar RK, Murugan K, **Rajasekar A\*** (2017), An anticorrosive study on potential bioactive compound produced by *Pseudomonas aeruginosa* TBH2 against the biocorrosive bacterial biofilm on copper metal, **Journal of Molecular Liquids**, [Elsevier], doi.org/10.1016/j.molliq.2017.08.075. (IF: 3.648).
15. Sathishkumar K, Narenkumar J, Madhavan J, Murugan K, **Rajasekar A\*** (2017) Electrochemical decolorization and biodegradation of tannery effluent for reduction of chemical oxygen demand and hexavalent chromium, **Journal of Water Process Engineering**, [Elsevier], Doi: org/10.1016/j.jwpe.2017.09.008.
16. Parthipan P, Narenkumar J, Elumalai P, Preethi PS, Nanthini AUR, Agrawal A and **Rajasekar A\*** (2017) Neem extract as a inhibitor for microbiologically influenced corrosion of carbon steel API 5LX in a hypersaline environments, **Journal of Molecular Liquids**, [Elsevier] 240, 121–127. doi.org/10.1016/j.molliq.2017.05.059. (IF: 3.648)
17. Sathishkumar K, Sathiyaraj S, Parthipan P, Akhil A, Murugan K and **Rajasekar A\*** (2017) Electrochemical decolorization of methyl red by RuO<sub>2</sub>-IrO<sub>2</sub>-TiO<sub>2</sub> electrode and biodegradation with *Pseudomonas stutzeri* MN1 and *Acinetobacter baumannii* MN3: An integrated approach, **Chemosphere**, [Elsevier] 183, 204-211. doi.org/10.1016/j.chemosphere.2017.05.087. (IF: 4.2)
18. Parthipan P, Preetham E, Machuca LL, Rahman PKSM, Murugan K and **Rajasekar A\*** (2017) Biosurfactant and degradative enzymes mediated crude oil degradation by bacterium *Bacillus subtilis* A1. **Frontiers in Microbiology**, [Frontiers] 2017, 8:193. doi: 10.3389/fmicb.2017.00193. (IF: 4.076)
19. Sujitha V, Murugan K, Dinesh D, Pandiyan A, **Aruliah R**, Hwang J, Kalimuthu K, Panneerselvam C, Higuchi A, Aziz A, Kumar S, Alarfaj AA, Vaseeharan B, Canale A and Benelli G (2017) Green-synthesized CdS nano-pesticides: toxicity on young instars of malaria vectors and impact on enzymatic activities of the non-target mud crab *Scylla serrata*. **Aquatic Toxicology**, [Elsevier] http://dx.doi.org/10.1016/j.aquatox.2017.04.015 (IF: 4.129)
20. Murugan K, Samidoss CM, Theerthagiri J, Panneerselvam C, Madhavan J, **Rajasekar A**, Canale A and Benelli G (2017) Solution combustion synthesis of hierarchically structured V<sub>2</sub>O<sub>5</sub> nanoflakes: efficacy against *Plasmodium falciparum*, *Plasmodium berghei* and the malaria vector *Anopheles stephensi*. **Journal of Cluster Sciences**, [Springer] doi 10.1007/s10876-017-1228-7 (IF: 1.471).

