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Graduation Details

Degree	**Year**	**Institution**	**Board**	**Percentage / CGPA**
Ph.D. (Biotechnology)	2004-2008	Department of Biotechnology, Bharathiar University.	Bharathiar University, Coimbatore, Tamil Nadu	Thesis Highly commended
M.Sc., (Industrial Biotechnology)	2001-2003	Department of Biotechnology, Bharathiar University.	Bharathiar University, Coimbatore, Tamil Nadu	78.38% / 5.72
B.Sc., (Microbiology)	1998-2001	Sengunthar Arts and Science College, Tiruchengode, Namakkal District.	Periyar University, Salem, Tamil Nadu.	82.2%
Higher Secondary	1996-1998	Govt. Hr. Sec. School, Komarapalayam, Namakkal District.	Board of Examinations, Tamil Nadu.	89%
S.S.L.C	1995-1996	Govt. Hr. Sec. School,	Board of Examinations,	85.8%

		Komarapalayam, Namakkal District.	Tamil Nadu.	
Typewriting - English - Senior Grade	1997		Department of Technical Education, Tamil Nadu	Pass with first class
Typewriting - Tamil - Senior Grade	1999		Department of Technical Education, Tamil Nadu	Pass with first class

Awards and Honors

1. Passed in **SET** (STATE ELIGIBILITY TEST) for Lectureship in Tamil Nadu and Pondicherry (March, 2006).
2. University Second Rank – M.Sc. Industrial Biotechnology (2001 – 2003), Bharathiar University, Tamil Nadu, India.
3. University First Rank – B.Sc. Microbiology (1998 – 2001), Periyar University, Salem, Tamil Nadu.
4. Certified E-Waste Management Specialist – Award given by Computer Society of India, Education Directorate, Chennai.
5. Mahatma Gandhi Gold Medal Award (October, 2014) – Award given by Global Economic Progress and Research Association (GEPRA), Tiruvannamalai, Tamil Nadu, India.
6. Member in AOAC SPSFAM (Stakeholder Panel on Strategic Food Analytical Methods) Kombucha Expert Review Panel (August, 2016)
7. Given interview on Kombucha to "Food-Non Fiction", June 2018, https://foodnonfiction.com/episodes/item/26-68-kombucha-tea-of-immortality
8. Given interview to eenaduindia.com: 10th Feb 2019: http://m.bangla.eenaduindia.com/News/odia-news/2019/02/09235445/Now-curd-can-reduce-Blood-pressure.vpf?fbclid=IwAR0cC3ohyMNEaucCxvF3mJdiOiHxUoI1ctgnNg4NTSlVsk6aNfwjdu1GQmk :

Courses / Skills completed

1. CITI Basic Course for Human Subjects Research, July, 2015.
2. Zumba Basic-1 Instructor Training Course, July 2015 (License not valid now).
3. Functional Foods: Concept, Technology and Health Benefits. Online course in agMOOCs. Completion with Distinction, Nov 2018
4. Good Clinical Practice, NIDA Clinical Coordinating Center, Oct 2018 to Oct 2021. NIDA Clinical Trials Network

Projects Completed

Short term Project : Estimation of Aflatoxins by chromatographic techniques

and detection of aflatoxigenic fungi by molecular biological techniques (May-June, 2002, CFTRI, Mysore, Karnataka, India).

M.Sc. Thesis : Metabolic activity of Tea fungus (Kombucha) on tea components (December 2002 –April 2003, R & D Centre, Parry Agro Industries Ltd., Valparai, Tamil Nadu, India)

Ph.D. Thesis : Effect of kombucha fermentation on biochemical constituents and therapeutic properties of tea (April 2004 – May 2008, Dept. of Biotechnology, Bharathiar University, Coimbatore, Tamil Nadu, India)

Summary of the work: Kombucha tea is sugared black tea fermented with tea fungus for about 14 days. Tea fungus is an excellent example for biofilm in which bacteria and yeasts are in symbiotic association. Kombucha tea is claimed to have various beneficial effects on human health but very less scientific evidences are available in the literature. The present study revealed that TF and TR were relatively stable than epicatechin isomers during fermentation. Kombucha tea prepared from green tea, black tea and tea waste material had excellent free radical scavenging activities. Pretreatment with plain black tea and kombucha black tea attenuated aflatoxin B_1 induced hepatic injury. Among the two, kombucha black tea was more effective. Kombucha tea pretreatment can enhance hepatic GSH antioxidant / detoxification system. Ethyl acetate extract of kombucha black tea at 100 µg/mL concentration showed good inhibitory effect on viability of 786-O and U2OS cells. It also reduced the activity of MMP-2 and MMP-9 in 786-O and A549 cells. Heat treatment (60, 65 and 68°C for 1 minute) was found to be efficient in controlling the tea fungal mat formation during storage and heat treated kombucha black tea can be stored for 30 days. Inclusion of dried tea fungal mat in place of ground nut cake in rabbit feed increased the LDL, performance and slaughter characteristics of rabbit.

Sponsored Research Projects

Title of the Project	**Funding Agency (Scheme)**	**Amount (Rs.)**	**Status of the Project (Registration No.)**	**Role**
Biosynthesis of biologically active and enzymatically	Department of Biotechnology, Ministry of Science and	INR 16.58 lakhs	2012 to 2017. Completed (102/IFD/SAN/2770/2013-2014)	Principal Investigator

resistant Oligosaccharide-Ferulic acid conjugate (a prodrug to target colo-rectal cancer) in microemulsion system	Technology, Government of India (Rapid Grant for Young Investigators 2012)			
Utilization of mushroom extracts as prebiotic sources to develop synbiotic microcapsules	Science and Engineering Research Board (SERB), Department of Science and Technology, Government of India (Fast Track Scheme for Young Scientists)	INR 24.9 lakhs	2013 to 2017. Completed (SERC/LS-156/2012)	Principal Investigator
Development of Capacitive Deionization Technology for Point-of-Use Water Purification	IC-IMPACTS (India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability)	$301,000 (Canadian Dollars)	Ongoing (https://ic-impacts.com/research-project/development-of-capacitive-deionization-technology-for-point-of-use-water-purification/)	Indian Academic Partner
Investigation on seaweed based synbiotic Formulation for combating malnutrition in Sundargarh District of Odisha	DST (Women Scientist Scheme –B), Government of India	INR 20.4 Lakhs	Ongoing	Mentor
Development of Effluent-free Food Processing Operations using	IMPRINT-2 (DST, Govt. of India)	INR 41 lakhs	Sanctioned	Co-Principal Investigator

