



Detailed Biodata

1. Name of the Applicant : **Dr. (Ms) RENU SINGH**

2. Mailing Address : Centre for Environment Science and Climate Resilient Agriculture, Indian Agricultural Research Institute, New Delhi- 110012,
Mobile: 9818419104
E-mail: renu_icar@yahoo.com

3. Date of Birth : 2nd June 1977

4. Education Qualification (Starting from Graduation onwards)

S. No.	Degree	University/Institute	Year	Subjects	Percentage/CGPA
1.	Ph.D.	I I T Delhi, India	2008	Non-conventional sources of energy, Biomass production	9.00/10.0
2.	M.Tech	G.J. Univ., Hissar, Haryana,	2000	Environmental Sciences & Engg.	64.5%
3.	M. Sc.	CCS Univ., Meerut, UP	1999	Environmental Sciences	67.4%
4.	B.Sc.	CCS Univ., Meerut, UP	1997	Chemistry, Botany & Zoology	61%

5. Research Experience

Study of Effluent treatment plant and air emission system, Daurala Sugar Works, Meerut. March- April, 1999.

Study of Effluent treatment plant of Delhi Milk Scheme, DMS, New Delhi. June- July 2000.

M.Sc Thesis title: **Characterization of Municipal Solid Waste Compost of Delhi**

M.Tech Thesis title: **COD reduction of textile mill effluent by Bio-Adsorbents**

Doctoral Thesis title: **Environmental Impact Monitoring of coal based thermal power plants**

6. Details of professional training and research experience, specifying period

Professional Training

1. Foundation Course for Agricultural Research Service, National Academy of Agricultural Research Management, Hyderabad. (28.10.03 to 24.02.04)
2. Crop Modelling, Division of Environmental Sciences, IARI, Pusa New Delhi (06.09.04-10.09.04)
3. Intellectual property awareness programme, IARI, Pusa New Delhi (29.8.06)
4. Renewable energy sources through biofuels crops, Deptt of Agronomy , TNAU,

- Coimbatore (20.2.07 to 12.03.07)
5. Bioprocessing technologies in utilization of agricultural residues for production of enzymes and biofuels”, CIPHET, Ludhiana. (16.10.07 to 05.11.07).
 - 9 Biochemical and molecular biology advanced techniques, Division of Biochemistry, IARI, New Delhi. (18.11.08 to 08.12.08)
 - 10 EDUSAT Based Training on “Remote Sensing, GIS & GPS” Sponsored by : National Natural Resources Management System, DOS Indian Institute of Remote Sensing, NRSA, Dehradun, Uttarakhand (12.08.09-30.10.09).
 8. Data analysis with SAS, of the NAIP Consortium Strengthening statistical computing for NARS at Indian Agricultural Statistics Research Institute, New Delhi, November 22-27, 2010.
 9. RS & GIS Applications to Agriculture and soils, conducted by Indian Institute of Remote Sensing (NRSC), Dehradun. (02.05.2011-24.06.2011)
 10. Digital Photographic application in Science, Central Photo Lab, Division of Agricultural extension, IARI, New Delhi. (25.07.2011 to 29.07.2011)
 11. Fermentation technology, sponsored by National Agricultural Innovation Project (ICAR), PHT, IARI, New Delhi. (09.12.11-22.12.11)
 12. “Role of scientists in Natural Resources and Environment Management” sponsored by DST at IIFM, Bhopal. (08.02.16-12.02.16)

7. Teaching

Course taught (July 2003 to till date) in:

- Fundamentals of Environmental Sciences (Introduction to various types of pollution with sources and mitigation option, related legislations),
- Instrumental methods of Analysis (Spectrophotometer UV/VIS; IR, atomic Absorption Spectrophotometer with their principle, instrumentation and application),
- Biofuels for Environmental protection (Biofuels policies, Biodiesel, bio-ethanol, biogas, bio-physical technologies for energy production from biomass),
- Environmental Impact assessment (approaches, procedures, life cycle assessment, cost benefit analysis risk assessment laws and case studies),
- Environmental Microbiology (microbial ecology, diversity, aerobiology, microbes in energy and environment, microbial risk assessment and role in pollution abatement),
- Biodiversity (Concept of ecosystem, ecology, conservation of biodiversity).
- Environmental pollution (pesticide, phosphate water pollution, chemical indicators, methane, atmospheric pollution, methane source and sinks)

8. Details of employment (past and present)

Scientist (ICAR) (25-07-2003 to 15-12-2008) at Division of Environmental Sciences, IARI, New Delhi.

