Curriculum Vitae

Dr. R. S. Singh

Professor & Head
Department of Biotechnology
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Research Interests

Dr. R. S. Singh is well experienced in protein and carbohydrate biotechnology, which includes industrial enzymes from microbial sources, microbial exopolysaccharides and microbial lectins. The major aims of my laboratory are to develop processes for the production and purification of industrial enzymes & microbial exopolysaccharides and their applications in food & fermentation industry. Microbial lectins after purification and characterization are evaluated for their mitogenic & therapeutic potentials. Applications of all these biomolecules in food and pharmaceutical industry are undertaken. We are also exploiting molecular biology and bioprocessing approaches for enhancing the efficiency of various food enzymes such as aspartase, rhamnosidase, inulinases, etc.

Qualifications: M.Sc., M.Ed., M.Phil., Ph.D.

Specialization: Microbial Biotechnology

Employment History

March 12, 2011- till date: Professor & Head, Department of Biotechnology, Punjabi University, Patiala

August 1, 2009 to March 11, 2011: Professor, Department of Biotechnology, Punjabi University, Patiala

August 1, 2003 to July 31, 2009: Associate Professor, Department of Biotechnology, Punjabi University, Patiala

August 1, 1998 to July 31, 2003: Senior Assistant Professor, Department of Biotechnology, Punjabi University, Patiala

August 1, 1994 to July 31, 1998: Assistant Professor, Department of Biotechnology, Punjabi University, Patiala

Fellowships/Visiting Scientist

1. MASHAV-UNESCO Fellowship (2006): Faculty of Agriculture, Food & Environmental Quality Sciences, Rehovot Campus, Hebrew University of Jerusalem, Israel
2. INSA Visiting Scientist (2008): National Institute of Pharmaceutical Education & Research, Mohali, India

Professional Memberships

1. Life Member of Biotech Research Society, India
2. Life Member of Association of Microbiologists of India
3. Life Member of Indian Science Congress Association
4. Life Member of Punjab Academy of Sciences
5. Member of Asian Federation of Biotechnology
6. President, BRSI Unit, Punjabi University, Patiala

Honorary Consultancy

1. Mount Shivalik Breweries Limited, Bhankarpur, Patiala (Pb.)
2. Rangar Breweries Limited, Mehatpur, Una (HP)
3. Pepsi Foods Limited, Channo, Sangrur (Pb.)
4. Verka Milk Plant (Milkfed), Patiala (Pb.)

Editorial Assignments

1. Member, Editorial Advisory Board (2011-till date), International Journal of Food & Fermentation Technology.
2. Assistant Editor (2004-06), Journal of Punjab Academy of Sciences.
3. Member, Guest Editorial Advisory Board, Applied Biochemistry and Biotechnology, Volume 151, Nos. 2-3, 2008 (Special Issue on "New Horizons in Biotechnology," 2007).

Conferences/Symposia Organized

1. *Member Advisory Committee:* National Conference on *"Applied Biosciences: Prospectives and Challenges,"* February 3-4, 2012, organized by Mata Gujri College, Fatehgarh Sahib (Pb.).
2. *Convener:* National Seminar on *"Genetically Modified Foods: Current Scenario,"* January 19-20, 2012, organized by Punjabi University, Patiala.
3. *Member National Advisory Committee:* International Conference on *"New Horizons in Biotechnology,"* & *8th Annual Convention of The Biotech Research Society, India*, November 21-24, 2011, organized by NIIST (CSIR), Trivandrum.

4. *Convener:* Workshop for science teachers working in Government schools on *"Microorganisms: Let us Observe & Learn,"* September 12-14, 2011, organized by Punjabi University, Patiala.
5. *Member Advisory Committee:* National Seminar and Workshop on *"Recent Trends in Biological Sciences,"* February 23-24, 2011, organized by Asian Institution, Patiala.
6. *Member Organizing Committee:* National Symposium on *"Biotech Vistas 2011,"* March 2-3, 2011, organized by Punjabi University, Patiala.
7. *Co-Convener:* National Symposium on *"Biotech 2009: Present and Future Perspectives,"* March 19-20, 2009, organized by Punjabi University, Patiala.
8. *Organizing Secretary:* National Symposium on *"New Horizons in Fermentation and Food Biotechnology,"* March 21-22, 2006, organized by Punjabi University, Patiala.
9. *Joint Organizing Secretary:* National Symposium on *"Med Biotech 2005,"* February 2-3, 2005, organized by Punjabi University, Patiala.
10. *Member Organizing Committee:* National Symposium on *"Advances in Industrial Biotechnology,"* February 23-24, 2004, organized by Punjabi University, Patiala.
11. *Member Organizing Committee:* National Symposium on *"Perspectives in Biotechnology,"* December 19-20, 1997, organized by Punjabi University, Patiala.