Non Ionizing Electromagnetic Radiations				
Drop-in compostable kitchen trash bags from waste tea fungus cellulose	BIG (Biotechnology Ignition Grant), BIRAC, DBT, Govt. of India	INR 49.69 lakhs	Sanctioned	Principal Investigator (Team Leader)

Consultancy Services

Title of the Project	**Company / Organization**	**Period**
Large scale production of kombucha in bioreactors	Nortem Biotechnology, Cadiz, Spain	6th Dec to 28th Dec, 2016

PhD guided

S.No.	**Name of the student (Roll No.)**	**Thesis Title**	**Month of thesis submission and viva-voce**
1	Indira Dash (511LS109)	Partial characterization of halotolerant microbial cellulases and their application in bioethanol production using seawater system	Nov 2017 Thesis Submitted
2	Moumita Sahoo (512LS1007)	Development of synbiotic functional food using potential probiotic isolates with soymilk and mushroom extracts as prebiotics	10 July 2018 defense completed

Research Papers Published in International Journals

1. **R. Jayabalan**, S. Marimuthu and K. Swaminathan. 2007 (May). Changes in content of organic acid and tea polyphenols during Kombucha tea fermentation. Food Chemistry 102 (1): 392 – 398 (IF: 4.946 SCI).
2. **R. Jayabalan**, P. Subathradevi, S. Marimuthu, M. Sathishkumar and K. Swaminathan. 2008. Changes in free-radical scavenging ability of kombucha tea during fermentation. Food Chemistry 109: 227-234b (IF: 4.946 SCI).
3. **Rasu Jayabalan**, Subbaiya Marimuthu, Periyasamy Thangaraj, Muthuswamy Sathishkumar, Arthurraj Binupriya, Krishnaswami Swaminathan, Sei Eok Yun. 2008. Preservation of Kombucha Tea - Effect of Temperature on Tea Components

and Free Radical Scavenging Properties. Journal of Agricultural and Food Chemistry 56: 9064-9071 (IF: 2.912 SCI).

4. **R. Jayabalan**, K. Malini, S.E. Yun. 2010. Biochemical characteristics of tea fungus produced during kombucha fermentation. Journal of Food Science and Biotechnology 19(3): 201-205 (IF: 0.653 SCI-E).
5. **R. Jayabalan**, S. Baskaran, S. Marimuthu, K. Swaminathan, and S.E. Yun. 2010. Effect of kombucha tea on aflatoxin B_1 induced acute hepatotoxicity in albino rats – prophylactic and curative studies. Journal of Korean Society of Applied Biological Chemistry 53(4): 407-416 (IF: 0.690 SCI-E).
6. **R. Jayabalan,** M. Sathishkumar, E.S. Jeong, S.P. Mun, S.E. Yun. 2012. Immobilization of flavin adenine dinucleotide (FAD) onto carbon cloth and its application as working electrode in an electroenzymatic bioreactor. Bioresource Technology, 123: 686-689 (IF: 4.494 SCI).
7. **Rasu Jayabalan**, Radomir V. Malbaša, Eva S. Loncar, Jasmina S. Vitas, Muthuswamy Sathishkumar. A Review on Kombucha Tea – Microbiology, Composition, Fermentation, Beneficial Effects, Toxicity and Tea Fungus. Comprehensive Reviews in Food Science and Food Safety, 103 (2014) 538-550 (IF: 5.9 SCI, **DOI:** 10.1111/1541-4337.12073
8. A.R. Binupriya, M. Sathishkumar, D. Kavitha, **R. Jayabalan**, K. Swaminathan and S.E. Yun. 2007. Liquid-phase separation of reactive dye by wood-rotting fungus: A biotechnological approach. Biotechnology Journal 2 (8): 1014-1025 (IF: 3.49 SCI-E).
9. N. Chitrapriya, V. Mahalingam, M. Zeller, **R. Jayabalan**, K. Swaminathan and K. Natarajan. 2008. Synthesis, crystal structure and biological activities of dehydroacetic acid complexes of Ru (II) and Ru (III) containing PPh_3/$AsPh_3$. Polyhedron 27 (3): 939-946 (IF: 2.011 SCI).
10. M. Sathishkumar, A.R. Binupriya, D. Kavitha, R. Selvakumar, **R. Jayabalan**, J.G. Choi, S.E. Yun. 2009. Adsorption potential of maize cob carbon for 2,4-dichlorophenol removal from aqueous solutions: Equilibrium, kinetics and thermodynamics modeling. Chemical Engineering Journal 147: 265–271 (IF: 4.321 SCI).
11. G.S. Murugesan, M. Sathishkumar, **R. Jayabalan**, A.R. Binupriya, K. Swaminathan and S.E. Yun. 2009. Hepatoprotective and curative properties of kombucha tea against carbon tetrachloride induced toxicity – Journal of Microbiology and Biotechnology 19(4): 397–402 (IF: 1.525 SCI-E)
12. S. Madhavakrishnan, M. Sathishkumar, A.R. Binupriya, J.G. Choi, **R. Jayabalan**, K. Manickavasagam, S. Pattabi. 2010. *Ricinus communis* pericarp activated carbon as an adsorbent for the removal of Pb(II) from aqueous solution and industrial wastewater Environment Protection Engineering 36(1): 83-94 (IF: 0.652 SCI-E).
13. M. Sathishkumar, **R. Jayabalan**, S.P. Mun and S.E. Yun. 2010. Role of bicontinuous microemulsion in the rapid enzymatic hydrolysis of (*R,S*)-Ketoprofen ethyl ester in a micro-reactor. Bioresource Technology 101: 7834-7840 (IF: 4.494 SCI).
14. Eun-Seon Jeong, Muthuswamy Sathishkumar, **Rasu Jayabalan**, Su-Hyeon Jeong, Song-Yie Park, Sung-Phil Mun, Sei-Eok Yun. 2012. Immobilization of a mediator onto carbon cloth electrode and employment of the modified electrode to an electroenzymatic bioreactor. Journal of Microbiology and Biotechnology, 22(10), 1409-1414. (IF: 1.525 SCI-E).

