



Dr. Rajan Sharma

EX-Scientist & Professor

My Contact

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📍 Amritsar, Punjab, India

Skills

- Patience
- Determination
- Scientific and numerical skills
- Flexibility
- Decisiveness
- A logical and independent mind
- Meticulous attention to detail and accuracy
- Excellent analytical skills
- Teamwork skills
- Interpersonal skills
- Written and oral communication skills

Education Background

- Pursuing M. tech (Part time) In Health Safety and Environment from GD Goenka University, India
- Executive program in Product & Brand management from IIM Amritsar.
- Bachelor of Education, B.ed (2020-2022) from Jammu University.
- Ph.D. on Research Topic "Bioconversion of Lignocelluloses Biomass to Biogas" under Guidance of Dr. Shailey Singhal(Guide) From University of Petroleum and Energy Studies, Dehradun.
- M.Sc. Biotechnology (2008-2010)from SBSPGI, Balawala, Dehradun with 74%
- B.Sc. Biotechnology(2005-2008) from Khalsa College, Amritsar with 65%
- Higher Secondary (Medical,2003-2004) from Hindu College, Amritsar
- Matriculation(2001-2002) from Ajanta Public School (C.B.S.E.), Amritsar

About Me

Intuitive and perceptive PhD holding researcher who specializes in the field of Biomass to biogas. Experienced environmental biotechnologist researcher with more than 13 of experience contributing to academics and researches. Highly enthusiastic Biology Teacher specialized in managing students and maximizing learning opportunities in diverse classroom settings. Dedicated to continuous professional development communication with parents accurate student assessment and providing relevant course materials for effective learning.

Professional Experience

Project Head(Coordinator) from May 2018 : Amritsar Army Cantt & Khalsa Cantt

Key responsibilities:

- Education project Class from 1st to 12th
- Neet level preparation
- Sainik School preparation

Guest lecturer Biology and Science from Jan 2021 at GS International School,Gurdaspur

PGT Biology faculty at GEMS Cambridge School Batala from April 2018

Key responsibilities:

- Teaching biology +1 &+2 for competitive and board examination
- Competitive coaching to Board classes(10th)

Assistant Prof, Department of Food Science & Technology, Khalsa College, Amritsar from 01st August 2016 to April 2018

Key responsibilities:

- Teaching subjects – Fermentation technology, Biochemistry, Industrial microbiology, Food Biotechnology and General Microbiology.
- Research and Development –Utilization of food waste and waste biomass for treatment of waste water & production of energy.
- University Paper Evaluator

Assistant Prof, Uttaranchal University, Dehradun from 16th July 2015 to August 2016. Job Responsibility:

Key responsibilities:

- Teaching Subject (Environmental Science)
- Research and Development in field of waste water treatment and biomass to biofuel.
- University Paper Setter.



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Objective

Seeking a challenging career in any organization to develop my skills and looking for opportunities to gain knowledge and expertise in various functional areas such as

- Teaching
- Research and Development (Biomass to Biogas, Wastewater treatment, solid waste management)

Value additional to Academics

- Individually handle the foundation class(full science) grade 9 and grade 10 .
- Biology (Boards and NEET preparation).
- Improve result of school by 25 percents .
- Concept clearance with self made diagram ppt.
- Increase revenue of school .

Achievements

- **Academics results in last years**
 1. More than 40 NEET selections.
 2. 100 percent Board result
 3. Biology max score 98 % class XII
 4. Science Max score 97 % class X
 5. AIR 4 in Sainik school entrance examination
- **Personal achievement in last years**
- **Books 04**
- **RESEARCH PAPER 14**
- **INTERNATIONAL CONFERENCE PAPER 15**

Professional Experience

Scientist with Centre of Renewable Energy and Sustainable Development VIKALP (Nai Dishayen) New Delhi.

Key responsibilities:

- Project Undertaken:
 - Survey and Evaluation of Biomass Power and Thermal Project/ System installed in Uttarakhand funded by Uttarakhand Renewable Energy and Development Agency(UREDA)
 - Awareness Programme on Swachha Bharat Mission at Village – Shvaso ,Tehsil– Pooh, Dist. Kinnaur, HP sponsored by SRH MemorialTrust, Dehradun (October 2015)

Worked as Guest Faculty in Doon International school, Riverside Campus Dehradun

Lecturer in Chemistry Department & Pharmaceutical Department, DIT University, Dehradun from 13th August 2014 to 30th June 2015.