Scientist (Senior Scale) (ICAR) (15-12-2008 to 14-12-2013) at Centre for Environment Science and Climate Resilient Agriculture, IARI, New Delhi.

Senior Scientist (ICAR) (15-12-2013 to till date) at Centre for Environment Science and Climate Resilient Agriculture, IARI, New Delhi.

9. List of significant publications (with details)

Publications in International and National Journals

1. Raghuvanshi SP, **Singh R**, and Kaushik CP. (2004). Kinetics Study of methylene blue dye bioadsorption on baggase. International Journal of Applied Ecology and Environmental Research, 2(2):35-43.
2. Raghuvanshi S P, **Singh R**, Kaushik CP and Raghav A K. (2005) Removal of Textile basic dye from aqueous solutions using Sawdust as bio-adsorbent. International Journal of Environmental Studies, 62(3):329-339.
3. **Singh R**, Raghuvanshi SP and Kaushik CP. (2008). Defluoridation of Drinking Water Using Brick Powder as an Adsorbent. Asian Journal of Chemistry, 20(8):5818-5826.
4. Raghuvanshi SP, **Singh R**, and Kaushik CP. (2008). Adsorption of Congo Red Dye from Aqueous Solutions using Neem Leaves as Adsorbent. Asian Journal of Chemistry, 20(7): 4994-5000. (NAAS Rating 6.25)
5. **Singh R**, Lata, Pandey AK and Joshi HC. (2009). Enrichment of corn stillage after ethanol production. Journal of Environment Research and Development, 20(3): 890-892. (IF 0.604) (NAAS Rating 7.1)
6. Raghuvanshi SP, **Singh R**, Raghav A K and Chandra A. (2010) Carbon dioxide Reduction options in Power Generation. Asian Journal of Chemistry, 22(3): 1675-1683. (NAAS Rating 6.25)
7. **Singh R**, Raghuvanshi SP and Chandra A. (2010) Environmental impact assessment scenario in developing countries, Indian Journal of Environment and Ecoplanning, 17(1-2)1-8.
8. Prasad S, Joshi HC, Gupta N, Singh NK and **Singh R**. (2010) Prospects of biofuel production and pollution control from crop residues, Bhartiya Vegyanic avam Anusandhan Patrika, 18(2),132-135. (NAAS Rating 2.46)
9. **Singh R**, Lata and Joshi HC (2012). Saccharification potential of Indian maize cultivars for biofuel production. Vegetos. 25(1). (NAAS Rating 6.02)
10. **Singh R** and Shukla A, A review on methods of flue gas cleaning from combustion of biomass, Renewable & Sustainable Energy Reviews 2014. 29: 854-863. NAAS Rating-11.63.
12. Mina U, **Singh R** and Chakravarti B. (2013). Agriculture production and air quality: an emerging challenge. International Journal of Environment Science: Development and Monitoring. 4(2), 80-85. http://www.ripublication.com/ijesdmspl/ijesdmv4n2_20.pdf
13. Singh R, Tiwari S, Srivastava M and Mina U. (2013). Effect of combination of Microwave and Hydrogen peroxide (H₂O₂) pretreatment on enzymatic saccharification of rice straw. International Journal of Environmental Engineering and Management. 4(5): 529-542. http://www.ripublication.com/ijeem_spl/ijeemv4n5_17.pdf
14. **Singh R**, Shukla A, Tiwari S and Srivastava M. (2014). A review on delignification of lignocellulosic biomass for enhancement of ethanol production potential. Renewable and Sustainable Energy Reviews. 32: 713-728. NAAS Rating-11.63