Ph.D. Supervised

As Supervisor:

1. Reeba Panesar (2004). Studies on the Development of Immobilized Yeast Cell Technology for the Production of Lactose Hydrolyzed Milk.
2. Balwinder Singh (2005). Screening, Production and Characterization of Inulinase for the Preparation of High Fructose Syrup.
3. Rajesh Dhaliwal (2007). Development of a Continuous System for Preparation of High Fructose Syrup from Inulin by Immobilized Inulinase.
4. Gaganpreet Kaur Saini (2008). Production and Downstream Processing of Pullulan for the Preparation of Maltotriose Syrup using Pullulanase.
5. Manpreet Singh (2009). Lipase-Mediated Kinetic Resolution of (RS)-1-Chloro-3-(3,4-Diflourophenoxy)-2-Propanol to Enantiomerically Pure (S)-Alcohol for the Synthesis of Lubeluzole Drug.
6. Ranjeeta Bhari (2010). Purification, Characterization and Evaluation of a Microbial Lectin for Therapeutic Potential.
7. Ravinder Kumar (2011). Investigations on Staphylococcal Protein A and Immunoglobulin G3 Allotype Gene Polymorphism in Mastitic Cattle and Buffaloes.
8. Mukesh Yadav (2011). Molecular Cloning, Expression and Characterization of a Novel Bacterial Aspartase (Work in progress).

9. Hemant Preet Kaur (2011). Purification, Characterization and Evaluation of Therapeutic Potential of *Aspergillus* sp. Lectins (Work in progress).
10. Rupinder Pal Singh (2011). Microbial Production, Purification and Characterization of an Endoinulinase for Preparation of Fructooligosaccharides (Work in progress).

As Co-Supervisor:

1. Sanjeev Chugh (2005). Fermentative Production of Gluconic Acid at Pilot Scale from *Aspergillus niger* Isolate.
2. Aneet Kaur (2009). Screening, Characterization and Determination of Secondary Structure of a Novel Rhamnosidase.

M. Sc. Supervised

Supervised: **73** *Under supervision:* **06**

Research Projects Completed

Major Projects:

1. Molecular Cloning, Over Expression, Purification and Characterization of a Novel Aspartase, CSIR (01/07/2008 to 31/12/2011).
2. Development of a Stable Continuous Flow System for the Preparation of High Fructose Syrup using Immobilized Inulinase, UGC (01/04/2008 to 31/03/2011).
3. Molecular Cloning, Expression and Purification of a Novel Rhamnosidase, CSIR (01/04/2007 to 10/12/2009; Co-Principal Investigator).
4. Studies on the Production, Process Optimization and Purification of a Novel Thermostable Aspartase, CSIR (01/02/2004 to 31/01/2007).

Minor Projects:

1. Studies on Citric Acid Production from Whey using Yeast Cultures, UGC (17/11/2000 to 16/11/2002).
2. Studies on Ethanol Production from Whey by Free and Immobilized Yeast Cells, UGC (25/07/1996 to 24/07/1998).

Technical Reports

1. R.S. Singh (2012). Molecular cloning, over expression, purification and characterization of a novel aspartase. Final Technical Report submitted to Council of Scientific & Industrial Research, Govt. of India, New Delhi.
2. R.S. Singh (2011). Development of a stable continuous flow system for the preparation of high fructose syrup using immobilized inulinase. Final Technical Report submitted to University Grants Commission, Govt. of India, New Delhi.
3. Munish Puri and R.S. Singh (2010). Molecular cloning, expression and purification of a novel rhamnosidase. Final Technical Report submitted to Council of Scientific & Industrial Research, Govt. of India, New Delhi.

