

Ram Rajasekharan, PhD, FNA, FASc, FNASc, FNAAS, JC Bose National Fellow



**Director, Central Food Technological Research Institute (CFTRI),
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Education

Ph.D. Biochemistry, Indian Institute of Science, Bangalore, India (1987)

M.Sc. Integrated Biology, Madurai Kamaraj University, Madurai, India (1981)

B.Sc. Zoology & Botany, Madurai Kamaraj University, Madurai, India (1979)

Research Areas

- Fats and oils – as nutraceuticals and dietary supplements
- Biochemistry and molecular biology of plant oils

Professional Experience

Aug. 2012 to date - Director, Central Food Technological Research Institute, Council of Scientific and Industrial Research (CSIR), Mysore 570 020.

Dec. 2014 till date – Acting Director, Academy of Scientific and Innovative Research (AcSIR), Chennai 600113

Dec. 2007 to Apr. 2015 – Professor, Department of Biochemistry, Indian Institute of Science (IISc), Bangalore.

April 2009 to Aug. 2012 – Director, Central Institute of Medicinal and Aromatic Plants (CIMAP), Council of Scientific and Industrial Research (CSIR), Lucknow 226015.

July 2007 to Oct. 2010 – Visiting Professor, School of Science, Monash University, Sunway campus, Malaysia.

Apr. 2001 to Dec. 2007 - Associate Professor, Department of Biochemistry, Indian Institute of Science (IISc), Bangalore.

Apr. 1995 to Mar. 2001 - Assistant Professor, Department of Biochemistry, Indian Institute of Science, Bangalore, India.

Sep. 1994 to Mar. 1995 - Visiting Professor, Monsanto Company, 700, Chesterfield Parkway North, St. Louis, MO 63198, USA.

Apr. 1991 to Aug. 1994 – College Assistant Professor, Plant Genetic Engineering Laboratory, New Mexico State University Las Cruces, NM 88003, USA.

Feb. 1989 to Apr. 1991 – Research Scientist Associate, E. I. duPont de Nemours Company, AgBiotech, DuPont Experimental Station, Wilmington, DE 19880, USA.

Feb. 1987 to Feb. 1989 - Post-Doctoral Fellow, Department of Microbiology, University of Illinois, Urbana, IL 61801, USA.

Committees Served /serving

- *Chairman*, Task Force on “Biotechnological Approaches for Food and Nutritional Security”, Department of Biotechnology, Ministry of Science & Technology, New Delhi (serving).
- *Chairman* of Drink & Drinking Water Sectional Committee, FAD 14, Bureau of Indian Standards, Ministry of Consumer Affairs, Food & Public Distribution, New Delhi (serving).
- *Chairman*, Expert Committee to suggest parameters – Mid Day Meal Scheme, Department of School Education and Literacy, Ministry of Human Resource Development, New Delhi (serving).
- *Co-Chairperson* of Interview Boards, DRDO – Recruitment and Assessment Centre, Ministry of Defence, New Delhi (serving).
- *Chairman*, Project Screening Committee-2 on Research & Development of National Medicinal Plants Board, Department of AYUSH, Ministry of Health and Family Welfare, New Delhi (served).
- *Chairman*, Evaluation Committee for an independent evaluation of the ‘Technology Development and Utilization Programme for Women (TDUPW)’ scheme of DSIR, Ministry of Science & Technology, New Delhi (serving).
- *Member*, Review Committee on Genetic Manipulation (RCGM) in Department of Biotechnology, Ministry of Science & Technology, New Delhi (serving).
- *Member* of the Committee to suggest/recommend to the Government for formulation specifications of food grains for central pool procurement, Ministry of Consumer Affairs & Food and Public Distribution, New Delhi (serving).
- *Member* of Project Approval Committee (PAC), Plan Coordination Division, Ministry of Food Processing Industries, New Delhi (serving).
- *Member* of Board of Basmati Export Development Foundation, Agriculture and Processed Food Products Export Development Authority, Ministry of Commerce & Industry, New Delhi (serving).
- *Member* of Vision Group on Biotechnology, Department of Information Technology, Biotechnology and Science & Technology, Government of Karnataka (serving).
- *Member* of Research Council, CSIR-Central Electrochemical Research Institute, Karaikudi (serving).
- *Member* of Research Council, CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow (served).
- *Member* of Research Council, CSIR-Center for Cellular and Molecular Biology, Hyderabad (serving).
- *Member* of Expert Panel, Maharshi Dayanand University, Rohtak, Haryana (serving).
- *Member* in Council of Scientific and Industrial Research (CSIR)-Plant Sciences Taskforce - EMR-II, Ministry of Science & Technology, New Delhi (served).