21. Parthipan P, Elumalai P, Sathishkumar K, Sabarinathan D, Murugan K, Benelli G and **Rajasekar A\*** (2017) Impact of different carbon and nitrogen sources on the effectiveness of bio-surfactant and laccase-producing *Pseudomonas stutzeri* NA3 and *Acinetobacter baumannii* MN3 in degrading of crude oil. **3 Biotech**, [Springer] In press (IF: 1.36).
22. Parthipan P, Ganesh Babu T, Anandkumar B and **Rajasekar A\*** (2017) Biocorrosion and its impact on carbon steel API 5LX by *Bacillus subtilis* A1 and *Bacillus cereus* A4 isolated from crude oil reservoir. India. **Journal of Bio- and Tribo-Corrosion**, [Springer] 3:32 doi: 10.1007/s40735-017-0091-2.
23. Elumalai P, Parthipan P, Karthikeyan OP and **Rajasekar A\*** (2017) Enzyme mediated biodegradation of long-chain n-alkanes (C32 and C40) by thermophilic bacteria. **3 Biotech**, [Springer] 7:116, doi: 10.1007/s13205-017-0773-y. (IF: 1.36).
24. Narenkumar J, Parthipan P, Nanthini AUR, Benelli G, Murugan K and **Rajasekar A\*** (2017) Ginger extract as green biocide to control microbial corrosion of mild steel. **3 Biotech**, [Springer] doi: 10.1007/s13205-017-0783-9. (IF: 1.36).
25. Murugan K, Roni M, Panneerselvam C, Aziz AT, Suresh U, Rajaganesh R, **Aruliah R**, Mahyoub JA, Trivedi S, Rehman H, Naji Al-Aoh HA, Kumar S, Higuchi A, Vaseeharan B, Wei H, Senthil-Nathan S, Canale A, Benelli G (2017) Sargassum wightii-synthesized ZnO nanoparticles reduce the fitness and reproduction of the malaria vector *Anopheles stephensi* and cotton bollworm *Helicoverpa armigera*, **Physiological and Molecular Plant Pathology**, [Elsevier] doi: 10.1016/j.pmpp.2017.02.004. (IF: 1.139)
26. **Rajasekar A\***, Xiao W, Sethuraman M, Parthipan P and Elumalai P (2017) Airborne microorganisms associated with corrosion of structural engineering materials. **Environmental Science and Pollution Research**, [Springer] 2017, doi: 10.1007/s11356-017-8501-z. (IF: 2.74)
27. Sathishkumar K, Manivannan S, Murugan K and **Rajasekar A\*** (2017) Biodecolourization of textile dyes by novel, indigenous *Pseudomonas stutzeri* L1 and *Acinetobacter baumannii* L2. **Journal of Environmental Chemical Engineering**, [Elsevier] 5, 716-724. doi:10.1016/j.jece.2016.12.021
28. Parthipan P, Elumalai P, Karthikeyan OP, Ting YP and **Rajasekar A** (2017) A review on biodegradation of hydrocarbon and their influence on corrosion of carbon steel with special reference to petroleum industry. **Journal of Environment and Biotechnology Research**, (2017) 6(1), 12-33.



29. Banupriya C, Srinivasan K, **Rajasekar A**, Murugan K, Giovanni B and Dinakaran K (2017) Organic-inorganic hybrid fluorescent sensor thin films of rhodamine B embedded AgSBA15 for selective recognition of Hg (II) ions in water. **Chinese Chemical Letters**, [Elsevier] In Press. doi:10.1016/j.ccllet.2017.01.018 (IF: 1.93)
30. Sathishkumar K, Murugan K, Benelli G, Higuchi A and **Rajasekar A\*** (2016) Bioreduction of hexavalent chromium by *Pseudomonas stutzeri* L1 and *Acinetobacter baumannii* L2. **Annals of Microbiology**, [Springer] doi:10.1007/s13213-016-1240-4 (IF: 1.1)
31. Govarthanan M, Mythili R, Selvankumar T, Kamala-Kannan S, **Rajasekar A** and Chang YC (2016) Bioremediation of heavy metals using an endophytic bacterium *Paenibacillus* sp. RM isolated from the roots of *Tridax procumbens*. **3 Biotech**, [Springer] 6:242 (IF:1.36)
32. Narenkumar J, Madhavan J, Nicoletti M, Benelli G, Murugan K and **Rajasekar A\*** (2016) Role of bacterial plasmid on biofilm formation and its influence on corrosion of engineering materials. **J Bio Tribo Corros**, [Springer] (2016) 2:24 doi:10.1007/s40735-016-0054-z.
33. Wadood HZ, **Rajasekar A**, Ting YP and Sabari AN (2015) Role of *Bacillus subtilis* and *Pseudomonas aeruginosa* on Corrosion Behaviour of Stainless Steel. **Arabian Journal of Science and Engineering**, [Springer] 40, 1825-1836. (IF: 0.865).
34. Karthikeyan OP, **Rajasekar A** and Balasubramanian R (2015) Bio-oxidation and bio-cyanidation of refractory mineral ores for gold extraction: A review. **Critical Reviews in Environmental Science and Technology**, 45, 1611-1643. [Taylor & Francis] (IF: 5.79).
35. **Rajasekar A\*** and Ting YP (2014) Characterization of corrosive bacterial consortia isolated from water in a cooling tower. **ISRN Corrosion**, Article ID 803219, 11pages [Hindawi Publishing Corporation].
36. Sethurajan M, **Rajasekar A**, Karthikeyan OP and Balasubramanian R (2012) Bioremediation of copper from black shale ore using mesophilic mixed populations in an Airup-lift Bioreactor. **Environmental Engineering and Management Journal**, 11, 1839-1848. [Gheorghe Asachi" Technical University of Iasi, Romania] (IF: 1.4).
37. Balasubramanian R, Nainar P and **Rajasekar A** (2012) Airborne bacteria, fungi, and endotoxin levels in residential microenvironments: a case study, **Aerobiologia**, 28, 375–390 [Springer] (IF: 2.202).
38. **Rajasekar A\***, Balasubramanian A and Kumar JVM (2011) Role of hydrocarbon degrading bacteria *Serratia marcescens* ACE2 and *Bacillus cereus* ACE4 on corrosion of