Key responsibilities:

- Teaching
- Subject (Environmental science) Coordinator
- University Paper Setter

JRF in IUAC Funded Project from 16th July 2014 to 12th August 2014.

Key responsibilities:

- Research and Development – Development of super hydrophobic film coating.

Research Associate in "Integrated Research, Development and Demonstration of Biogas from Leaves, Fruit Hull & De-oiled cake of Jatropha using CSTR Digester" Funded by Ministry of New & Renewable Energy, Govt. of India from 1st January 2014 to 31st March 2014.

Key responsibilities:

- Operation of 40m³ Continuous Stirred Tank Digester for Production of Biogas from Lignocelluloses Waste.
- Inspection of Biogas based Power Generation Projects in Uttarakhand & Western U.P.
- Sweetening of biogas to be used as Bio-CNG.



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Book Publication

- "Estimation of Ofloxacin and Ornidazole in Tablet Dosage Form" Published by Lambert Publisher, Germany, 2013, ISBN :978-3-659-38373-1.
- "Bioconversion of Lignocellulose Waste to Biofuel" Published by Lambert Publisher, Germany, 2012, ISBN 13: 9783659229664.
- "Fermentation Process & Microbiology of Fermented Food" Published by Lambert Publisher, Germany, 2017, ISBN17 : 978-3-659-82096-0

Research Funded Projects

- Worked as Investigator on Project Sanctioned by Ministry of New and Renewable Energy, Govt. of India to Uttaranchal University "Developing Campus as Green Campus under M.N.R.E. Scheme on Development of Solar Cities.
- Worked on Project "Survey of Biomass Power & Thermal Projects/Systems" with M/s VIKALP, Centre for Renewable Energy & Sustainable Development, A-1/266, Safdarjung Enclave, New Delhi funded by UREDA.

Professional Experience

Senior Technical Associate in Biogas Development and Training Centre funded by M.N.R.E. from 23rd March 2012 to 31st December 2013, Dehradun (University of Petroleum & Energy Studies)

Key responsibilities:

- ·Monitoring of Family Size & Power Generation based Biogas plant in Uttarakhand and West U.P.
- ·Providing C.M.C. Training
- ·Providing Govt. Staff Training
- ·Scrubbing of Biogas for Power Generation
- ·Lab scale work on Improvement in Methane content in Biogas by using different Thermo Chemical Pre-treatment Method.
- ·Utilization of biogas slurry to organic fertilizers

Technical Supervisor in QC, Cadila Pharmaceuticals Ltd. Samba (Jammu & Kashmir) from 14th January 2011 to 22nd March 2012

Key responsibilities:

- ·Analysis of finished tablet, capsules and syrups
- ·Perform Calibration of instrument
- ·Analysis of Raw Material (RS) and finished products
- ·Perform Calibration of High Pressure Liquid Chromatography.
- ·Perform analysis of packing material good
- ·Perform analysis of sample with Gas Chromatography.
- ·Documentation of quality control
- ·Preparation of Standard Solutions
- ·In charge of Packaging Department of Cadila Pharma Ltd.

INTERNATIONAL AND NATIONAL CONFERENCE'S

- Attended National Symposium on Energy Trends in Biomedical Sciences Organized by Sardar Bhagwan Singh Post Graduate Institute of Biomedical Sciences & Research (SBSPGI), Dehradun on Feb, 27-28, 2009.
- Attended Symposium on Biotechnology - A Roadmap towards Sustainable Energy in Indian Institute of Petroleum on December 10-12, 2009.



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Training Program

- Training on Biogas given under Biogas Development and Training Centre funded by M.N.R.E. from 23rd March 2012 to 31st December 2013, Dehradun (University of Petroleum & Energy Studies).

Instrument Equipment

- Handled Instrument/ Equipment:
 - HPLC (Shimadzu)
 - FTIR PERKIN ELMER
 - G.C. (NUCON)
 - U.V. Visible Spectrophotometer (Perkin Elmer, Systronic)
 - Dissolution Apparatus
 - Disintegration Apparatus
 - Stability Chamber
 - Photometer
 - GSM Tester
 - Bursting Strength
 - Atomic Absorbance Spectrophotometer (Thermo)
 - Atomic Force Microscope

Training Equipment/ Workshop Attended

- Attended Online Training on Operation of Drug Design Software by Schrodinger, Vlife Science.
- Attended Internship training in Jackson Lab, Amritsar during 23 dec to 10 Jan 2007.