15. Debabrat Sabat, Eldin M Johnson, Arra Abhinay, **Rasu Jayabalan**, Monalisa Mishra. 2015. A Protocol to generate germ free *Drosophila* for microbial interaction studies. Advanced Techniques in Biology & Medicine S1: 001. doi: 10.4172/2379-1764.S1-001 (IF: 1.08).
16. Dash Indira, D. Sharmila, P. Balasubramanian, A. Thirugnanam, **R. Jayabalan**. 2016. Utilization of sea water based media for the production and characterization of cellulase by *Fusarium subglutinans* MTCC 11891. Biocatalysis and Agricultural Biotechnology, 7:187–192, https://doi.org/10.1016/j.bcab.2016.06.006
17. Bhaskar Das, Md. Imran Khan, **R. Jayabalan**, Susanta K. Behera, Soon-II Yun, Suraj K Tripathy, Amrita Mishra. 2016. Understanding the Antifungal Mechanism of Ag@ZnO Core-shell Nanocomposites against *Candida krusei*. Scientif Reports, 6, Article No. 36403 (doi:10.1038/srep36403) (IF 4.259, SCI).
18. Chandni Kumari, Bhaskar Das, **R Jayabalan**, Robin Davis, Pradip Sarkar, 2017. Effect of Nonureolytic Bacteria on Engineering Properties of Cement Mortar. Journal of Materials in Civil Engineering, 29(6): 06016024, DOI: 10.1061/(ASCE) MT.1943-5533.0001828 (SCI-E)
19. Ipsita Panda, Surabhi, J., Sarat Kumar Das, **R. Jayabalan**. 2017. Characterization of red mud as a structural fill and embankment material using bioremediation. International Biodeterioration and Biodegradation, 119, 368-376. http://dx.doi.org/10.1016/j.ibiod.2016.11.026
20. Sahoo Moumita, Kamila Goderska, Eldin M. Johnson, Bhaskar Das, Dash Indira, Rina Yadav, Savitri Kumari, **R. Jayabalan**. 2017. Evaluation of the viability of free and encapsulated lactic acid bacteria using in-vitro gastro intestinal model and survivability studies of synbiotic microcapsules in dry food matrix during storage. LWT Food Science and Technology, 77: 460-467 (IF 3.129 SCI) https://doi.org/10.1016/j.lwt.2016.11.079.
21. Sourav Das, Sayantan Sinha, Bhaskar Das, **R. Jayabalan**, Mrutyunjay Suar, Amrita Mishra, Ashok J. Tamhankar, Cecilia Stålsby Lundborg, Suraj K. Tripathy. 2017. Disinfection of Multidrug Resistant Escherichia coli by SolarPhotocatalysis using Fe-doped ZnO Nanoparticles. Scientific Reports, 7:104. DOI:10.1038/s41598-017-00173-0 (IF 4.259, SCI).
22. Yugal K. Mohanta, Sujogya K. Panda, **Rasu Jayabalan**, Nanacha Sharma, Akshaya K. Bastia, Tapan K. Mohanta. March 2017. Antimicrobial, Antioxidant and Cytotoxic Activity of Silver Nanoparticles Synthesized by Leaf Extract of *Erythrina suberosa* (Roxb.). Front. Mol. Biosci., March 2017, https://doi.org/10.3389/fmolb.2017.00014
23. Eldin Johnson, Yong-Gyun Jung, Ying-Yu Jin, **Rasu Jayabalan**, Seung Hwan Yang, Joo Won Suh. Sep 2017. Bacteriocins as food preservatives: Challenges and Emerging Horizons. Critical Reviews in Food Science and Nutrition, pages 1-25. (IF: 6.015 SCI, doi: http://dx.doi.org/10.1080/10408398.2017.1340870)
24. Yugal Kishore Mohanta, Kunal Biswas, Sujogya Panda, Jaya Bandyopadhyay, Debashis De, **Rasu Jayabalan**, Akshaya Bastia, Tapan Mohanta. Dec 2017. Phyto-assisted synthesis of biofunctionalized silver nanoparticles and their

potential antioxidant, antimicrobial, and wound healing activities. IET Nanobiotechnology, 11(8): 1027-1034. doi: **10.1049/iet-nbt.2017.0017**