Administrative Experience

- Jan 2008 to April 2009 – Chemical Biology Program Coordinator at the Indian Institute of Science.
- June 2005 to Dec. 2005* – Founder Chief Scientific Officer at TICEL Bio Park, Tamil Nadu State Government, Chennai¹.
- May 2002 to Nov. 2002* - Founder Research Director, Bijam Biosciences Pvt. Ltd, Hyderabad².
- Managed many target driven research activities and acquired funding from private sources, both national (ITC, Nagarjuna Chemicals & Fertilizers, Biocon, Orchid Pharma) and international (Dow Agrosciences, Indianapolis, USA) companies.

**Served during the leave of absence from Indian Institute of Science, Bangalore, India*

¹*To develop the Tamil Nadu State BioPark as a research driven operation and management.*

²*To set up R&D Facilities at Hyderabad for M/s Nagarjuna Fertilizers & Chemicals Ltd.*

Teaching Experience

- For the past twelve years, teaching General Biochemistry course at IISc as part of the course curriculum for Graduate students.
- For the past four years, teaching undergraduate level Biochemistry courses at Monash University, Sunway Campus, Malaysia.

Number of Ph.Ds guided: 16

Number of Post-Doctoral Fellows mentored: 15

Awards

- Best Award for Societal Contribution for Super Food Crops Team, CSIR-CFTRI Annual Awards 2014-15
- Sir J C Bose Memorial Award 2014, Instituted by the Indian Science Monitor.
- Technology Award for Life Sciences – 2012, instituted by the Council of Scientific and Industrial Research, Ministry of Science and Technology, Government of India, New Delhi.
- Prof. I. S. Bhatia Memorial Award – 2011, Instituted by the Society of Biological Chemists, India.
- Pro Vice-Chancellor Award for excellence in Research – 2009, instituted by Monash University.
- Pro Vice-Chancellor Award for excellence in Research – 2008, instituted by Monash University.
- National Academy of Sciences, India - Reliance Industries: Platinum Jubilee Award for Application Oriented Innovations in Biological Sciences (2008).
- Sir C. V. Raman State Award in Life Sciences – 2004, instituted by the Ministry of Science and Technology, Government of Karnataka, Bangalore, India.

- National Bioscience Award for Career Development – 2002, instituted by the Department of Biotechnology, Ministry of Science and Technology, Government of India, New Delhi.
- Nagarjuna Group Agricultural Biotechnology Excellence Award – 1999, given by Nagarjuna Fertilizers and Chemicals Limited, Hyderabad, India.

Honors

- J.C. Bose Fellow (2013) instituted by the Department of Science and Technology, New Delhi.
- Fellow of Indian National Science Academy, New Delhi, India (2012).
- Elected Corresponding Member of the International Conference on the Bioscience of Lipids (ICBL; <http://www.icbl.unibe.ch>; 2010-2013).
- Fellow of Indian Academy of Sciences, Bangalore, India (2006).
- Fellow of the National Academy of Sciences, Allahabad, India (2005).
- Fellow of National Academy of Agricultural Sciences, New Delhi, India (2003).
- Elected Member of Guha Research Conference, Hyderabad, India (2002).