INTERNATIONAL AND NATIONAL CONFERENCE'S

- Participated in seminar on "Academia Industry Interaction" held on 30th January 2010 in Sardar Bhagwan Singh Post Graduate Institute of Biomedical Sciences & Research (SBSPGI), Dehradun.
- Participated in Sardar Gurcharan Singh Memorial 3rd National Debate Competition on entitled "MNC are Really Playing Important Role in the Economic Development of the Country" Organized by Sardar Bhagwan Singh Post Graduate Institute of Biomedical Sciences & Research (SBSPGI), Dehradun on Feb.10-11, 2010.
- Rajan Sharma, G Sanjay Kumar, Dr. Shailey Singhal, Dr. Avanish K. Tiwari, "Cost Effective/ Economical Physical- Chemical Pre-Treatment Method for the Bioconversion of Lignocellulose Waste into Biogas" CHEMCON 2012 (Annual Conference of Indian Institute of Chemical Engineers an International Conference, Oral Presentation)
- Rajan Sharma, G Sanjay Kumar, Dr. Shailey Singhal, Dr. Avanish K. Tiwari, "Effect of Acid Hydrolysis on Bio Conversion of Lignocelluloses Waste to Biogas" International Conference on Emerging Trends in Chemical Sciences (ICETCS 2013) Central University Gujarat.
- Rajan Sharma, G. Sanjay Kumar, Dr. Avanish K. Tiwari, "Effect of Pre-Treatment on Bio Conversion of Wheat Straw for the Production of Bio Fuel" National Conferences on Recent Advance in Bio-Energy Research (SSS National Institute of Renewable Energy, Kapurthala) November 2013
- Rajan Sharma, G. Sanjay Kumar, Dr. Shailey Singhal, Dr. Avanish K. Tiwari, "Effect of Pre-Treatment on Bio Conversion of Rice Straw to Biogas" CHEMCON 2013 (Annual Conference of Indian Institute of Chemical Engineers an International Conference, Poster Presentation)



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Training Equipment/ Workshop Attended

- Participated in "Regional Workshop on Rain Water Harvesting & Artificial Recharge in Hilly Terrains" Organized by Uttarakhand Science Education and Research Centre (USERC) & Uttarakhand State Council for Science and Technology (UCOST), Dehradun during 12-14 July, 2016 in Doon University, Dehradun.

Other Academic Activity

- Member of Organizing Committee in National Symposium on Biofuel: Indian Scenario dated 29 April 2016, Organized by Department of Chemistry, Food Tech & Biotech. Uttarakhand University, Dehradun.
- Assisted in MOU between Central Pulp and Paper Research Institute, Saharanpur and Uttarakhand University, Dehradun for performing jointly research work.
- Member of Organizing Committee of Seminar entitled "Nutrition labeling & Food Packaging" organized by Food Science & Technology Department, Khalsa College Amritsar on 1st April 2017.

INTERNATIONAL AND NATIONAL CONFERENCE'S

- M. Pandian, Rajan Sharma, G. Sanjay Kumar, Dr. Shailey Singhal, Dr. Avanish K. Tiwari, "Isolation of Lignocelluloses Degrading Fungi for Improvement of Biogas Production from Jatropha De-Oiled Cake CHEMCON 2013 (Annual Conference of Indian Institute of Chemical Engineers International Conference, Oral Presentation)
- Rajan Sharma, Dr. Shailey Singhal, Dr. Avanish K. Tiwari, Dr. Shilpi Aggarwal, Shefali Arora "Development of Microwave Physio-Chemical Pre-treatment Method for the Bioconversion of Rice husk into Biogas & Value Added Product" CHEMCON 2014 (Annual Conference of Indian Institute of Chemical Engineers an International Conference, Oral Presentation)
- Rajan Sharma, Dr. Shailey Singhal, Dr. A.K. Tiwari, Dr. Naveen Singhal, Dr. Amit Bhatt, "Lignin and Its Impact on the Bio Refinery : Review" National Conference on Bio Fuel and Bio Energy in University of Petroleum and Energy Studies, Dehradun on June 2015.
- Rajan Sharma, Dr. Shailey Singhal, Dr. A.K. Tiwari, Dr. Naveen Singhal, "Development of Thermo-Chemical Pre Treatment method for the Bio Conversion of Wheat Straw Waste into Biogas" National Conference on Bio Fuel and Bio Energy in University of Petroleum and Energy Studies, Dehradun on June 2015.
- Rajan Sharma, Dr. Shailey Singhal, Dr. Avanish K. Tiwari, Dr. Naveen Singhal, Dr. Shilpi Aggarwal, Shefali Arora "Development of Microwave Physio-Chemical Pretreatment Method for the Bioconversion of Wheat Straw Waste into Biogas & Value Added Product 3rd International Conference on Integrative Biology August 04-06, 2015 Valencia Spain DOI : 10.4172/2329-6577.S1.003, Biol Syst. Open Access.