- carbon steel API 5LX. **Industrial Engineering Chemistry & Research**, 50, 10041–10046 [ACS] (IF: 2.843).
39. **Rajasekar A** and Ting YP (2011) Role of inorganic and organic medium in the corrosion behavior of *Bacillus megaterium* and *Pseudomonas* sp. in stainless steel SS 304. **Industrial Engineering Chemistry & Research**, 50 (22), pp 12534–1254 [ACS] (IF: 2.843).
  40. **Rajasekar A** and Ting YP (2011) Inhibition of biocorrosion of aluminium 2024 aeronautical alloy by ladder conductive polymer poly (*o*-phenylenediamine). **Industrial Engineering Chemistry & Research**, 50, 2040–2046 [ACS] (IF: 2.843).
  41. Harimawan A, **Rajasekar A** and Ting YP (2011) Bacteria attachment to surfaces - AFM force spectroscopy and physicochemical analyses. **Journal of Colloid and Interface Science**, 364, 213–218 [Elsevier] (IF: 4.233).
  42. **Rajasekar** and R.Balasubramanian, Assessment of airborne bacteria and fungi in food courts. **Building and Environment**, (Elsevier) 2011, 46, 2081-2087. (IF: 4.053)
  43. **Rajasekar A** and Ting YP (2010) Microbial corrosion of aluminum 2024 aeronautical alloy by hydrocarbon degrading bacteria *Bacillus cereus* ACE4 and *Serratia marcescens* ACE2. **Industrial Engineering Chemistry & Research**, 49(13) 6054 – 6066[ACS] (IF: 2.843).
  44. **Rajasekar A**, Anandkumar B, Maruthamuthu S, Ting YP and Rahman PKSM (2010) Characterization of corrosive bacterial consortia isolated from petroleum product transporting pipelines. **Applied Microbiology and Biotechnology**, 85 1175-1188 [Springer] (IF: 3.42).
  45. Anandkumar B, **Rajasekar A**, Venkatachari G and Maruthamuthu S (2009) Effect of thermophilic sulphate-reducing bacteria (*Desulfotomaculum geothermicum*) isolated from Indian petroleum refinery on the corrosion of mild steel. **Current Science**, 97(3), 342-349 [Indian Academy of Science, IISc, Bangalore] (IF: 0.843).
  46. **Rajasekar A\***, Maruthamuthu S and Ting YP (2008) Electrochemical behavior of *Serratia marcescens* ACE2 on carbon steel API5-LX-60 in organic-aqueous phase. **Industrial Engineering Chemistry & Research**, 47, 6925-6932 [ACS] (IF: 2.843).
  47. **Rajasekar A**, Ganesh Babu T, Karutha Pandian S, Maruthamuth S, Palaniswamy N and Rajendran A (2007) Biodegradation and corrosion behaviour of *Bacillus cereus* ACE4 in diesel transporting pipeline. **Corrosion Science**, 49. 2694-2710 [Elsevier] (IF: 5.245).
  48. **Rajasekar A\***, Ganesh Babu T, Karutha Pandian S, Maruthamuth S, Palaniswamy N and Rajendran A (2007) Role of *Serratia marcescens* on diesel degradation and its influence on