Publications

1. Yadav, P. K., and **Rajasekharan, R.** (2016) Misregulation of a DDHD domain-containing lipase causes mitochondrial dysfunction in yeast. **J. Biol. Chem.** PMID: 27402848
2. Yadav, K. K., and **Rajasekharan, R.** (2016) Microarray data analyses of yeast RNA Pol I subunit RPA12 deletion strain. **Genome Data.** 2016. PMID:27222810
3. Yadav, K. K., and **Rajasekharan, R.** (2016) The transcription factor GCN4 regulates PHM8 and alters triacylglycerol metabolism in *Saccharomyces cerevisiae*. **Curr. Genet.** Mar 15. PMID: 26979516
4. Singh, N., Yadav, K. K., and **Rajasekharan, R.** (2016) ZAP1-mediated modulation of triacylglycerol levels in yeast by transcriptional control of mitochondrial fatty acid biosynthesis. **Mol. Microbiol.** 100(1):55-75.
5. Kanagavijayan, D., **Rajasekharan, R.**, and Srinivasan, M. (2016) Yeast MRX deletions have short chronological life span and more triacylglycerols. **FEMS Yeast Res.** 16(1). pii: fov109. doi: 10.1093/femsyr/fov109.
6. Vijayakumar, A., Vijayaraj, P., Vijayakumar, A. K. and **Rajasekharan, R.** (2016) The Arabidopsis ABHD11 Mutant Accumulates Polar Lipids in Leaves as a Consequence of Absent Acylhydrolase Activity. **Plant Physiol.** 170(1):180-93.
7. Yadav, K. K., Singh, N., and **Rajasekharan, R.** (2015) Responses to phosphate deprivation in yeast cells. **Curr. Genet.** Nov 28. PMID: 26615590
8. Yadav, K. K., N. Singh, and **R. Rajasekharan** (2015) The PHO4 Transcription Factor Regulates Triacylglycerol Metabolism Under Low Phosphate Conditions in *Saccharomyces cerevisiae*. **Mol. Microbiol.** 98, 456-472.
9. Sreedhar, R. V., P. Kumari, S. D. Rupwate, **R. Rajasekharan**, and M. Srinivasan (2015) Exploring Triacylglycerol Biosynthetic Pathway in Developing Seeds of Chia (*Salvia hispanica* L.): A Transcriptomic Approach. **PLoS One.** 2015 Apr. 13; 10(4):e0123580. doi: 10.1371/journal.pone.0123580. eCollection 2015. PMID: 25875809.