4. R.S. Singh (2007). Studies on the production, process optimization and purification of a novel thermostable aspartase. Final Technical Report submitted to Council of Scientific & Industrial Research, Govt. of India, New Delhi.
5. R.S. Singh (2002). Studies on citric acid production from whey using yeast cultures. Final Technical Report submitted to University Grants Commission, Govt. of India, New Delhi.
6. R.S. Singh (1998). Studies on ethanol production from whey by free and immobilized yeast cells. Final Technical Report submitted to University Grants Commission, Govt. of India, New Delhi.

Sequences Submitted to GenBank (NCBI)

1. Singh, R.S. (2010). *Aeromonas media* strain NFB-5 16S ribosomal RNA gene, partial sequence. Accession No. GU810523.
2. Singh, R.S. and Yadav, M.K. (2009). *Aeromonas media* strain NFB-5 L-aspartate ammonia-lyase (*aspA*) gene, partial sequence. Accession No. GQ925830.
3. Kumar, R., Yadav, B.R. and Singh, R.S. (2009). *Bubalus bubalis* breed Murrah immunoglobulin G3 heavy chain constant region gene, partial cds. Accession No. GQ140262.
4. Vemana, K., Bag, S., Jain, R.K. and Singh, R.S. (2007). Tobacco streak virus isolate Tamil Nadu coat protein mRNA, complete cds. Accession No. EU085385.
5. Vemana, K., Bag, S., Jain, R.K. and Singh, R.S. (2007). Tobacco streak virus isolate Andhra Pradesh coat protein mRNA, complete cds. Accession No. EU085386.

List of Publications

(a) Patents:

1. Puri, M., Chugh, S.K. and Singh, R.S. (2007). A novel strain of *Aspergillus* for the production of gluconic acid and the process therefore. Indian Patent Application No. 1449/DEL/2007.
2. Singh, R.S., Sooch, B.S. and Puri, M. (2005). An improved process for inulinase production. Indian Patent Application No. 962/DEL/2005.

(b) Book:

1. *Food Biotechnology: Principles and Practices*, Joshi, V.K. and Singh, R.S. (eds.), IK International Pvt. Ltd., New Delhi, India (2012).

(c) Book Chapters:

1. Singh, R.S. and Bhari, R. (2012). Lectin extraction techniques from fungi. **In:** *Lectins: Methods and Protocols*, Goldstein, I. (ed.), Humana Press, USA (In Press).
2. Singh, R.S. and Saini, G.K. (2012). Biosynthesis of pullulan and its applications in food and pharmaceutical industry. **In:** *Microorganisms in Sustainable Agriculture and Biotechnology, Part 2,* Satyanarayana,

T., Johri, B.N. and Prakash, A. (eds.), Springer-Verlag, USA, *pp.* 509-553.

3. Joshi, V.K. and Singh, R.S. (2012). Food biotechnology: An overview. **In:** *Food Biotechnology: Principles and Practices*, Joshi, V.K. and Singh, R.S. (eds.), IK International Pvt. Ltd., New Delhi, India, *pp.* 1-37.
4. Singh, R.S. and Bhari, R. (2012). Microbial flavours: Current status and future prospects. **In:** *Food Biotechnology: Principles and Practices*, Joshi, V.K. and Singh, R.S. (eds.), IK International Pvt. Ltd., New Delhi, India, *pp.* 609-640.
5. Singh, R.S. and Saini, G.K. (2012). Functional foods. **In:** *Food Biotechnology: Principles and Practices*, Joshi, V.K. and Singh, R.S. (eds.), IK International Pvt. Ltd., New Delhi, India, *pp.* 293-336.
6. Singh, R.S. (2011). Enzymatic preparation of high fructose syrup from inulin. **In:** *Bio-Processing of Foods*, Panesar, P.S., Sharma, H.K. and Sarkar, B.C. (eds.), Asiatech Publishers Inc., New Delhi, India, *pp.* 77-98.
7. Singh, R.S., Sooch, B.S. and Attri, D. (2011). Bioreactor technology in wine production. **In:** *Handbook of Enology: Principles, Practices and Recent Innovations*, Joshi, V.K. (ed.), Asiatech Publishers Inc., New Delhi, India, *pp.* 802-860.
8. Puri, M., Kaur, A., Singh, R.S. and Kanwar, J.R. (2008). Immobilized enzyme technology for debittering citrus fruit juices. **In:** *Food Enzymes: Application of New Technologies*, Busto, M.D. and Ortega, N. (eds.), Transworld Research Network, Trivandrum, India, *pp*. 91-103.
9. Singh, R.S. and Singh, B. (2001). Whey pollution problems and potential of microbes for its utilization. **In:** *Environmental Pollution and Management of Waste Waters by Microbial Techniques*, Pathade, G.R. and Goel, P.K. (eds.), ABD Publs., Jaipur, *pp*. 104-114.