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Other Academic Activity

- Member of Organizing Committee of Seminar entitled "Total Quality Management(TQM) Tools in Food Industry " Organized by Food Science & Technology Department, Khalsa College Amritsar on 8th April 2017.
- Organized different Industrial tour for Student of Food Science & Technology in AB Grains Pvt Ltd, Lakshmi oil Pvt Ltd, Verka Milk Plant Mohali, & Central Potato Research Institute, Jalandhar.

Member of Editorial Board

- Member of editorial board of international journal "Stem Cell: Advanced Research and Therapy".
- Reviewer of Bio-technologia; Journal of Biotechnology, Computational Biology and Bio nanotechnology.

Reference

- Dr. R.K Jain, Technical Expert (UNIDO), Former Director Central Pulp and Paper Research Institute, Saharanpur, India.

INTERNATIONAL AND NATIONAL CONFERENCE'S

- Rajan Sharma, Shailey Singhal, Madhu Sharma, Shilpi Aggarwal, Naveen Singhal "Application of Remote Sensing in the Monitoring of Bio Gas Production" in International Conference on Intelligent Communication, Control and Devices(ICICCD 2016) 2-3 April 2016.
- Attended UCOST Sponsored Workshop on "Scope of Science and Technology with Reference to Recent Govt. Schemes" on 12th March 2016 at Maya Group of College, Dehradun.
- Rajan Sharma, Shailey Singhal, Avanish K. Tiwari, Rajesh Bahuguna, "Development of Physio-Chemical Pre-Treatment Method for the Bio Conversion of Lignocelluloses Jatropha De-Oiled Cake to Biogas" selected for Oral Presentation in International Conference Biofuels 2016 on dated August 29-31, 2016 at Sao Paula Brazil. The article will be published in supporting International Journals.
- Vikash Kandari1, Prashant Singh1, Rajan Sharma2 and Sanjay Gupta3 "Effects of Different pretreatment factors on fermentable sugar production and enzymatic hydrolysis of mixed hardwood biomass" National Symposium on Biofuel: Indian Scenario, 29 April 2016, Organized by Department of Chemistry, Food Tech & Biotech. Uttaranchal University, Dehradun.
- Rajan Sharma, Shailey Singhal, Avanish K. Tiwari "Biogas Generation from De-oiled cake of Jatropha Using Pilot Plant C.S.T.R Digester" National Symposium on Biofuel : Indian Scenario dated 29 April 2016, Organized by Department of Chemistry, Food Tech & Biotech. Uttaranchal University, Dehradun.
- Invited for Talk Entitled "LIGNOCELLULOSES WASTETO BIO GAS" on the EMN Meeting on Bio resource, taking place at Budapest, Hungary from September 9th to 13th, 2016.



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Teaching Subjects

- Biotechnology
- Botany
- Zoology
- Cell biology
- Immunology
- Enzymes
- Biochemistry
- Ecology
- Genetics
- Fermentation technology
- Oil and fat
- Food microbiology
- General biology
- Human physiology

INTERNATIONAL AND NATIONAL CONFERENCE'S

- Rajan Sharma, Shailey Singhal, Ambar srivastava , Ajay Singh , Presented poster on topic entitled "Recent development in biogas technology for the sustainable development of Nation" in National Seminar on Biogas, Organized by University of Petroleum and Energy Studies ,Dehradun on 08 July 2016.
- Manbir singh, Jugraj singh, Rajan sharma Presented paper entitled "Adsorption of Heavy Metals by Bio-Adsorbents from Developed from Food Waste" in National conference on Recent Advances in Science & Technology organized by Uttaranchal University ,Dehradun on 27-28 Feb 2017.