10. Rani, S. H., S. Saha, and R. Rajasekharan (2013) A Soluble Diacylglycerol Acyltransferase Is Involved in Triacylglycerol Biosynthesis in Oleaginous Yeast, *Rhodotorula glutinis*. **Microbiology** 159, 155-166.
11. Vijayaraj, P., C. B. Jashal, A. Vijayakumar, S. H. Rani, D. K. Venkata Rao, and R. Rajasekharan (2012) A Bifunctional Enzyme That Has Both Monoacylglycerol Acyltransferase and Lipase Activities. **Plant Physiol.** 160, 667-683.
12. Rupwate, S. D., and R. Rajasekharan (2012) Plant Phosphatidylinositol-Specific Phospholipase C – An insight. **Plant Signaling & Behavior.** 7, 1281-1283.
13. Rupwate, S. D., P. S. Rupwate, and R. Rajasekharan (2012) Regulation of Lipid Biosynthesis by Phosphatidylinositol-Specific Phospholipase C Through the Transcriptional Repression of Upstream Activating Sequence Inositol Containing Genes. **FEBS Lett.** 586, 1555-1560.
14. Parthibane, V., R. Iyappan, A. Vijayakumar, V. Venkateshwari, and R. Rajasekharan (2012) Serine/Threonine/Tyrosine Protein Kinase Phosphorylates Oleosin, a Regulator of Lipid Metabolic Functions. **Plant Physiol.** 159, 95-104.
15. Parthibane, V., S. Rajakumari, V. Venkateshwari, R. Iyappan, and R. Rajasekharan (2012) Oleosin Is a Bifunctional Enzyme That Has Both Monoacylglycerol Acyltransferase and Phospholipase Activities. **J. Biol. Chem.** 287, 1946-1954.
16. Rupwate, S. D. and R. Rajasekharan (2012) C2 Domain Is Responsible for Targeting Rice Phosphoinositide Specific Phospholipase C. **Plant Mol. Biol.** 78, 247-258.
17. Hima Rani, S., T. H. Anantha Krishna, S. Saha, A. S. Negi, and R. Rajasekharan (2010) Defective in Cuticular Ridges (*DCR*) of *Arabidopsis thaliana*, a Gene Associated with Surface Cutin Formation, Encodes a Soluble Diacylglycerol Acyltransferase. **J. Biol. Chem.** 285, 38337-38347.
18. Rajakumar, S., R. Rajasekharan and G. Daum (2010) Triacylglycerol Lipolysis Is Linked to Sphingolipid and Phospholipid Metabolism of the Yeast *Saccharomyces cerevisiae*. **Biochim. Biophys. Acta** 1801, 1314-1322.
19. Reddy, V. S., D. K. Venkat Rao, and R. Rajasekharan (2010) Functional Characterization of Lysophosphatidic Acid Phosphatase from *Arabidopsis thaliana*. **Biochim. Biophys. Acta** 1801, 455-461.
20. Ghosh, A. K., N. Chauhan, S. Rajakumari, G. Daum, and R. Rajasekharan (2009) At4g24160, a Soluble Acyl-Coenzyme A-Dependent Lysophosphatidic Acid Acyltransferase. **Plant Physiol.** 151, 869-881.
21. Ghosh, A. K., G. Ramakrishnan, C. Chandramohan, and R. Rajasekharan (2008) CGI-58, The Causative Gene for Chanarin-Dorfman Syndrome, Mediates Acylation of Lysophosphatidic Acid. **J. Biol. Chem.** 283, 24525-24533.
22. Ghosh, A. K., G. Ramakrishnan, and R. Rajasekharan (2008) *YLR099C (ICT1)* Encodes for a Soluble Acyl-CoA Dependent Lysophosphatidic Acid Acyltransferase Responsible for Enhanced Phospholipid Synthesis upon Organic Solvent Stress in *Saccharomyces cerevisiae*. **J. Biol. Chem.** 283, 9768-9775.
23. Reddy, V. S., A. K. Singh, and R. Rajasekharan (2008) The *Saccharomyces cerevisiae* PHM8 Gene Encodes a Soluble Magnesium Dependent Lysophosphatidic Acid Phosphatase. **J. Biol. Chem.** 283, 8846-8854.
24. Srinivas, M., S. Rajakumari, Y. Narayana, B. Joshi, V. M. katoch, R. Rajasekharan, and K. N. Balaji (2008) Functional characterization of a phospholipase C activity of Rv3487c and its localization to cell wall in *Mycobacterium tuberculosis*. **J. Biosci.** 33, 221-230.