- corrosion. **Journal of Industrial Microbiology and Biotechnology**, 34, 589-598. [Springer] (IF: 2.81).
49. **Rajasekar A**, Maruthamuthu S, Palaniswamy N and Rajendran A (2007) Role of corrosion inhibitor degradation and its influence on corrosion, **Microbiological Research**, 162, 355-368. [Elsevier] (IF: 3.037).
50. **Rajasekar A\***, Ganesh Babu T, Maruthamuthu S, Karutha Pandian S, Mohanan S and Palaniswamy N (2007) Biodegradation and corrosion behavior of *Serratia marcescens* ACE2 isolated from Indian diesel transporting pipeline. **World Journal of Microbiology & Biotechnology**, 23,1065-1074. [Springer] (IF: 1.658).
51. **Rajasekar A\***, Ponmariappan S, Maruthamuthu S and Palaniswamy N (2007) Bacterial degradation and corrosion of naphtha in transporting pipeline. **Current Microbiology**, 55, 374-381. [Springer] (IF: 1.322).
52. **Rajasekar A** Mohanan S, Maruthamuthu S, Muthukumar N and Palaniswamy N (2007) Biodegradation of palmarosa oil (green oil) by *Serratia marcescens*, **International Journal of Environmental Science and Technology**, 4 (2), 277-281 [Springer] (IF: 1.915).
53. Rajasekar A, Rajendran L, Maruthamuthu S Palaniswamy N and Rajendran A (2006) prediction of corrosion rate of steel AP5LX using curve fitting method. **Zaštita materijala (Material Protection)**, 47 (4), 47 -50 (IF: 2.2).
54. Ramesh babu, **Rajasekar A**, Maruthamuthu S, Muthukumar N and Palaniswamy N (2006) Microbiologically influenced corrosion in dairy effluent plant, **International Journal of Environmental Science and Technology**, 3(2), 159-166 [Springer] (IF: 1.915).
55. **Rajasekar A**, Maruthamuthu S, Muthukumar N, Mohanan S, Subramanian P and Palaniswamy N (2005) Bacterial degradation of naphtha and its influence on corrosion. **Corrosion Science**, 47, 257 -271. [Elsevier] (IF: 5.245).
56. Mohanan S, **Rajasekar A**, Muthukumar N, Maruthamuthu S and Palaniswamy N (2005) Role of fungi on diesel degradation and its influence on corrosion of API 5LX, **Corrosion Prevention and Control** , 52 (4), 123-130 [Maney] (IF: 0.5).
57. **Rajasekar A**, Maruthamuthu S, Sathiyarayanan S, Muthukumar N and Palaniswamy N (2005) Electrochemical behaviour of microbes on orthodontic wires. **Current Science**, 89(6), 988-996 [Indian Academy of Science, IISc, Bangalore] (IF: 0.843).
58. Maruthamuthu S, Mohanan S, **Rajasekar A**, Muthukumar N, Ponmarriappan S, Subramanian P and Palaniswamy N (2005) Role of corrosion inhibitors on bacterial corrosion in petroleum product pipeline. **Indian Journal of Chemical Technology**, 12 (5), 567-575 [CSIR publication] (IF: 0.568).

59. Muthukumar N, **Rajasekar A**, Maruthamuthu S, Mohanan S, Ponmarriapan S and Palaniswamy N (2003) Microbiologically influenced corrosion in petroleum product pipelines- A review. **Indian Journal of Experimental Biology**, 41, 1012-1022 [CSIR publication] (**IF: 1.16**).
60. Maruthamuthu S, **Rajasekar A**, Muthukumar N, Deepa LC and Palaniswamy N (2003) Anodic behaviour of biofilm on SS316. **Journal of Electrochemical Society of India**, 52 (4), 140-144 (Indian Academy of Science, IISc, Bangalore).