(d) Research Publications (Last Five Years):

1. Singh, R.S., Kumar, R. and Yadav, B.R. (2011). Distribution of pathogenic factors of *S. aureus* strains isolated from mastitic cattle and buffaloes. *Indian J. Biotechnol*. **10(4):** 410-416. [IF-0.385]
2. Singh, R.S., Bhari, R. and Kaur, H.P. (2011). Characteristics of yeast lectins and their role in cell-cell interactions. *Biotechnol. Adv.* **29(5):** 726-731. [IF-7.600]
3. Singh, R.S., Bhari, R., Rana, V. and Tiwary, A.K. (2011). Immunomodulatory and therapeutic potential of a mycelial lectin from *Aspergillus nidulans*. *Appl. Biochem. Biotechnol*. **165(2):** 624-638. [IF-1.879]
4. Singh, R.S., Bhari, R. and Kaur, H.P. (2011). Current trends of lectins from microfungi. *Crit. Rev. Biotechnol.* **31(3):** 193-210. [IF-5.281]

5. Rana, V., Rai, P., Tiwary, A.K., Singh, R.S., Kennedy, J.F. and Knill, C.J. (2011). Modified gums: Approaches and applications in drug delivery. *Carb. Poly.* **83(3):** 1031-1047. [IF-3.463]

6. Puri, M., Kaur, A., Barrow, C.J. and Singh, R.S. (2011). Citrus peel influences the production of an extracellular naringinase by *Staphylococcus xylosus* MAK2 in a stirred tank reactor. *Appl. Microbiol. Biotechnol.* **89(3):** 715-722. [IF-3.28]

7. Singh, R.S., Saini, G.K. and Kennedy, J.F. (2011). Continuous hydrolysis of pullulan using covalently immobilized pullulanase in a packed bed reactor. *Carb. Poly.* **83(2):** 672-675. [IF-3.463]

8. Panesar, R., Panesar, P.S., Singh, R.S. and Kennedy, J.F. (2011). Hydrolysis of milk lactose in a packed bed reactor system using immobilised yeast cells. *J. Chem. Technol. Biotechnol.* **86(1):** 42-46. [IF-1.818]

9. Kumar, R., Yadav, B.R., Anand, S.K. and Singh, R.S. (2011). Prevalence of adhesin and toxin genes among isolates of *Staphylococcus aureus* obtained from mastitic cattle. *World J. Microbiol. Biotechnol.* **27(3):** 513-521. [IF-1.214]

10. Kumar, R., Yadav, B.R., Anand, S.K. and Singh, R.S. (2011). Molecular surveillance of putative virulence factors and antibiotic resistance in *Staphylococcus aureus* isolates recovered from intra-mammary infections of river buffaloes. *Microb. Pathog*. **51(1-2):** 31-38. [IF-2.000]

11. Kumar, R., Yadav, B.R. and Singh, R.S. (2011). Antibiotic resistance and pathogenicity factors in *Staphylococcus aureus* isolated from mastitic Sahiwal cattle. *J. Biosci*. **36(1):** 175-188. [IF-1.880]

12. Singh, R.S., Bhari, R., Singh, J. and Tiwary, A.K. (2011). Purification and characterization of a new mucin-binding mycelial lectin from *Aspergillus nidulans* with potent mitogenic activity. *World J. Microbiol. Biotechnol.* **27(3):** 547-554. [IF- 1.214]

13. Singh, R.S. and Singh, R.P. (2010). Production of fructooligosaccharides from inulin by endoinulinases and their prebiotic potential. *Food Technol. Biotechnol.* **48(4):** 435-450. [IF-0.976]