15. **Singh R**, Tiwari S, Srivastava M and Shukla A. (2013). Performance study of combined microwave and acid pretreatment method for enhancing enzymatic digestibility of rice straw for bioethanol production. *Plant Knowledge Journal*. [http://www.sciencej.com/singh_2\(4\):157-162](http://www.sciencej.com/singh_2(4):157-162).
16. **Singh R**, Tiwari S, Srivastava M and Shukla A. (2013). Microwave assisted alkali pretreatment of rice straw for enhancing enzymatic digestibility. *Journal of Energy*. <http://www.hindawi.com/journal/jen/aip/483813.pdf>.
17. **Singh R**, Tiwari S, Srivastava M and Mina U. (2013). Effect of combination of Microwave and Hydrogen peroxide (H₂O₂) pretreatment on enzymatic saccharification of rice straw. *International Journal of Environmental Engineering and Management*. <http://www.ripublication.com/ijeem.htm>.
18. Chakrabarti B, **Singh R**, Bhatia A, Singh SD and Singh B. (2014). Impact of aerial deposition from thermal power plant on growth and yield of rice and wheat. *Indian Journal of Agricultural Sciences*. 84(5) 602-606. (NAAS Rating 6.18)
19. **Singh R**, Tiwari S, Srivastava M and Shukla A. (2014). Experimental study on the performance of microwave assisted Hydrogen peroxide (H₂O₂) pretreatment of rice straw. *Agricultural Engineering International: CIGR*. <http://www.cigrjournal.org/index.php/Ejournal/article/viewFile/2633/1870>. 16(1):173-181.
20. **Singh R**, Tiwari S, Srivastava M, Nain L, Saxena AK, Rohatgi B, Kar A and Shukla A. (2014). Experimental study on microwave assisted chemical pretreatment method for bio-ethanol production from rice straw. *Asian Journal of Chemistry*. (Accepted). (NAAS Rating 6.00)
21. Tomer R, Bhatia A, Kumar V, Kumar A, **Singh R**, Singh B and Singh SD. (2015). Impact of Elevated Ozone on Growth, Yield and Nutritional Quality of Two Wheat Species in Northern India. *Aerosol and Air Quality Research*. 15: 329–340 (IF 2.83) (NAAS Rating 7.8)
22. Kumar A, **Singh R**, Prakash O, Ashutosh, (2014). Review on global solar drying status. *Agric Eng Int: CIGR Journal* 16(1):161-177.
23. **Singh R**, Mohan NH, Bhatia A, Srivastava M and Kumar A (2015). Sources and strategies for reducing ammonia emission from pig farms. *International Journal of Frontier in Technology*. 1(2)1-12.
24. Jailvayu Parivartan avam dhaan utpaadan, Singh R and Srivastava M. *Dhaan ki vaigyaanic Kheti*, Edited by Dinesh Kumar and Vir Sen Malik, Akaashwani, New Delhi, 2015.
25. Singh R, Srivastava M and Shukla A 2016. Environmental sustainability of bioethanol production from rice straw in India: A review *Renewable and Sustainable Energy Reviews*, 54:202–216.

Popular article

1. Tikau Krishi, Paryavaran avam Prakritik Sansadhano ka Sangrakshan (Hindi), Prasad S, **Singh R**, Singh NK and Sharma DK. Pusa Surabhi, IARI, New Delhi, 2008-09.
2. Upbhogtawadi Sanskriti, Paryavaran that Krishi, Prasad S, **Singh R**, Singh NK, Jigysa, Published from IIT Delhi, 2009.
3. Algae: Source of Bio-ethanol, **Singh R** and Prasad S. *Crop to Cash*, Bilingual monthly magazine on agriculture vol.1issue Nov 2009 16-19.

4. Biomass energy for environment and energy security, **Singh R**, Green Business, Vol 2, issue 2, August 2010.
5. Biofuels: A sustainable energy resource for energy security, **Singh R**, Raghuvanshi SP, Prasad S, Crop to Cash, Bilingual monthly magazine on agriculture vol.1issue 5 August 2010 17-23.
6. Prayavaran aur urja suraksha ke vikalp, **Singh R**, Singh S, Prasad S, Crop to Cash, Bilingual monthly magazine on agriculture vol.1issue 7 October 2010 12-16.
7. Hydrogen: fuel for energy security **Renu Singh**, Arti Bhatia, Sapna Tiwari, Akshay Urja, vol. 6 issue 3 December 2012.
8. Krishi avseshe se jaiv hydrogen, **Singh R**, Sapna Tiwari, Arti Bhatia, Prasaar Doot, August 2012 26-27.
9. Renewable energy certificates in India, **Renu Singh**, Akshay Urja, vol. 6 issue 5&6 June 2013.
10. Krishi avshesho se urja ka utpadan, Renu Singh, SapnaTiwari, Monika Srivastava.. Pusa Surabhi. 2012-13. Vol.6. pp 54-57.
11. Fasal Awasesh aur unke vibhenna upyog. Singh R, Tiwari S and Srivastava M. Prasar Doot, Krishi Prasaar ki Agrani Patrika. August 2013. 4:18-22.
12. Shaewal- Jaiv indharn ka ek shraut. Singh R, Srivastava M and Tiwari S. Akshay Urja. August 2013.7 (1):24-28.
13. Hydrogen: Bhavishay ka indharn. Singh R, Tiwari S and Srivastava M. Akshay Urja. February 2014. 7(4):40-43.
14. Algae – A Source of biofuels. Singh R, Srivastava M and Tiwari S. Akshay Urja. August 2013.7 (1):24-28.
15. Hydrogen: Fuel for the future. Singh R, Tiwari S and Srivastava M. Akshay Urja. February 2014. 7(4):40-43.
16. Nenotechnology avam nanokana ke lakhshan varnan ke vibhinn yantra, Yadav A, Singh R and Chakarvaty S, Prasaar Doot. Krishi Prasaar ki Agrani Patrika. February 2014. 15-18.
17. Bharat me Arsenic ka sandushan. Yadav A and Singh R. Prasaar Doot. Krishi Prasaar ki Agrani Patrika. Feburay 2014. 26-27.
18. Jalwayu parivartan avum krishi. Yadav A, Singh R, Srivastava M and Chakrabarti S. Prasar Doot. April 2014.1-4.
19. Udyog janit vayu pradushko ka vanaspati par prabhav. Singh R, Tiwari S and Srivastava M. Kheti. June 2014.14-17.
20. Jaivik ethanol jivasmi petroleum ka vikalp. Singh R, Tiwari S and Srivastava M. Vigyan Aapke Liye. July-Sept. 2014.3.
21. Ammonia washpikaran dawara nitrogen shati. Singh R and Pandey R. Prasaar Doot, Dec 2014. 51-52.
22. Jalwayu parivartan ka krishi par prabhav. Singh R and Srivastava M. Vigyan Aapke Liye. July-Sept. 2015.3.
23. Jaiv rasayanic taknik se jaibhaar adharit indhan, Singh R, Pandey R and Srivastava M. Anusandhaan. 3:1 2015.113-116.