25. Jessica Martinez Leal, Lucia Valenzuela Suarez, **Rasu Jayabalan**, Joselina Huerta Oros, Anayansi Escalante-Aburto. Feb 2018. A review on health benefits of kombucha nutritional compounds and metabolites. CyTA - Journal of Food *(TCYT)*, 16(1): 390-399. https://doi.org/10.1080/19476337.2017.1410499
26. AP Habeeb Rahman, Ananyo Jyoti Misra, Sourav Das, Bhaskar Das, **R Jayabalan**, Mrutyunjay Suar, Amrita Mishra, Ashok J. Tamhankar, Cecilia Stalsby Lundborg, Suraj K. Tripathy. Mar 2018. Mechanistic insight into the disinfection of *Salmonella* sp. By sun-light assisted sonophotocatalysis using doped ZnO nanoparticles. Chemical Engineering Journal, 336, 476-488 (IF 6.735, SCI). https://doi.org/10.1016/j.cej.2017.12.053
27. Rohit Kumar Singh, Sourav Mishra, Satyapriya Jena, Bijayananda Panigrahi, Bhaskar Das, **Rasu Jayabalan**, Pankaj Kumar Parhi, Dindyal Mandal. Mar 2018. Rapid colorimetric sensing of gadolinium by EGCG-derived AgNPs: the development of nanohybrid bioimaging probe. Chemical Communications, 54: 3981-3984 (10.1039/C8CC01777H)
28. Yugal Kishore Mohanta, Kunal Biswas, Jaya Bandyopadhyay, Abiral Tamang, Debashis De, Dambarudhar Mohanta, Sujogya Kumar Panda, **Rasu Jayabalan**, Tapan Kumar Mohanta, Akshaya Kumar Bastia. Feb 2018. Abutilon indicum (L.) Sweet Leaf Extracts Assisted Bio-Inspired Synthesis of Electronically Charged Silver Nano-Particles with Potential Antimicrobial, Antioxidant and Cytotoxic Properties, Materials Focus, 7(1): 94-100(7). https://doi.org/10.1166/mat.2018.1484
29. Sahoo Moumita, Bhaskar Das, Uzma Hasan, **R. Jayabalan**. Oct 2018. Effect of long-term storage on viability and acceptability of lyophilized and spray-dried synbiotic microcapsules in dry functional food formulations. LWT Food Science and Technology, 96: 127-132. https://doi.org/10.1016/j.lwt.2018.05.030 (SCI, IF: 3.129)
30. Bhaskar Das , Sahoo Moumita , Soumen Ghosh , Md Imran Khan , Dash Indira , **R. Jayabalan** , Suraj K. Tripathy , Amrita Mishra , P. Balasubramanian. 2018. Biosynthesis of magnesium oxide (MgO) nanoflakes by using leaf extract of *Bauhinia purpurea* and evaluation of its antibacterial property against *Staphylococcus aureus*. Materials Science and Engineering C, 91: 436-444. https://doi.org/10.1016/j.msec.2018.05.059 (SCI, IF:5.080)
31. Sahoo Moumita, Bhaskar Das, Archana Sundarray, Sanghamitra Satpathi, P. Thangaraj, S. Marimuthu, **R. Jayabalan**. Dec 2018. Study of soy-fortified green tea curd formulated using potential hypocholesterolemic and hypotensive probiotics isolated from locally made curd. Food Chemistry, 268:558-566. https://doi.org/10.1016/j.foodchem.2018.06.114 (SCI, IF:4.946)
32. Ananyo Jyoti Misra, Sourav Das, Habeeb Rahman A. P., Bhaskar Das, R. Jayabalan , Susanta Kumar Behera, Mryutunjay Suar, Ashok J Tamhankar, Amrita Mishra, Cecilia Stålsby Lundborg, Suraj K Tripathy. July 2018. Doped ZnO nanoparticles impregnated on Kaolinite (Clay): A reusable nanocomposite for photocatalytic disinfection of multidrug resistant *Enterobacter* sp. under visible light. Journal of Colloid and Interface Science, 530: 610-623. doi: 10.1016/j.jcis.2018.07.020 (SCI, IF:5.091)

33. Dash Indira, Bhaskar Das, Harshita Bhawsar, Sahoo Moumita, Eldin Maliyakkal Johnson, P. Balasubramanian, R. Jayabalan. Nov 2018. Investigation on the production of bioethanol from black tea waste biomass in the seawater-based system. Bioresource Technology Letters, 4, 209-213. https://doi.org/10.1016/j.biteb.2018.11.003

Research Papers Published in National Journals

1. P. Ponmurugan, T. Muthumani, **R. Jayabalan** and K. Swaminathan. 2006. A comparative study on kombucha tea and black tea. Journal of Plantation crops 34 (3): 688 – 693.
2. **Jayabalan, R**., Jeeva, S., Sasikumar, A.P., Inbakandan, D., Swaminathan, K., Yun, S.E. 2010. Extracellular L-Glutaminase production by marine *Brevundimonas diminuta* MTCC 8486. International Journal on Applied Bioengineering, 4(2): 19-24.
3. **Rasu Jayabalan**, Pei-Ni Chen, Yih-Shou Hsieh, Kumaresan Prabhakaran, Pandian Pitchai, Subbaiya Marimuthu, Periyasamy Thangaraj, Krishnaswamy Swaminathan, Sei Eok Yun. 2011. Effect of solvent fractions of Kombucha tea on viability and invasiveness of cancer cells - Characterization of dimethyl 2-(2-hydroxy-2-methoxypropylidine) malonate and vitexin. Indian Journal of Biotechnology 11: 75-82 (IF: 0.386 SCI-E).
4. **Rasu Jayabalan**, Eun-Seon Jeong, Jin-Ju Song, Sei-Eok Yun. 2012. Changes in concentration of free amino acids in tea during fermentation by tea fungus. Proceedings of International Conference on Traditional Foods 2010 held at Pondicherry University, India. ISBN No. 81-87299-56-8
5. Dash Indira, Barik Jijnasa, Nayak Arati, Sahoo Moumita, Dethose Ajay, Jhonson Eldin, Kumar Sachin, **Jayabalan Rasu**. 2015. Comparative Studies Of Ethanol Production And Cell Viability: Free Cells Versus Immobilized Cells. Research Journal of Pharmaceutical, Biological and Chemical Sciences, 6(2) March-April: 1708-1714 (IF: 0.35).
6. Sahoo Moumita, Sahoo Banishree , Dash Indira , Dethose Ajay , Jhonson Eldin , **Rasu Jayabalan**, Thangaraj P , Marimuthu S , Sasikumar AP , Joo-Won Suh , Seung Hwan Yang , and Kamila Goderska. 2015. Changes in Content of Tea Polyphenols in Tea Curd (Functional Food) Developed By Lactic Acid Bacteria (LAB) During Refrigerated Storage. Research Journal of Pharmaceutical, Biological and Chemical Sciences, 6(3): 406-417 (IF: 0.35)
7. M. Sangetha, M. Manoj, **R. Jayabalan**, V. Venkateswarn. 2015. Synthesis of Bis-Dibenzonaphthyridines and Evaluation of their Antibacterial Activity. Oriental Journal of Chemsitry. 31(2): 845-855 (IF 0.508).
8. Moumita Sahoo, Bhaskar Das, Eldin M Johnson, Indira Dash, Sanghamitra Satpathi, Partha Sarathi Satpathi, and **R Jayabalan**. 2015. In-vitro Cholesterol Reducing Property of Human Gut Bacteria from Rourkela Population, Odisha, India. Research Journal of Pharmaceutical, Biological and Chemical Sciences, 6(6): 765-769 (IF: 0.35)
9. Bemmo Kamdem Ulrich Landry, Sahoo Moumita, **R Jayabalan**, and Zambou Ngoufack François**.** 2016. Honey, Probiotics and Prebiotics: Review. Research Journal of Pharmaceutical, Biological and Chemical Sciences, 7(5): 2428-2438 (IF: 0.35)