14. Kumar, R., Yadav, B.R., Anand, S.K. and Singh, R.S. (2010). Molecular detection of antibiotic-resistant genes in *Staphylococcus aureus* isolated from mastitic Sahiwal Zebu cattle. *Indian J. Dairy Sci.* **63(3):** 173-177. [NAAS Rating- 4.8]

15. Singh, R.S. and Lotey, S. (2010). Enhanced exoinulinase production by *Kluyveromyces marxianus* YS-1 using response surface methodology. *Braz. Arch. Biol. Technol.* **53(5):** 1005-1013. [IF-0.397]

16. Kaur, A., Singh, S., Singh, R.S., Schwarz, W.H. and Puri, M. (2010). Hydrolysis of citrus peel naringin by recombinant α-L-rhamnosidase from *Clostridium stercorarium. J. Chem. Technol. Biotechnol.* **85(10):** 1419-1422. [IF-1.818]

17. Singh, R.S., Bhari, R., Kaur, H.P. and Vig, M. (2010). Purification and characterization of a novel thermostable mycelial lectin from

Aspergillus terricola. Appl. Biochem. Biotechnol. **162(5):** 1339-1349. [IF-1.879]

18. Singh, R.S., Bhari, R. and Kaur, H.P. (2010). Mushroom lectins: Current status and future perspectives. *Crit. Rev. Biotechnol.* **30(2):** 99-126. [IF-5.281]

19. Singh, R.S., Saini, G.K. and Kennedy, J.F. (2010). Covalent immobilization and thermodynamic characterization of pullulanase for the hydrolysis of pullulan in batch system. *Carb. Poly.* **81(2):** 252-259. [IF-3.463]

20. Kumar, R., Yadav, B.R. and Singh, R.S. (2010). Genetic determinants of antibiotic resistance in *Staphylococcus aureus* isolates from milk of mastitic crossbred cattle. *Curr. Microbiol.* **60(5):** 379-386. [IF-1.51]

21. Puri, M., Kaur, A., Singh, R.S. and Singh, A. (2010). Response surface optimization of medium components from *Staphylococcus xylosus* MAK2. *Appl. Biochem. Biotechnol.* **162(1):** 181-191. [IF- 1.879]

22. Puri, M., Kaur, A., Singh, R.S., Schwarz, W.H. and Kaur, A. (2010). One step purification and immobilization of his-tagged rhamnosidase for naringin hydrolysis. *Process Biochem.* **45(4):** 451-456. [IF-2.648]

23. Singh, R.S., Saini, G.K. and Kennedy, J.F. (2010). Maltotriose syrup preparation from pullulan using pullulanase. *Carb. Poly.* **80(2):** 402-408. [IF-3.463]

24. Singh, R.S., Bhari, R. and Tiwary, A.K. (2010). Optimization of culture conditions, partial purification and characterization of a new lectin from *Aspergillus nidulans*. *Roum. Biotechnol. Lett.* **15(1):** 4990-4999.

25. Singh, R.S., Bhari, R. and Rai, J. (2010). Further screening of *Aspergillus* species for occurrence of lectins and their characterization. *J. Basic Microbiol.* **50 (1):** 90-97. [IF- 1.395]

26. Singh, M., Singh, R.S. and Banerjee, U.C. (2010). Enantioselective transesterification of racemic 1-phenyl ethanol and its derivatives in organic solvent and ionic liquid using *Pseudomonas aeruginosa* lipase. *Proc. Biochem*. **45 (1):** 25-29. [IF-2.648]

27. Singh, R.S., Sharma, S., Kaur, G. and Bhari, R. (2009). Screening of *Penicillium* species for occurrence of lectins and their characterization. *J. Basic Microbiol.* **49(5):** 471-476. [IF-1.395]

28. Singh, R.S. and Sooch, B.S. (2009). High cell density reactors in production of fruit wines with special reference to cider. *Nat. Prod. Rad.* **8(3):** 323-333. [H Index-5]

29. Singh, R.S. and Kaur, P. (2009). Evaluation of litchi juice concentrate for the production of wine. *Nat. Prod. Rad.* **8(4):** 386-391. [H Index-5]

30. Singh, R.S., Thakur, G. and Bhari, R. (2009). Optimization of culture conditions and characterization of a new lectin from *Aspergillus niger*. *Ind. J. Microbiol*. **49(3):** 219-222. [IF-0.938]