Training Conducted

1. Training on Management of emerging environment problem for enhancing agriculture productivity. (17-24) December 2012 funded by Directorate of Extension, Ministry of Agriculture, Department of Agriculture and Cooperation, GOI.
2. Training on “Technologies for Conservation of Environmental Resources” from 10-17 September, 2013, funded by Directorate of Extension, Ministry of Agriculture, Department of Agriculture and Cooperation, GOI.
3. Training on “Natural Resources Management for Sustainable Agriculture” from 15-22 December, 2014, funded by Directorate of Extension, Ministry of Agriculture, Department of Agriculture and Cooperation, GOI.

Book chapter

1. Optimization of conditions for the production of bio-ethanol from corn starch, **Singh R**, Lata, Prasad S and Joshi HC, Energy conversion and management ed, Shukla SK and Tirkey JV, Narosa Publishing House 2010.
2. Effect of pretreatments for delignification and sugar recovery for ethanol production from corn stover, Dhanya MS, Prasad S, Joshi HC, **Singh R** and Chaudhary A, New frontiers in biofuels ed, Sharma PB and Kumar N, Scitech publication (I) Pvt Ltd, 2009.
3. Bio-ethanol from algae for energy security, **Singh R**, and Prasad S, Algae Biofuel, eds, Bhatnagar SK, Saxena A and Kraan S, Studium Press (I) Pvt. Ltd, 2011.
4. Agriculture residues and its Utilization in Various Sectors. **Singh R**, Tiwari S and Srivastava M. Training Manual on Developing Understanding on the Role of Environment Resources in Determining Agriculture Productivity (14-21 September 2012).
5. Agri-residue management for enhancing income. **Singh R**, Yadav A, Srivastava M and Tiwari S. Training Manual on Management of Emerging Environment Problem for Enhancing Agriculture Productivity (17-24 Dec, 2012).
6. Technologies for agri-residue management. **Singh R**, Tiwari S and Srivastava M. Training Manual on Technologies for conservation of Environmental resources, pp.186 TB-ICN:119/2013.
7. Monitoring and management of distillery effluent for agricultural use. In:Sustainable Management of Poor Quality water in Agriculture. Meena U and Singh R. (Eds. RK Yadav, HS Jat, S Kumar, RL Meena, K Thimappa, AK Mishra and DK Sharma), CSSRI, Karnal, pp. 44-50, 2013.
8. Cropping Pattern Inventory and Yield Estimation Using Remote Sensing. In: Sustainable Agriculture in 21st Century - Strategic Approaches and Practices. Eds. Zaidi NH and Khan MM pp. 36-48. ISBN: 9788184844085, Regal Publications, New Delhi. 2015.
9. Natural Resources Management for Sustainable Agriculture. **Singh R**, Tiwari S, Srivastava M and. Kumar V. pp.1-17 TB-ICN:140/2014.
10. Achieving Energy Sustainability Through Green Building Approach. Shukla A, Singh R and Shukla P. pp 147-162 ISBN 978-81-322-2336-8 Springer New Delhi. 2015.
11. Biofuels as Alternate Fuel from Biomass- The Indian Scenario. Singh R, Bhatia A and Srivastava M. Energy Sustainability through Green energy, pp. 287-314 ISBN 978-81-322-2336-8 Springer New Delhi. 2015