Book chapters / Edited Books / Books / Reference series

1. Dash Indira, Sahoo Moumita, Dethose Ajay, C.S. Kar, R. Jayabalan. 2014. Bioprospecting halotolerant cellulase from saline environment of Bhitarkanika National Park, Odisha. Chapter 10 in "Recent Advances in Bioenergy Research", Volume III (Editors: Sachin Kumar, A.K. Sharma, S.K. Tyagi, Y.K. Yadav) published by Sardar Swaran Singh National Institute of Renewable Energy, Kapurthala, Punjab, India, ISBN 978-81-927097-2-7, Pages 99 to 109.
2. **Rasu Jayabalan**, Radomir V Malbaša, Muthuswamy Sathishkumar. 2016. Kombucha. Chapter in Reference Module in Food Science, First Edition. Elsevier Ltd., Oxford, UK. http://dx.doi.org/10.1016/B978-0-08-100596-5.03032-8.
3. **Rasu Jayabalan**, Radomir V Malbaša, Muthuswamy Sathishkumar. 2016. Kombucha Tea – Metabolites. In: Fungal Metabolites – Part of the series "Reference series in phytochemistry". Pp 1-14, Springer, Heidelberg, Germany. http://link.springer.com/referenceworkentry/10.1007%2F978-3-319-19456-1_12-1.
4. **R. Jayabalan,** K. Swaminathan. Sep 2016. Biochemical and therapeutic properties of kombucha tea. ISBN: 978-3-659-95358-3, Lambert Academic Publishing, Germany
5. Jayanta Kumar Patra, Shakti Kanta Rath, **Rasu Jayabalan**. 2017. Natural Products in Foods: Prospects and Applications (Edited book). Studium Press, Houston, USA. (ISBN10: 1-62699-074-3)
6. Subbiah Jeeva, Eldin M Johnson, Sahoo Moumita, Dash Indira, Bhaskar Das, A.P. Sasikumar, **R. Jayabalan**. 2017. Emerging concepts in biopreservation for food industries. In: Jayanta Kumar Patra, Sakthi Kanta Rath, R. Jayabalan (eds) Natural Products in Foods: Prospects and Applications. Studium Press, Houston, USA.
7. Dash Indira, Baskar Das, P. Balasubramanian, **R. Jayabalan**. 2018. Sea water as a reaction medium for bioethanol production. In: Jayanta Kumar Patra, Gitishree Das, Han-Seung Shin (eds) Microbial Biotechnology: Application in Food and Pharmacology. pp 171-192. Springer, Singapore. https://doi.org/10.1007/978-981-10-7140-9_9
8. Narendrakumar L., Das B., Paramasivan B., **Rasu Jayabalan**., Thomas S. May 2018. Quorum Quenching and Biofilm Inhibition: Alternative Imminent Strategies to Control the Disease Cholera. Chapter 4. In: Vipin Chandra Kalia (eds) Biotechnological Applications of Quorum Sensing Inhibitors. Springer, Singapore. pp 63-85, doi.org/10.1007/978-981-10-9026-4_4
9. Bhaskar Das, Balasubramanian P, **Jayabalan R** , Lekshmi N and Sabu Thomas. 2018. Strategies behind biosensors for food and waterborne pathogens. In: Kalia V. (eds) Quorum sensing and its biotechnological applications. Springer, Singapore. 10.1007/978-981-13-0848-2
10. Das B., Balasubramanian P., **Jayabalan R**., Lekshmi N., Thomas S. (Aug 2018) Strategies Behind Biosensors for Food and Waterborne Pathogens. In: Kalia V. (eds) Quorum Sensing and its Biotechnological Applications. Springer, Singapore. (doi: https://doi.org/10.1007/978-981-13-0848-2_8)
11. Rangabhashiyam S, **Rasu Jayabalan**, M Asok Rajkumar, Balasubramanian P. Jan 2019. Elimination of toxic heavy metals from aqueous systems using potential biosorbents: A review. In book: Green Buildings and Sustainable Engineering (Eds Druck, H., Pillai, R.G., Tharian, M.G., Majeed, A.Z.) Conference Proceedings of

GBSE 2018. Springer, Singapore. pp 291-311. DOI: 10.1007/978-981-13-1202-1_26 (Online ISBN 978-981-13-1202-1, Print ISBN 978-981-13-1201-4)