25. Reddy, M. M., P. Rudrabhatla, and R. Rajasekharan (2007) Importance of Threonine Residues in the Regulation of Peanut Serine/Threonine/Tyrosine Protein Kinase Activity. *Plant Science* 172, 1054-1059.
26. Reddy, M. M., and R. Rajasekharan (2007). Serine/threonine/tyrosine protein kinase from *Arabidopsis thaliana* is dependent on serine residues for its activity. *Arch. Biochem. Biophys.* 460, 122-128.
27. Reddy, M. M., and R. Rajasekharan (2006) Role of Threonine Residues in the Regulation of Manganese-Dependent Arabidopsis Serine/Threonine/Tyrosine Protein Kinase Activity. *Arch. Biochem. Biophys.* 455, 99-109.
28. Srinivasan, M., V. Nachiappan and R. Rajasekharan (2006) Potential application of urea-derived herbicides as cytokinins in plant tissue culture. *J. Biosci.* 31, 599-605.
29. Saha, S., B. Enugutti, S. Rajakumari and R. Rajasekharan (2006) Cytosolic Triacylglycerol Biosynthetic Pathway in Plants: Molecular Cloning and Expression of Peanut Cytosolic Diacylglycerol Acyltransferase. *Plant Physiol.* 141, 1533-1543.
30. Rajakumari, S., M. Srinivasan and R. Rajasekharan (2006) Spectrophotometric Method for Quantitative Determination of Nonionic, Ionic and Zwitterionic Detergents. *J. Biochem. Biophys. Method* 68, 133-137.
31. Rudrabhatla, P., M. M. Reddy and R. Rajasekharan (2006) Genome-Wide analysis and Experimentation of Plant Serine/Threonine/Tyrosine-Specific Protein Kinases. *Plant Mol. Biol.* 60, 295-320.
32. Rudrabhatla, P. and R. Rajasekharan (2004) Functional characterization of peanut serine/threonine/tyrosine protein kinase: molecular docking and inhibition kinetics with tyrosine kinase inhibitors. *Biochemistry* 43, 12123-12132.
33. Raychaudhuri, S., and R. Rajasekharan (2003) Non-Organellar Acyl Carrier Protein from Oleaginous Yeast Is a Homologue of Ribosomal Protein P2. *J. Biol. Chem.* 278, 37648-37657.
34. Daniel, J., L. Abraham, K. Balaji, and R. Rajasekharan (2003) Biosynthesis of Stearate-Rich Triacylglycerol in Developing Embryos and Microsomal Membranes from Immature Seeds of *Garcinia indica* Chois. *Curr. Sci.* 85, 363-370.
35. Daniel, J., and R. Rajasekharan (2003) Organogelation of Plant Oils and Hydrocarbons by Long-Chain Saturated Fatty Acids, Fatty Alcohols, Wax Esters, and Dicarboxylic Acids. *J. Am. Oil Chem. Soc.* 80, 417-421.
36. Raychaudhuri, S., M. M. Reddy, N. R. Rajkumar, and R. Rajasekharan (2003) Cytosolic Iron Superoxide Dismutase Is a Part of Triacylglycerol Biosynthetic Complex in Oleaginous Yeast. *Biochem. J.* 372, 587-594.
37. Rudrabhatla, P. and R. Rajasekharan (2003) Mutational Analysis of Stress Responsive Peanut Dual Specificity Protein Kinase: Identification of Tyrosine Residues Involved in Regulation of Protein Kinase Activity. *J. Biol. Chem.* 278, 17328-17335.
38. Lata, S., Bhardwaj, K., and R. Rajasekharan (2003) A Single Step Procedure for the Synthesis of Photoreactive and Radioactive Glycerolipids. *Anal. Biochem.* 313, 155-159.
39. Rudrabhatla, P., and R. Rajasekharan (2002) Developmentally Regulated Dual-Specificity Kinase from Peanut That Is Induced by Abiotic Stresses. *Plant Physiol.* 130, 380-390.
40. Gangar, A., S. Raychaudhuri, and R. Rajasekharan (2002) Alteration in the Cytosolic Triacylglycerol Biosynthetic Machinery leads to decreased Cell Growth and Triacylglycerol Synthesis in Oleaginous Yeast. *Biochem. J.* 365, 577-589.