Manual

1. Manual on Air Quality Analysis, **Singh R**, Bhatia A and Singh SD. pp.118 TB-ICN:113/2013
2. Training Manual on Management of emerging environment problem for enhancing agriculture productivity. Bhatia A, Jain N, Prasad S and **Singh R**. pp.118 TB-ICN:264/2012
3. Training Manual on Technologies for conservation of Environmental resources. Mina U, **Singh R**, and Yadav A. pp.186 TB-ICN:119/2013.
4. Manual on Assessment of plant responses to air pollutants, **Singh R**, Bhatia A and Mina U. pp.89 TB-ICN:121/2013
5. Manual on Bioethanol analysis, **Singh R**, Tiwari S and Srivastava M. pp. 199 TB-ICN:128/2014.
6. Training Manual on Natural Resources Management for Sustainable Agriculture. **Singh R** and Mina U . pp.198 TB-ICN:140/2014.

Book

1. Environmental Science Fundamentals, Ethics and Laws Shukla A, **Singh R** and Kumar A, I.K. International Publishing House Pvt. Ltd, pp. 318, 2014.
2. Abstract booklet on Agricultural sustainability, food engineering, sustainable environment and biotechnological sustainability, Eds. Mishra GC, Singh R, Singh BB and Mina U. Excellent Publishing House, New Delhi. pp.83, 2014

E-material

1. Training Manual on Management of emerging environment problem for enhancing agriculture productivity. 2012
2. Training Manual on Technologies for conservation of Environmental resources. 2013
3. Training Manual on Natural Resources Management for Sustainable Agriculture. 2014.

10.Symposium/seminars

1. Raghuvanshi SP, **Singh R**, Kaushik CP, Raghav A K and Chandra A. (2002). Investigation of Sawdust as Adsorbent for the Removal of Methylene Blue Dye in Aqueous Solutions” in Proceedings of International Conference for Water and Wastewater: Perspectives in Developing Countries, (WAPDEC), by International Water Association, U. K., and IIT Delhi, 11-13 December 2002, pp.1053-1062.
2. **Singh R**, Chandra A and Garg HP. (2003). Strategic study of Environmental Impact Assessment in Developing Countries, in Proceedings of National Conference on Advances in Civil Engineering : Perspectives of Developing Countries, (ACEDEC-2003) HBTI, Kanpur, 15-16 Feb. 2003, pp. 620-627, Vol No. 2.
3. **Singh R**, Chandra A and Garg HP. (2003). Flyash utilization from coal based thermal power plants, in Proceedings of National Conference by NPTI, Bangalore, 20-23 Feb. 2003, Pages 8.1-8.9 (Technical session II).
4. **Singh R** and Raghuvanshi SP. (2003). Thermal Energy Storage and Environment: The Role of Battery Technology, in Proceedings of International Conference and 4th