12. Iragavarapu Akhil Gargery, Indira Dash, **Rasu Jayabalan**, P. Balasubramanian. Jan 2019. Optimization of etherification reactions for recycling of tea fungal biomass waste into carboxymethylcellulose. In book: Green Buildings and Sustainable Engineering (Eds Druck, H., Pillai, R.G., Tharian, M.G., Majeed, A.Z.) Conference Proceedings of GBSE 2018. Springer, Singapore. pp 337-346. DOI:10.1007/978-981-13-1202-1_29 (Online ISBN 978-981-13-1202-1, Print ISBN 978-981-13-1201-4)
13. **R. Jayabalan**, Viduranga Y. Waisundara. Kombucha as functional beverage. 2019. In Alexandru Grumezescu Alina Maria Holban (eds) "Emerging Trends and Developments in Beverage Science". Academic Press (Elsevier Publications Ltd.), June 2019. ISBN 9780128163979
14. Sahoo Moumita, Bhaskar Das, Abhinandan Patnaik, Balasubramanian P, R. Jayabalan. 2018. Geneomics and Proteomics of Listeria monocytogenes. In: Dr. S. Paramithiotis and Jayanta Kumar Patra (eds) Food Molecular Microbiology of CRC Food Biology Series (edited by Ramesh C Ray), CRC Press. Under Review.

Research Papers Presented in International Conferences / Symposium

1. Presented a paper entitled "Hepatoprotective property of kombucha tea against aflatoxin B1 induced hepatotoxicity in rats" in the International Conference on Ethnopharmacology and Alternative Medicine held at Amala Cancer Research Centre, Thrissur, India. (20 – 22nd Jan 2006)
2. Presented a paper entitled "Effect of temperature on microbial growth and components in kombucha tea" in the Biovision 2006, International symposium on Food Engineering for Health care held at Sahrdaya College of Engineering and Technology, Kodakara, Thrissur, India. (16 to 18 Nov 2006)
3. Presented a paper entitled "Changes in free radical scavenging properties of kombucha tea prepared from black tea and tea waste material" in the International Conference on the Biology of Yeasts and Filamentous Fungi (BYFF 2007) held at National Chemical Laboratory, Pune, India.
4. Presented a paper entitled "Free radical scavenging properties of solvent extracts of kombucha black tea" in Biospectrum 07, an International symposium on Advances in Food biotechnology and Nutrition held at Mar Athanasios College for Advanced Studies, Tiruvalla, Kerala, India. (30 Nov and 1st Dec 2007)
5. Presented a paper entitled "Effect of kombucha tea on aflatoxin B1 induced hepatotoxicity in albino rats - Prophylactic and curative studies" in International symposium and Annual meeting of the Korean Society for Microbiology and Biotechnology Daejon, Republic of Korea. (26 June 2009)
6. Presented a paper entitled "Effect of solvent fractions of kombucha tea on viability and invasiveness of cancer cells – Characterization of dimethyl 2-2 hydroxy 2-methoxy propylidine malonate and vitexin" in ICBF 2009, an International Conference on Challenges in Biotechnology and Food Technology held at Annamalai University, Chidambaram, Tamil Nadu, India. (8 to 10 October, 2009)
7. Presented a paper entitled "Changes in concentration of free amino acids in tea during fermentation by tea fungus" in the International Conference on Traditional Foods

2010 (ICTF-2010, December 1 - 3) held at Pondicherry University, Puducherry, India.

8. Presented a paper entitled "Screening of biogenic amine production by Lactobacillus spp. and development of functional food, tea curd" in the International Conference on Functional Foods-2013 (ICFF-2013) held at Taylor's University Lake side campus, Selangor, Malaysia during 18 to 20th August, 2013.
9. Presented a paper entitled "Evaluation of viability of bacteria using in vitro gastro intestinal model and formulation of functional food with synbiotic microcapsules" in the International Conference on Advances in Food Technology and Health Sciences (ICFTHS-2014) organized by International Institute of Food and Nutritional Sciences, New Delhi, India during 15 to 16th October, 2014 (Awarded 1st Prize for the presentation).
10. Presented a paper entitled "SCREENING FOR POTENTIAL REGIONAL SPECIFIC PROBIOTIC BIO-THERAPEUTICS FROM HUMAN GUT MICROBIOTA" in International Symposium on Probiotics: From Bench to Community organized by Yakult India Microbiota and Probiotics Science Foundation at The Grand, New Delhi, India during 7-8th March, 2015.
11. Presented a paper entitled "Cellulase – a critical enzyme for biofuel industry: A sea water based approach" in 2nd International symposium on Recent Trends in Bio-energy Research organized by SSS Nation Institute of Bio-Energy, Kapurthala, Punjab, India during 25-27 Feb, 2016.
12. Presented a paper for Young Investigator Award entitled "Biotherapeutic propensity of the probiotic strains isolated from human gut microbiota against enteric infection by *Salmonella typhimurium* KCTC 2514" in 3rd Biennial PAi Conference and International Symposium on Stress, Microbiome, and Probiotics organized by NISER, Bhubaneswar during 11-13 March, 2016.
13. Presented a paper (Key Note Speech) titled "Sea water as a tool to reduce biofuel's thirst for water" in the 1st Maejo-Engineo International Conference on Renewable Energy (MEICRE 2017) organized jointly by Maejo Univeresity and Engineo Co. Ltd., Chinag Mai, Thailand during 31 May – 2 June 2017.
14. Presented a paper titled "Investigation on the production of bioethanol from black tea waste biomass in sea water based system" in the 1st Maejo-Engineo International Conference on Renewable Energy (MEICRE 2017) organized jointly by Maejo Univeresity and Engineo Co. Ltd., Chinag Mai, Thailand during 31 May – 2 June 2017 (Awarded Best Presentation Award).
15. Presented a paper (Key Note Speech) titled "Sea water – a sustainable solution for the fresh water drain in bioethanol industries" in the 2nd Maejo-Engineo International Conference on Renewable Energy (MEICRE 2017) organized jointly by Maejo Univeresity and Engineo Co. Ltd., Chinag Mai, Thailand during 14th and 15th December 2018.

Research Papers Presented in National Conferences / Symposium

1. Presented a paper entitled "Kombucha Tea: A natural way to cure cancer" in the "National Conference on Recent Trends in Radiation Biology and Cancer Research" held at Govt. Dungar College, Bikaner, Rajasthan, India.