41. Shekar, S., A. W. Tumaney, T. J. V. S. Rao and R. Rajasekharan (2002) Isolation of Lysophosphatidic Acid Phosphatase from Developing Peanut Cotyledons. *Plant Physiol.* 128, 988-996.
42. Bhardwaj, K., A. Raju, and R. Rajasekharan (2001) Identification, Purification and Characterization of a Thermally Stable Lipase from Rice Bran: New Member of the (Phospho)lipase Family. *Plant Physiol.* 127, 1728-1738.
43. Gangar, A., A. A. Karande, and R. Rajasekharan (2001) Purification and Characterization of Acyl-Acyl Carrier Protein Synthetase from Oleaginous Yeast and Its Role in Triacylglycerol Biosynthesis. *Biochem. J.* 360, 471-479.
44. Gangar, A., A. A. Karande, and R. Rajasekharan (2001) Isolation and Localization of a Cytosolic 10S Triacylglycerol Biosynthetic Multienzyme Complex from Oleaginous Yeast. *J. Biol. Chem.* 276, 10290-10298.
45. Tumaney, A. W., S. Shekar, and R. Rajasekharan (2001) Identification, Purification of Monoacylglycerol Acyltransferase from Developing Peanut Cotyledons. *J. Biol. Chem.* 276, 10847-10852.
46. Reddy, P. S., R. Rodrigues, and R. Rajasekharan (2001) Shoot Organogenesis and Mass Propagation of *Coleus forskohlii* from Leaf-Derived Callus. *Plant Cell, Tiss. Org. Cult.* 66, 183-188.
47. Balaji, K., P. S. Reddy, and R. Rajasekharan (2000) Lipid Biosynthesis in Seed-Derived Embryogenic Callus of Kokum (*Garcinia indica*). *J. Plant Biol.* 27, 283-289.
48. Tumaney, A. W., and R. Rajasekharan (1999) Synthesis of Azidophospholipids and Labeling of Lysophosphatidylcholine Acyltransferase from Developing Soybean Cotyledons. *Biochim. Biophys. Acta* 1439, 47-56.
49. Tumaney, A. W., S. Narkunaraaja, and R. Rajasekharan (1999) Identification of Lysophosphatidic Acid Acyltransferase in Microsomal Membranes of Developing Castor Endosperm. *Curr. Sci.* 76, 660-664.
50. Shockey, J. M., R. Rajasekharan, and J. D. Kemp (1995) Photoaffinity Labeling of Developing Jojoba Seed Microsomal Membranes with a Photoactive Analog of Acyl-Coenzyme A. *Plant Physiol.* 107, 155-160.
51. Rajasekharan, R., and V. Nachiappan (1994) Use of Photoreactive Substrates for Characterization of Lysophosphatidate Acyltransferases from Developing Soybean Cotyledons. *Arch. Biochem. Biophys.* 311, 389-394.
52. Rajasekharan, R., and J. D. Kemp (1994) Synthesis of Photoreactive Phosphatidyl-ethanolamine and Its Interaction with Phospholipase A₂. *J. Lipid Res.* 35, 45-51.
53. Nachiappan, V., and R. Rajasekharan (1994) Enzymatic Synthesis of [³²P]Acyl-*sn*-Glycerol-3-Phosphate using Diacylglycerol Kinase. *Anal. Biochem.* 222, 283-285.
54. Rajasekharan, R., V. Nachiappan, and H. S. Roychowdhury (1994) Photoaffinity Labeling of Microsomal Membrane Proteins with Photoreactive Acyl-CoA Analogs. *Eur. J. Biochem.* 220, 1013-1018.
55. Nachiappan, V., S. I. Mufti, A. Chakravarthi, C. D. Eskelson, and R. Rajasekharan (1994) Lipid Peroxidation and Ethanol-Related Tumor Promotion in Fischer-344 Rats Treated with Tobacco-Specific Nitrosamines. *Alcohol Alcoholism* 29, 565-574.
56. Nachiappan, V., S. I. Mufti, C. D. Eskelson, and R. Rajasekharan (1993) Studies on the Correlation of Lipid Fatty Acid Composition with Alcohol Related Tumorigenesis. *Adv. Biosciences* 83, 411-416.

57. **Rajasekharan, R.**, R. C. Marians, J. M. Shockey, and J. D. Kemp (1993) Photoaffinity Labeling of Acyl-CoA Oxidase with 12-Azidooleoyl-CoA and 12-[(4-Azidosalicyl)amino]dodecanoyl-CoA. **Biochemistry** 32, 12386-12391.
58. **Rajasekharan, R.**, and P. S. Sastry (1990) Effect of Thiocarbamate, Urea and Uracil Herbicides in Lipid Metabolism in Groundnut (*Arachis hypogaea*) Leaves. **Biochem. Cell Biol.** 68, 567-573.
59. Rajasekharan, S., **R. Rajasekharan**, and C. S. Vaidyanathan (1990) Substrate Mediated Purification and Characterization of *meta*-Hydroxybenzoic Acid-6-Hydroxylase from *Micrococcus*. **Arch. Biochem. Biophys.** 278, 21-25.
60. **Rajasekharan, R.**, and P. S. Sastry (1988) Effect of Phenoxy Acids and Their Derivatives on Lipid Metabolism in Groundnut (*Arachis hypogaea*) Leaves. **Pestic. Biochem. Physiol.** 33, 26-36.
61. **Rajasekharan, R.**, T. K. Ray, and J. E. Cronan, Jr. (1988) A Direct Nonchromatographic Assay for 1-Acyl-*sn*-Glycerol-3-Phosphate Acyltransferase. **Anal. Biochem.** 173, 376-382.
62. **Rajasekharan, R.**, and P. S. Sastry (1987) Effect of Pyridazinone Herbicides on Lipid Metabolism in Groundnut (*Arachis hypogaea*) Leaves. **Pestic. Biochem. Physiol.** 29, 163-175.