**\* Corresponding author**

#### **Books/Chapter Published:**

1. **Rajasekar A** (2017) Biodegradation of petroleum hydrocarbon and its influence on corrosion with special reference to petroleum industry. In Biodegradation and Bioconversion of Hydrocarbons, K. Heimann et al. (eds.), Springer, pp 307-336. Doi: 10.1007/978-981-10-0201-4\_9.
2. **Rajasekar A**, Maruthamuthu S, Ting YP, Balasubramanian R and Rahman PKSM (2012) Bacterial degradation of petroleum hydrocarbons in microbial degradation of xenobiotics (Environmental Science and Engineering), Editor Singh, Shree Nath, 339-369 [Springer] ISBN 978-3-642-23789-8.

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**Total Citations: 836; h-index: 17; i10-index: 21; (Source: Google Scholar)-updated 09-04-2018.**

#### **Invited Lectures/participation in conferences:**

1. J. Narenkumar and A. Rajasekar (2015) Microbial Corrosion Control in Cooling Water System Presented in International Conference on Recent Advances in Synthetic Biology, Bishop Heber College, Tiruchirapalli,
2. A. Rajasekar (2015) Role of Extracellular Polymeric Substances Produced by Mesophilic Bacteria on Corrosion of API 5LX Carbon Steel presented in National Conference on Recent Advances in Industrial Biotechnological Skills Development organized by Department of Botany, Thiagarajar College, Madurai, 30-31<sup>st</sup> March 2015.
3. P. Parthipan and A. Rajasekar (2015) Characterization of mesophilic hydrocarbon degrading bacteria in Indian crude oil reservoir presented in National Symposium on “

Recent Advances in Biomedical Sciences” Thiruvalluvar University, Vellore, 26-27<sup>th</sup> February 2015.

4. P. Parthipan and A. Rajasekar (2014) Biodegradation of crude oil by mesophilic bacteria and its influence on corrosion Presented in National Conference on Global Trends and Challenges in Biosciences organized by IAAM & Dr, MGR Janaki College of Arts And Science for Women, Chennai, 5-6<sup>th</sup> December 2014
5. A. Rajasekar (2013) Characterization of corrosive bacterial consortia isolated from cooling tower Presented in National Symposium on Glimpse of Innovations in Biotechnology Organized by Biogalaxia, Bharathiyar University, Coimbatore, 3<sup>rd</sup> October 2013
6. O. P. Karthikeyan, B. Raghu, A. Rajasekar, S. Manivannan and R. Balasubramanian (2012). “Microwave-Assisted Pre-Treatment of Black Shale for Removal of Carbonaceous Matter”. Accepted for oral presentation in the International Conference on Environmental Science and Technology 2012 (ICEST, 2012), Houston, USA, June 25-29, 2012.
7. S. Manivannan, A. Rajasekar, O.P.Karthikeyan and R.Balasubramanian (2012). “Bioleaching of copper from black shale ore using mesophilic mixed populations in an Air Up-lift Bioreactor”. Abstract submitted for the International conference on Environmental Microbiology and Biotechnology (EMB 2012), Bologna, Italy, April 10-12, 2012.
8. A. Rajasekar, C.J. Hsien and R. Balasubramanian (2011). “Bioleaching of metals (Cu, Fe and Ag) from chalcopyrite ore by Acidiphile group of bacteria”. IV International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld2011), Torremolinos (Spain), 14-16 September 2011 (Page No. 98)
9. O. P. Karthikeyan, A. Rajasekar, S. Manivannan and Rajasekhar Balasubramanian (2011). “Bioleaching of precious metals from low-grade copper ores using mixed consortium in air-uplift bioreactors: performance evaluation under single and two stage configurations”. IV International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld2011), Torremolinos (Spain), 14-16 September 2011 (Page No. 295).
10. A. Rajasekar, O. P. Karthikeyan, S. Manivannan and Rajasekhar Balasubramanian (2011). “Comparative Evaluation of Two Bioreactors for Bioleaching of Cu, Fe and Ag from chalcopyrite by *Leptospirillum ferrooxidans*”. IV International Conference on