31. Singh, R.S., Saini, G.K. and Kennedy, J.F. (2009). Downstream processing and characterization of pullulan from a novel colour variant strain of *Aureobasidium pullulans* FB-1. *Carb. Poly.* **78(1):** 89-94. [IF-3.463]

32. Singh, M., Singh, R.S. and Banerjee, U.C. (2009). Stereoselective synthesis of (*R*)-1-chloro-3(3,4-difluorophenoxy)-2-propanol using lipases from *Pseudomonas aeruginosa* in ionic liquid-containing system. *J. Mol. Cat. B: Enz.* **56(4):** 294-299. [IF-2.330]

33. Singh, R.S., Singh, H. and Saini, G.K. (2009). Response surface optimization of the critical medium components for pullulan production by *Aureobasidium pullulans* FB-1. *Appl. Biochem. Biotechnol.* **152(1):** 42-53. [IF- 1.879]

34. Singh, R.S. and Bhari, R. (2009). Biotechnology in Ayurveda. In: *Proceedings of workshop on Quality Control of ASU Drugs with Pharma Industry as a Partner*, National Institute of Ayurvedic Pharmaceutical Research, Patiala, pp. 105-112.

35. Kaur, A., Singh, R.S. and Puri, M. (2008). Strengthening of rec-rhamnosidase enhances naringin hydrolysis. *JPAS* **5-6(1&2):** 126-129.

36. Singh, R.S., Dhaliwal, R. and Puri, M. (2008). Development of a stable continuous flow immobilized enzyme reactor for the hydrolysis of inulin. *J. Ind. Microbiol. Biotechnol*. **35(7):** 777-782. [IF-2.416]

37. Singh, R.S. and Bhermi, H.K. (2008). Production of extracellular exoinulinase from *Kluyveromyces marxianus* YS-1 using root tubers of *Asparagus officinalis*. *Biores. Technol.* **99(15):** 7418-7423. [IF-4.365]

38. Singh, R.S. and Saini, G.K. (2008). Production, purification and characterization of pullulan from a novel strain of *Aureobasidium pullulans* FB-1. *J. Biotechnol.* **136S:** 506-507. [IF-2.970]

39. Singh, R.S., Saini, G.K. and Kennedy, J.F. (2008). Pullulan: Microbial sources, production and applications. *Carb. Poly.* **73(4):** 515-531. [IF-3.463]

40. Singh, R.S. and Saini, G.K. (2008). Pullulan-hyperproducing color variant strain of *Aureobasidium pullulans* FB-1 newly isolated from phylloplane of *Ficus* sp. *Biores. Technol.* **99(9):** 3896-3899. [IF-4.365]

41. Singh, R.S., Tiwary, A.K. and Bhari, R. (2008). Screening of *Aspergillus* species for occurrence of lectins and their characterization. *J. Basic Microbiol.* **48:** 112-117. [IF-1.395]

42. Singh, M., Singh, S., Singh, R.S., Chisti, Y. and Banerjee, U.C. (2008). Transesterification of primary and secondary alcohols using *Pseudomonas aeruginosa* lipase. *Biores. Technol.* **99(7):** 2116-2120. [IF-4.365]

43. Bag, S., Singh, R.S. and Jain, R.K. (2008). Further analysis of the coat protein gene sequences of *Tobacco Streak virus* isolates originating from diverse locations and hosts in India shows minor genetic divergence. *Indian Phytopath.* **61(1):** 118-123. [NAAS Rating- 3.8]

44. Bag, S., Singh, R.S. and Jain, R.K. (2007). *Agrobacterium*-mediated transformation of groundnut with coat protein gene of *Tobacco Streak virus. Indian J. Virol*. **18(2):** 65-69. [NAAS Rating- 6.7]

45. Singh, R.S., Dhaliwal, R. and Puri, M. (2007). Production of high fructose syrup from *Asparagus* inulin using immobilized exoinulinase from *Kluyveromyces marxianus* YS-1. *J. Ind. Microbiol. Biotechnol.* **34:** 649-655. [IF-2.416]

46. Panesar, R., Panesar, P.S., Singh, R.S., Kennedy, J.F. and Bera, M.B. (2007). Production of lactose-hydrolyzed milk using ethanol permeabilized yeast cells. *Food Chem.* **101(2):** 786-790. [IF-3.458]