2. Presented a paper entitled "Kombucha tea – An ancient tribal medicine" in the UGC National seminar on Tribal studies in the Western Ghats" held at Bharathiar University, Coimbatore, India.
3. Presented a paper entitled "Green synthesis of silver nanoparticles from tea and kombucha tea" in the National Level Seminar "Biogalaxia '10" held on 13th October, 2010 at Bharathiar University, Coimbatore, India.
4. Maharasan, K.S., Rajalingam, G.V., Jayabalan, R. "Maximixing contributions from agro-based industry – techno management perspective". Presented at INDIFED 2011 (Indian Industry: Fostering Economic Development) organized by Annamalai University at Hotel Fortune Park Aruna, Chennai on March 24-25, 2011.

Training Programme / Short term courses / Workshops Attended

- Attended Winter Programme on "Data analysis in Social Sciences" conducted by Tata Institute of Social Sciences (TISS), Mumbai, India from November 12 – 24, 2007.
- Participated in a Wipro Mission 10 X workshop and workshop on High Impact Teaching Skills conducted at Karunya University, Coimbatore, Tamil Nadu, India during April 25 – 29, 2011.
- Participated in the workshop on Nanocoatings and Applications – Nanocoat 2011 Organised by Department of Manufacturing Engineering (DoME), CEG Campus, Anna University, Chennai, India on 30th May, 2011.
- Participated in "Short term course on Basics of Nutrition and its application in Laboratory Animals" conducted by Central Food Technological Research Institute, Mysore, India during 27.06.2011 – 29.06.2011.
- Participated in Workshop on "Certified E-Waste Management Specialist" conducted by Computer Society of India, Education Directorate, Chennai, India during 17.09.2011 – 18.09.2011.
- Participated in International Workshop on "Thermal Processing" conducted by Dept. of Food Processing and Engineering, School of Food Sciences and Technology, Karunya University, Coimbatore, Tamil Nadu, India on 9.12.2011.
- Participated in Short Term Skill Development Programme on "Cold Chain Management in Food Processing Sector" organized by Indian Institute of Crop Processing Technology, Thanjavur, Tamil Nadu from 16th to 18th February, 2012.
- Participated in National Training Programme on "Bioenergy Technology" organized by Sardar Swaran Singh National Institute of Renewable Energy, Kapurthala, Punjab from 16th March, 2012 to 17th March, 2012.
- Participated in Faculty Training Programme on "Teaching Learning Methodologies" organized by the Teaching Learning Centre, Centre for Continuing Education, IIT Madras from 20th August to 22nd August, 2012.
- Participated in Short Term training on "Microbial Diversity and Gene Prospecting through Metagenomics" organized by Department of Agricultural Microbiology, College of Horticulture, Kerala Agriculture university, Thrissur, Kerala from 16th January to 5th February, 2013.
- Participated in Workshop on "Sensory Analysis and Consumer Behaviour – Advanced Techniques and Evaluation" organized by Taylor's School of

Biosciences, Taylor's University, Lakeside Campus, Selangor, Malaysia on 21st August, 2013

- Research training on "Invitro Gastro intestinal model" at Poznan University of Life Sciences, Poland during 9th June to 3rd July, 2014.
- Participated in DST sponsored Short term course on "Accountability and Responsiveness in Scientific Organizations" conduced by Academy of Human Excellence at Vadodara, Gujarat, India during 12-16 October 2015.
- Participated in TEQIP-II sponsored Short term course on "Soil Health and Food Security" conducted by Centre for Rural Development and Technology, Indian Institute of Technology, Delhi, India during 7-11 December 2015.
- Participated in DST sponsored Brain Storming meeting on "Renewing the tradition of natural product research in India" held during 21-23 Jan 2016 at CSIR-CDRI, Lucknow, India.
- Participated in The International Workshop on "Applications of Systems and Mathematical Biology in Stress, Microbiome & Probiotics" held during 7-10 March, 2016 at NISER, Bhubaneswar, India.
- Participated in Workshop on "Probiotics in Clinical Practices" held during 20-21 April 2017 at NDRI, Karnal, Haryana, India.
- Participated in Short Term course on 'Waste Management – Practices and Case Studies" held during 28 Aug to 1 Sep 2017 at National Institute of Technology, Tiruchirappalli, India

Conference / Symposium / Training Programme / Exhibitions Organized

- Organized a one day National Level Conference on "Recent Trends in Process and Product Development of Indigenous Foods (Al Processo' 11) on 2nd March, 2011 at School of Food Sciences and Technology, Karunya University, Coimbatore, Tamil Nadu, India.
- Organized a one day Training Programme on "Preparation of Convenience Foods" on 3rd May, 2011 at Food Processing Training Centre, School of Food Sciences and Technology, Karunya University, Coimbatore, Tamil Nadu, India.
- Organized (Joint Convenor) a three days international conference on "Conserving Biodiversity for Sustainable Development (INCCBSD 2013)" during 16 to 18th August, 2013 at National Institute of Technology, Rourkela, Odisha, India
- Organized (Convener) a three days conference titled "2nd International Conference on Frontiers in Biological Sciences" during 22 to 24th January, 2015 at National Institute of Technology, Rourkela, Odisha, India
- Organized Vivid (Photography Exhibition and Workshop) for 4 consecutive years (2015, 2016, 2017, and 2018) at NIT Rourkela, Odisha.

Invited Lectures delivered in Conference/Workshop

- "Prospects of biofules" in "Odisha Environmental Congress, 2012 - Energy and Environment – Issues, Challenges and Potentials for Odisha and Celebration of International year of sustainable energy for all" held at Bhubaneswar, Odisha, India on 21st Dec, 2012 (Jointly organized by Human Devlopment Foundation,

Bhubaneswar, Odisha Centre for Environment and Development, Thiruvananthapuram, Kerala and Regional Museum of Natural History, Bhubaneswar, Odisha.