Environmental, Industrial and Applied Microbiology (BioMicroWorld2011), Torremolinos (Spain), 14-16 September 2011 (Poster Presentation, Page No. 104)

11. R. Balasubramanian, A. Rajasekar, O.P. Karthikeyan, A.Szubert, A Grotowski, J.D. Lease (2011). "Bioremediation of precious metals from mineral ores: current challenges and future prospects". Presented in International conference, Poland, October 26-29, 2011
12. A. Rajasekar, N. Muthukumar, V. Raju, P. Subramanian, S. Muralidharan, S. Mohanan, S. Maruthamuthu and N. Palaniswamy (2004) Corrosion problems in fire protection system: A case study presented in 12<sup>th</sup> National Corrosion Council of India (NCCI) Visakhapatnam (A.P)

### **Chairing of Conference/Symposia sessions:**

1. Chaired a Session on "Biodegradation of petroleum hydrocarbons and its influence on corrosion with special reference to petroleum industry" in National Seminar on "Recent Advances in Plant Sciences (RAPS-2015)" P.V.K.N Govt. College, Chittoor, Andhara Pradesh.
2. Chaired a Session on "The Bioremediation of hydrocarbon and influence on corrosion in crude oil reservoir" in State level conferences on "Emerging Trends in Biological and Environmental Sciences", KMG College of Arts and Science, Vellore, Tamilnadu on 10.09.2015
3. Chaired a Session on "Bacterial degradation of hydrocarbon and its role on corrosion with special reference to petroleum industry" in International conference on "Converging Biotechnological Innovations for Health, Food and Environmental welfare- ICCBI-2015", Karunya University, Coimbatore, Tamilnadu 2-4<sup>th</sup> December 2015
4. Chaired a Session on "Biodegradation of Petroleum Hydrocarbon Degradation and its Influence on Corrosion with Special Reference to Petroleum Industry" in NATIONAL SEMINAR on "India A Hot Spot of Environmental Challenges and Need of the Multidisciplinary Approach to Solve the Environmental Issues" (IEMA EI-2015), P.V.K.N Govt. College, Chittoor, Andhara Pradesh 15<sup>th</sup>-16<sup>th</sup> December 2015
5. Chaired a Session on "Impact of Hydrocarbon Pollution with Special reference to Petroleum Industry" in One day value added programme on "Effect of pollution on natural resources and environmental Impact Assessment" -NREIA-2016, VIT University Vellore, Tamilnadu 30<sup>th</sup> April 2016

6. Given a Guest lecture in Karpaga Vinayaga College of Engineering & Technology- Madhuranthakam.

**Seminar/Symposium/Conference conducted or organized:**

1. Two days national symposium organized on “Recent Advances in Biomedical Technology” by Department of Biotechnology, Thiruvalluvar University, Vellore, 26-27<sup>th</sup> February 2015
2. Three days International symposium organized as member on “Recent Advances in Bioresource Technology” by Department of Biotechnology, Thiruvalluvar University, Vellore, 15-17<sup>th</sup> February 2017

**Administrative and other Extra Activities:**

- Placement Co-ordinator in Thiruvalluvar University, Vellore.
- Worked as Invigilator for writing and skill test for non-teaching posting in Thiruvalluvar University, Vellore.
- Conducted the Practical exam as external examiner for various University Departments and colleges.
- Worked as question paper setter for microbiology courses for Bharathidasan University, Trichirapalli and Manonmaniam Sundaranar University, Tirunelveli.
- Doctoral committee member for Ph.D students of Sathyabama University- Chennai, SRM University-Kattankulathur and VIT University- Vellore

**Countries visited:**

Singapore, Malaysia, Spain, China, Italy, Poland, Indonesia and Thailand.