Patents Granted/Applied

1. **Rajasekharan, R.**, Rodrigues, R., and Reddy, S. (2001) A novel herbicide comprising phytotoxins of *Lasiodiplodia theobromae* (LT) fungus, A process of producing the herbicide and a method of using the same - US Patent **6,277,786**.
2. **Rajasekharan, R.**, and Daniel, J. (2002) A process for preparing a novel synergistic solid/semi-solid organic composition - US Patent **6,391,928**.
3. **Rajasekharan, R.**, and Bhardwaj, K. (2002) Process of isolation and utilization of rice bran lipase - PCT International Publication No. **WO 02/101033**.
4. **Rajasekharan, R.** (2007) A novel triacylglycerol biosynthesis in the cytosol of eukaryotes - US Patent **7,229,815**.
5. **R. Rajasekharan**, and J. Daniel (2007) A novel reversible solid/semi-solid composition and a process for preparing the same. Indian Patent **208610**.
6. P. N. Rangarajan, **R. Rajasekharan**, and A. Mohanty (2010) Cells expressing *Pichia* cytochrome C. US patent **7,892,792**.
7. **R. Rajasekharan**, C. S. Vivek Babu, and D. K. Venketa Rao (2013) Method of protecting plant(s) and a process thereof. US patent **8,383,128**.
8. **R. Rajasekharan**, and C. S. Vivek Babu (2013) Strains of fungi and a process for production of insecticide thereof. US patent **8,497,090**.
9. P. K. Rout, A. K. Nannaware and **R. Rajasekharan**, (2013) Green process and catalyst for conversion of cellulose from aromatic biomass waste to hydroxymethyl furfural. PCT Int. Appl. (2013), **WO 2013102911**, A1 20130711.

Book chapters /reviews written

1. **Rajasekharan, R.**, Empowering the farmer community with innovative agri-business models, Compendium on Agri-business, publisher: CSIR-CFTRI, 2015, 1-5

2. **Rajasekharan, R.**, M. Srinivasan., Sreedhar, R. V., New oil seed varieties for cultivation, Compendium on Agri-business, publisher: CSIR-CFTRI, 2015, 35-38
3. **Rajasekharan, R.**, M. Srinivasan, Ramesh Kumar R., Sreedhar, R. V., Super food grain crop for cultivation, Prasanna Anjaneya Reddy L., Compendium on Agri-business, publisher: CSIR-CFTRI, 2015, 39-42
4. Rout, P. K., Nannaware, A. D., and **Rajasekharan, R.**, (2014) Depolymerization of cellulose and synthesis of hexitols from cellulose using heterogeneous catalysts. *ChemBioEng Rev.*, 1 (3) 1-22. DOI: 10.1002/cben.201300004.
5. **Rajasekharan, R.**, and Nachiappan, V. (2010) Biosynthesis and regulation of fatty acids. In *Plant Developmental Biology - Biotechnological Perspectives: Volume 2*, Chapter 6, pp. 105-115 (Pua, E. C. and Davey, M., Eds.) Springer Publishing Company, Heidelberg, Germany.

Current Membership of Scientific Societies

- American Society for Biochemistry and Molecular Biology
- American Society for Plant Biology
- Society of Biological Chemists, India
- Association of Food Scientists & Technologists, India