47. Panesar, R., Panesar, P.S., Singh, R.S. and Bera, M.B. (2007). Applicability of alginate entrapped yeast cells for the production of lactose-hydrolyzed milk. *J. Food Process Engg*. **30:** 472-484. [IF-0.875]

48. Singh, R.S., Sooch, B.S. and Puri, M. (2007). Optimization of medium and process parameters for the production of inulinase from a newly isolated *Kluyveromyces marxianus* YS-1. *Biores. Technol*. **98(13):** 2518-2525. [IF-4.365]

49. Singh, R.S., Dhaliwal, R. and Puri, M. (2007). Partial purification and characterization of exoinulinase from *Kluyveromyces marxianus* YS-1 for the preparation of high fructose syrup. *J. Microbiol. Biotechnol*. **17(5):** 733-738. [IF-1.224]

Workshops/Course Works Attended

1. Workshop on *"Leveraging Internet to Redefine College Application Process,"* October 20, 2011, organized by Academic Staff College & University Computer Centre, Punjabi University, Patiala and HTCampus.com.

2. Workshop for DBT Nominees and IBSC members on *"Strengthening and Regulatory Compliance by IBSCs,"* January 29, 2009, organized by Department of Biotechnology, Govt. of India, New Delhi and Biotech Consortium India Ltd., New Delhi.

3. National workshop on *"Quality Control of ASU Drugs with Pharma Industry as a Partner,"* January 24, 2009, organized by National Institute of Ayurvedic Pharmaceutical Research, Patiala.

4. 6th International course on *"Biotechnology and Bioinformatics in Agriculture: Plants & Microorganisms,"* May 9 to July 6, 2006, organized by Faculty of Agriculture, Food and Environmental Quality Sciences, Rehovot Campus, Hebrew University of Jerusalem, Israel.

5. Workshop on *"Patent Awareness,"* September 30, 2005, organized by Punjab State Council for Science and Technology, Chandigarh and Thapar Institute of Engineering and Technology, Patiala.

6. Workshop on *"Patent Awareness,"* November 29, 2004, organized by Punjab State Council for Science and Technology, Chandigarh and Central Research Institute (Ayurveda), Patiala.

7. Workshop on *"Patent Awareness,"* March 17, 2004, organized by Punjab State Council for Science and Technology, Chandigarh and Sant Harchand Singh Longowal Central Institute of Engineering and Technology, Longowal.

8. Refresher Course in *"Human Biology (Life Sciences),"* November 20, 2001 to December 10, 2001, organized by Department of Human Biology, Punjabi University, Patiala.
9. Refresher Course in *"Biotechnology,"* October 11-31, 2000, organized by Department of Biotechnology, Punjabi University, Patiala.
10. Workshop on *"Patent Awareness,"* September 11, 2000, organized by Punjab State Council for Science and Technology, Chandigarh and Sant Longowal Institute of Engineering and Technology, Longowal.
11. Workshop on *"Patent Awareness,"* November 9, 1999, organized by Punjab State Council for Science and Technology, Chandigarh and Thapar Centre for Industrial Research and Development, Patiala.
12. *"Orientation Course,"* September 1-28, 1998, organized by Academic Staff College, Panjab University, Chandiagrh.
13. Short-term course on *"Waste Management,"* October 13-15, 1997, organized by Thapar Polytechnic, Patiala.
14. Short-term course on *"Fundamentals of Computers, MS-DOS, MS-Word under DOS, Netware Utilities, Windows, Word under Windows, E-mail, Internet and Virus Prevention,"* April 9-30, 1996, organized by Department of Computer Sciences and Engineering and University Computer Centre, Punjabi University, Patiala.
15. Workshop on *"Water Pollution Control: Problems and Prospects,"* March 8, 1991, organized by Department of Civil Engineering, Thapar Institute of Engineering and Technology, Patiala.
16. Short-term course on *"Instrumental Analysis,"* November 25-30, 1990, organized by Chemical and Biochemical Engineering Division, Thapar Corporate Research and Development Centre, Patiala.

Papers Presented at Conferences & Symposia/Seminars

International Conferences: 19 *National Conferences:* 42
Plenary Lectures/Invited Talks: 06 *Sessions Chaired:* 09