- Expert meeting and workshop of IEA Annex 17" Advanced Thermal storage Techniques"21-24 March 2003. pp 88-98, paper-9.
5. Raghuvanshi SP, **Singh R**, Raghav A K and Chandra A. (2003). Greenhouse Gas: Carbon Dioxide Emission Inventory from Combustion of Fossil Fuels in Power Sector in India, Paper presented in World Climate Change Conference 2003, Moscow, 29 Sep. - 03 Oct. 03. (Abstract) pp 557.
 6. Raghuvanshi SP, **Singh R**, Raghav A K and Chandra A. (2003). Carbon Dioxide Emission from Power Sector in India, Poster presentation in Indian Chemical Engineering Congress-2003, Regional Research Laboratory, Bhubaneswar, India. 19-22 December, 2003.
 7. Raghuvanshi SP, **Singh R**, Raghav A K and Chandra A. (2003). Carbon Dioxide and Methane Emission from Power Generation in India" 'RIO 3 International Congress' in Proceedings of Rio De Janeiro, Brazil on December 1 -5, 2003, pp 243-250.
 8. **Singh R**, Raghuvanshi SP, Raghav A K and Chandra A. (2004). Environmental Impacts of Coal Industry and Thermal Power Plants In India, In Proceedings, '1st National Conference of Research Scholars and Young Scientists in Chemical Engineering', IIT Kharagpur, India 25-27 September 2004.
 9. Raghuvanshi SP, **Singh R**, Raghav A K and Chandra A. (2004). Clean Coal Technologies and Carbon Dioxide Emission from Energy Generation, In Proceedings, 'International Indo-US Chemical Engineers Conference and Meet', Mumbai, India 27-30 December, 2004.
 10. Raghuvanshi SP, Singh R, Raghav AK and Chandra A. (2005). Renewable energy: a tool for climate change mitigation, paper presented in International Conference Prithvi -2005, Trivendrum, India 25-27 Feb 2005.
 11. **Singh R**, Joshi HC and Singh J. (2006). *Jatropha curcas* cultivation in Delhi environmental conditions, paper presentation in National seminar on producing and harnessing bio-diesel for energy application, 3rd March 2006, NTPC Limited, Noida, U.P.
 12. Noise Pollution, Workshop Attended, held in India International Centre Annexe, 22nd April 2006.
 13. Workshop attended on 'Institutional, Environment, Economical, Technological and Legal issues related to Production Possibilities of Biodiesel from *Jatropha curcas* (Ratanjot) and *Pongamia Pinnata* (Karanjia)' Held at Amity School of Natural Resources and Sustainable Development, Jaipur, May 2-4, 2006.
 14. Raghuvanshi S P, **Singh R**, Raghav A K, and Chandra A. (2007). Carbon Dioxide Emission from Thermal Power Plants and Its Sequestration Strategies" In Proceedings, 'National Conference on Ecosystem Diversity and Carbon Sequestration', Dept of Env Scs, GB Pant Univ of Agri & Technology, Pant Nagar, Uttarakhand, India 22-24 March, 2007, pp 33.
 15. **Singh R**, Lata and Joshi HC. (2007). Bio-ethanol production through alcoholic fermentation of corn. National Workshop "Biofuels: production, methodologies, utilization techniques & challenges ahead", March 22-23, 2007, Mechanical Engineering Research and Development Organization, Ludhiana.
 16. Raghuvanshi SP, Raghav AK, Chandra A and **Singh R**. (2007). Impacts of Carbon dioxide on Environment and Possible Mitigation Measures, 3rd Intl Conference on Environment Science & Tech.-2007,Houston-USA, Aug5-9, 2007.

17. **Singh R**, Lata and Joshi HC. (2007). Energy security – Bio-ethanol from corn, poster presentation at 48th AMI Annual conference December 18-21, 2007.
18. **Singh R**, Lata, Prasad S, Pandey AK and Joshi HC. (2008). .Makke se ethanol utpadan ke baad bache stillage ka mulyawardhan” Poster presentation in National scientific symposium (Hindi), 16-17 Dec. 2008, IARI, New Delhi.
19. **Singh R**, Lata, Pandey AK and Joshi HC. (2008). Enrichment of corn stillage after ethanol production, 18-20 Dec.2008. International Congress of Environmental Research, BITS Pilani, Goa campus.
20. **Singh R**. (2008). Microbes: alternative source of energy, invited lecture in National symposium on Biotechnology: Vision 2020, Sardar Vallabh Bhai University of Agriculture and Technology, Meerut, 8-9 December 2008.
21. Prasad S, **Singh R**, Singh NK. (2009). Paadap avsheso se jaiv urja utpadan ki sambhavanaey tatha pradushen niyantran, National Symposium on Radio and environmental Sciences, NPL, New Delhi, 22-23 April, 2009.
22. **Singh R**, Prasad S, Joshi HC and Lata (2009). Delignification of lignocellulosic biomass for enhancement of ethanol production potential, invited lecture in “National workshop on emerging Horizons in Biofuel research and application”, 25-27 July, 2009, Agra.
23. Prasad S, **Singh R**, Gupta N, Chaudhary A, Singh NK and Joshi HC. (2009). Biomass energy for healthy environment and energy security invited lecture in “National workshop on emerging Horizons in Biofuel research and application”, 25-27 July, 2009, Agra.
24. **Singh R**, Lata, Prasad S, and Joshi HC. (2009). Optimization of conditions for the production of bioethanol from corn starch, in International conference on issues and challenges in energy conversion and management, Department of Mechanical Engineering, Institute of Technology, BHU, Varanasi, 18-20 Dec. 2009.
25. **Singh R**, Garg S and Raghuvanshi SP. (2009). Renewable Energy Resources (Wind and Ocean Energy) for Carbon Dioxide Mitigation, International Congress of Asian Planning Schools Association, 2009 (APSA 2009 Congress) on “Future of Asian Cities” CEPT University, Ahmedabad, India, 24-26th November, 2009.
26. **Singh R**, Chakorbarti B, Bhatia A and Chandra A. (2010). Role of ISCST3 - air dispersion model in Environmental monitoring of Badarpur thermal power plant, In proceedings 97th Indian Science Congress, Thiruvananthapuram, 3-7 Jan. 2010 pp. 166.
27. ORF workshop attended on Renewable Energy in India: 2030 and Beyond held on 14 Jan 2010.
28. Dhanya MS, Prasad S, Joshi HC, Singh R and Chaudhary A. (2010). Effect of pretreatments for delignification and sugar recovery for ethanol production from corn stover, Ist International conference on New frontiers in biofuels, New Delhi, 18-19 Jan, 2010.
29. Workshop on “Use of flyash in agriculture” C-FARM, 9th March 2010, Delhi.
30. **Singh R**. (2010). Bioethanol: leader of green growth, Algae biofuels workshop 2010, New Delhi, 12-13 April, 2010.
31. **Singh R**. (2010). Effect of flyash on agriculture, Abstract published in National symposium on metrology and its relevance to society, 20-21 May, 2010, NPL, New Delhi.