- "Probiotics and Metagenomics" in National Symposium on Recent Advances in Industrial fermentations and Fermented foods held at SRM University, Chennai during September, 26 and 27th, 2013.
- "Are Probiotics really helpful? – Insights from Metagenomic studies" in National Seminar on Recent Advances in Food Science and Nutrition, Sambalpur University, Odisha, India during March 22nd and 23rd, 2014.

Area of Interests

- Food Microbiology / Food Technology
- Microbial therapeutic products / Natural products
- Alternate Fuels
- Microemulsion systems
- Co-enzyme regeneration using modified electrodes

Teaching Experience

- Worked as a Lecturer in the Dept. of Biotechnology, Sathyabama University, Jeppiaar Nagar, Chennai 600 019, Tamil Nadu, India from July 9th, 2007 to April 30th 2008.
- Worked as an Assistant Professor (SG) in the Department of Food Processing and Engineering, School of Food Sciences and Technology, Karunya University, Coimbatore, Tamil Nadu, India from 1st July, 2010 to 24th October, 2011
- Currently working as Assistant Professor in Department of Life Science, National Institute of Technology, Rourkela 769 008, Odisha, India from 1st November, 2011.

Post Doctoral Experience

Worked as Post-Doctoral Researcher at Food Science and Biotechnology Division, Institute of Agriculture Sciences and Technology, Chonbuk National University, Jeonju, South Korea from 19.5.2008 to 30.6.2010.

Membership in Professional bodies

- Swedish South Asian Network on Fermented Foods (SASNET – Fermented Foods) – Life Membership No. SASNET-FF/OM/263 (Since July 2012)
- Probiotics Association of India – Life Membership No. 324.
- Association of Microbiologists of India – Life membership No. 4021-2015

Academic & Administration Responsibilities

- Member of Central Curriculum Committee, National Institute of Technology, Rourkela 769008, Odisha, India – July 2015 to June 2017.

- Professor Incharge of Department Curriculum, Dept. of Life Science, National Institute of Technology, Rourkela 769008, Odisha, India – July 2014 to till date.
- Warden, M S Swaminathan Hall of Residence, National Institute of Technology, Rourkela 769008, Odisha, India – July 2015 to June 2017.
- Professor Incharge of Weak Students, Dept. of Life Science, National Institute of Technology, Rourkela 769008, Odisha, India – July 2015 to June 2017.
- Professor Incharge of Institute Solid Waste Disposal, National Institute of Technology, Rourkela 769008, Odisha, India – July 2017 to till date.
- Professor Incharge (Founder) of Third Eye Club (Photography Club), Student Activity Centre, National Institute of Technology, Rourkela 769008, Odisha, India – Nov 2012 to till date

In the News

1. The Telegraph Calcutta Monday 24th September 2018: Cocktail to fight blood pressure – Special Correspondent

GREEN TEA, SOY & CURD OFFER HOPE AGAINST CHOLESTEROL TOO

Cocktail to fight high blood pressure

2. Jansatta. 5th Feb 2019

दही के बैक्टीरिया से कोलेस्ट्रॉल में लाभ

जनसत्ता संवाद

एनआइटी, राउरकेला के जीव विज्ञान विभाग ऐसा प्रोबॉयोटिक्स बनाने में जुटा, जो स्टैटिंस की जगह ले ले

जनसत्ता Tue, 05 February 2019
epaper.jansatta.com/c/36423322

3. Curd Bacteria to fight high blood pressure. India Education diary: http://indiaeducationdiary.in/curd-bacteria-fight-high-blood-pressure/?fbclid=IwAR1dz6b8b7oOnKed_xx4aQYnRo60zW3CPHDR3BmSbQ-ulwX4B5TOzD3B8u0 – 8th Feb 2019.

4. Dharitri enewspaper (odiya) – 9th feb 2019


ଗ୍ରୀନ୍ ଟି, ସୋୟା ପ୍ରୋଟିନ,ଦହି କମାଇବ କୋଲେଷ୍ଟରଲ ଓ ରକ୍ତଚାପ

5. http://www.orissapost.com/green-tea-soya-protein-can-check-cholesterol-nit-scientists/ 10th Feb 2019

Personal Profile

Name	:	R. Jayabalan
Father's Name	:	K. Rasu
Age & Date of Birth	:	39 Years; April 10, 1981
Marital Status	:	Married
Languages known	:	English, Tamil and Hindi (To read, write and speak)

Prizes won in sports

1. First place in Annual Swimming Competition (among teaching and non-teaching staffs) – 100 m breast stroke – NIT Rourkela, September, 2014, 2015 & 2016
2. Second place in Annual Swimming competition (among teaching and non-teaching staffs) – 100 m free style – NIT Rourkela, September, 2016
3. Third place in Annual Swimming competition (among teaching and non-teaching staffs) – 100 m free style – NIT Rourkela, September, 2015
4. Second place in Annual Swimming competition (among teaching and non-teaching staffs) – 50 m breast stroke – NIT Rourkela, September 2018
5. Third place in Annual Swimming competition (among teaching and non-teaching staffs) – 50 m freestyle – NIT Rourkela, September 2018

References

1. **Dr. K. Swaminathan**
   Professor and Head (Rtd), Department of Microbial Biotechnology
   School of Biotechnology, Bharathiar University, Coimbatore 641 046
   Tamil Nadu, India. Email : kswamibiotech@gmail.com
2. **Dr. M. Sathishkumar**, R&D Division, Eureka Forbes Ltd, Haralukunte, Kudlu, Bangalore, India. E-mail: sathishkumar77@gmail.com
3. **Dr. S. Murugan,** Professor, Department of Mechanical Engineering, National Institute of Technology, Rourkela, Odisha, India.
   Email: muruganresearch@yahoo.com, murugans@nitrkl.ac.in

Declaration

Hereby I declare that all the details furnished above are true to my knowledge and belief.

R. JAYABALAN