Research Paper Publication

- Member of editorial board of international journal "Stem Cell: Advanced Research and Therapy".
- Reviewer of Bio-technologia; Journal of Biotechnology, Computational Biology and Bio nanotechnology.
- Rajan Sharma, S Singhal, S Agarwal, G Sanjay Kumar, AK Tiwari "Effect of Pretreatment of Rice Husk for Production of Biogas" Published in International Journal of Advanced Research in Chemical Sciences (IJARCS) Volume 1, Issue 9, November 2014, PP 38-42, ISSN 2349-0403.
- S Singhal, S Agarwal, Rajan Sharma, N Singhal, A Kumar "A green route for Cu Ions Removal from Textile Industry Effluent" Published in Asian Journal of Water, Environment and Pollution, Vol. 12, No. 3 (2015), PP. 75-81, DOI 10.3233/AJW-150010
- N Singh, V Saini, P Gupta, Rajan Sharma, GS Kumar, AK Tiwari Effect of Pre-Treatment on Bioconversion of Wheat Straw for the Production of Bio Fuel" National Conference on Recent Advance in Bio-Energy Research Published in SSSNIRE Proceeding , Recent Advances in Bioenergy Research, 232, 2014



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Research Paper Publication

- Rajan Sharma, S Singhal, AK Tiwari, S Agarwal, S Arora, N Singhal "Influence of Pre-Treatment Processes into Bio-Methanation of Wheat Straw" published in Journal of Renewable and Sustainable Energy 7, 053109 (2015); doi: 10.1063/1.4931465. Published by the AIP Publishing.
- Rajan Sharma, Shailey Singhal and Avanish K. Tiwari, "Pretreatment Impact on Biomethanation of Lignocellulosic Waste" Published in Single Cell Biology Journal 2016, 5:1, ISSN: 2168-9431, DOI 10.4172/2168-9431.1000130.
- Shailey Singhal, Shilpi Agarwal, Rajan Sharma, Shefali Arora, Naveen Singhal, Amit Kumar "Integrated Waste-Metal-Bioenergy: An Operative Approach for Water Remediation Waste to Bio-energy" published in International journal of Pharmaceuticals Science and Research",37(2), March – April 2016; Article No. 44, Pages: 258-263,ISSN 0976 – 044X.
- Rajan Sharma, Shailey Singhal and Avanish K. Tiwari "Effect of Pre-treatment method on Biomethanation of Jatropha De-Oiled cake published in International journal of Pharmaceuticals http://www.globalresearchonline.net/clientpdf/Manuscripts_accepted_for_IJPSRR.pdf
- Rajan Sharma, G Sanjay kumar, Shailey Singhal, A. K Tiwari "Effect of acid hydrolysis on bioconversion of lignocellulose to biogas" published in Proceeding of International Conference on Emerging Trends in Chemical Sciences (ICETCS), 2013 Organized by School of Chemical Sciences, Central University of Gujarat, Gandhinagar, Gujarat, India on 14-15 March 2013, Springer International Publishing, 2014,ISBN 3319057944, 9783319057941.
- Rajan Sharma, Shailey Singhal, Madhu Sharma, Shilpi Aggarwal, Naveen Singhal "Application of Remote Sensing in the Monitoring of Bio Gas Production" published in Proceeding of International Conference on Intelligent Communication, Control and Devices Volume 479 of the series Advances in Intelligent Systems and Computing pp 667-672. DOI: 10.1007/978-981-10-1708-7_76, ISBN:978-981-10-1708-7.



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Personal Details

Date of Birth : 22nd April 1986
Father's Name : Mr. Parshotam Sharma
Languages : Hindi, English & Punjabi
Gender : Male
Nationality : Indian

Research Paper Publication

- Rajan Sharma" Design & Demonstration of Pilot Scale Continuous Stirred Tank Bioreactor for Biogas Production "published in International Journal of cell science, Int J Cell Sci 2016, 1(1): 000104.
- Shailey Singhal, Rajan Sharma, Shilpi Agarwal, Shefali Arora and Naveen Singhal "Exploration of de-fatted waste feed stock for the continuous production of bio-methane under psychrophilic outdoor conditions" published in journal Environmental Progress & Sustainable Energy, Wiley, DOI: 10.1002/ep.12517, Volume 36, Issue3, pages 845-849, May 2017.

Date :

Place :

Dr. RAJAN SHARMA