32. **Renu Singh**, Chandra A and Singh S.D (2010). Influence of thermal power plants on agriculture in Delhi, Zonal seminar on Physiological and molecular interventions for yield and quality improvement in crop plants, 17-18 September 2010, Sardar Vallabhbhai Patel University of Ag. and Tech., Meerut, U.P.
33. 4th International Renewable Energy Conference and Exhibition, 2010 (IIREC, 2010) from 27th to 29th October, 2010 at New Delhi/NCR.
34. Chakarbarti B, **Singh R**, Harit RC, Bhatia A and Kumar V. (2010). Koyle ki udan raakh ka prabhandhan avam upyog, (Hindi) Abstract published in National Science Congress in Indian Languages, 22-23 November, 2010, NPL, New Delhi.
35. **Singh R** and Prasad S. (2010). Lifecycle assessment of biofuels concerning to Nitrogen cycle, Abstract published in Reactive N management for sustainable development-science, technology & policy, edited by Raghuram N, Singh B, Pathak H, Ahmad A, Jain V and Pal M. 5th International Nitrogen conference 3-7 December 2010, New Delhi.
36. **Singh R**, Prasad S and Joshi H C (2010). Agricultural residue- an energy option for the production of ethanol, National conference on traditional conservation of plant biodiversity and energy resources vis-à-vis biotechnological tools for sustainability, 25-26 December 2010, Sardar Vallabhbhai Patel University of Ag. and Tech., Meerut, U.P.
37. **Singh R**, Prasad S, Lata and Joshi H.C. (2010). Evaluation of inhibition effects of hydrolysis by-products on fermentation of rice straw for ethanol production, International Conference on Applications of Renewable and Sustainable Energy for Industry and Society (REIS 2010), December 16-18, Department of Physics, Osmania University, Hyderabad, India.
38. **Singh R**, Prasad S and Harit R.C. (2011). Biomass se hydrogen, 13th National Krishi Vigyan Sangosthi (Hindi), 21-23 January 2011, Bundelkhand University, Jhansi, U.P.
39. Chakrabarti B, Singh R, Bhatia A, Singh B and Singh SD. (2011). Effect of flyash deposition from thermal power plant on wheat crop, 10th Agricultural Science Congress, 10-12, February, Lucknow.
40. **Singh R**, Chakrabarti B, Bhatia A and Singh SD. (2011). Effect of suspended particulate matter generated from coal based thermal power plant on agriculture. National Symposium on Advances in Biotechnological research in Agri-Horticultural crops for sustaining productivity, quality improvement and food security, 14-16, September, SVPUAT, Meerut pp.141-147.
41. **Singh R**, Lata, Joshi HC and Pandey AK (2011). Bioethanol production for fuel security from corn meal hydrolysate. ICORE 2-4 December, Tezpur University, Assam.
42. **Singh R**, Chakrabarti B, Bhatia A and Singh SD. (2012) Effect of Dadri coal based thermal power plant on agriculture". Poster presentation, 99th Indian Science Congress, KIIT, Bhubaneswar, January 3-7.
43. **Singh R**. (2012). Biomass to bio-ethanol. Invited lecture in National Seminar on Clean Energy options and Sustainability on 1-2 March, MANIT, Bhopal.
44. **R. Singh** (2012). Bioethanol production from agricultural residues. Invited lecture in International conference on Renewable energy on 5-6 May 2012, Eternal University, Baru Sahib, Himachal Pradesh.

45. **Singh R.** (2012). Agricultural residue - An energy option for the production of ethanol. Invited lecture in International Conference on Current trends and issues on Renewable Energy on 29-30 March, Mahatma Gandhi University, Nalgonda, AP.
46. **Singh R,** Tiwari S, Srivastava M and Mina U. (2013). Effect of combination of microwave and hydrogen peroxide pretreatment on enzymatic saccharification of rice straw in 2nd International conference on Agriculture, food technologies and environment- new approaches, on 19-20 October, New Delhi.
47. **Singh R.** (2013). Algae: A source of bioenergy. Invited lecture in short term training program on Bio-energy Conversion Technologies on 24-28 December, MANIT, Bhopal.
48. Workshop attended "Hindi me gunvatta purn vigyan lekhan: samasyaye avam samadhan", 20-21.6.2013, IARI, New Delhi.
49. **Singh R,** Srivastava M and Tiwari S. (2014). Biofuels for sustainable energy security. Invited lecture in National Conference on Sustainable Energy Development and Environment Systems. Pune University, 10-11 January ISBN 978-93-83414-18-5.1:3-9.
50. **Singh R,** Tiwari S, Srivastava M, Kumar V and Shukla A. (2014). Microwave assisted alkali and acid pretreatment of rice-straw for enhancing enzymatic digestibility for bioethanol production. National Conference on Sustainable Energy Development and Environment Systems. Pune University, 10-11 January.
51. **Singh R.** (2014). Biophysical process for biofuel production. Invited talk in Seminar on Science terminology: Application and Importance, organized by Ministry of Human Resource Development, 15-16 February.
52. Attended Brain Storming Workshop on Reactive Nitrogen Assessment in India February 13-14, 2015 organized by ING-SCON, NASC Complex, New Delhi
53. Attended exhibition and demonstration of instruments for Eddy Covariance for climate change research organized by Elron Instrument company private limited, at IARI, New Delhi, 4-5 December 2014.
54. Attended Workshop on preparation and presentation of EIA/EMP reports, Ministry of Environment, forests and Climate change, 30/04/2015.
55. Attended International conference on "Extension research interface- promoting exporting rice varieties and evolving sustainable development model" 16-18/10 2015, organized by VARDAN at IARI, New Delhi.
56. Invited Talk on "Advances in bio-fuel research in India" in Biofuels and bioenergy: International conference and exhibition of" at Maulana Azad National Institute of Technology, Bhopal, 23-25 February 2016.
57. Oral Presentation in National seminar on Contextual relevance of ITKs in plant protection 28-29 October 2015, New Delhi.
58. Singh R, Kumar V, Bhatia A, Pandey R, Kumar V, Srivastava and Pathak H, (2016) Ammonia volatilization under different air temperature regimes in wheat crop, 3rd International Plant Physiology Congress, JNU New Delhi, 11-14 December.
59. Impact of elevated temperature on ammonia volatilization in rice production, Kumar P, Singh R, Bhatia A, Srivastava M, Kumar V, Bhaskar A and Tomar R. National conference on Plant Science Research: Looking beyond 21st century for environmental and Agricultural Revolution, 5-7 February, 2016, Department of Botany, University of Delhi, New Delhi.

60. Invited Talk National conference on amelioration of air pollution effects in agricultural crops March 15, 2016 C.C.R. (P.G.) College, Muzaffarnagar (U.P.)
61. Attended workshop of Indo-UK Newton-Bhabha Virtual Centre on Nitrogen Efficiency of Whole-cropping Systems (NEWS India-UK) for improved performance and resilience in agriculture at NASC complex, New Delhi. 28-29 February, 2016.
62. Singh R. 2016. Response of gamma irradiation on plant growth and yield of maize, 4th international conference on Recent innovations in Science, Engineering and management, 20 March 2016, New Delhi.

Special assignments

1. Member, Examination committee for voice testing Akaashwani, New Delhi
2. Member, Selection committee for Young professional II IARI, New Delhi
3. Associate Editor Anusandhan (Vigyaan Shudh Patika), BSNV Vigyaan Parishad, University of Lucknow, U.P.
4. Member expert panel Technical Research Board Department of Resource management and design application, Lady Irwin College, University of Delhi, New Delhi.
5. Member scientific consultation meeting on cooperation with European Union and its 28 Members States in the sector of Agriculture and Bio-economy organized by DST GoI at Bihar Agril University, Sabour, Bhagalpur.

Membership of Academic/Professional bodies:

- Life member, BSNV Vigyaan Parishad, University of Lucknow, U.P.
- Life member, Society for Community Mobilization for Sustainable Development
- Life member, Society for Conservation of Nature
- Life member, Society for Recent Development in Agriculture
- Life member, Society of plant physiology
- Life member, Indian Association for Air Pollution Control (Delhi Chapter)

13. Professional recognition, awards, fellowships received:

- I.I.T. Delhi, SRF (2001-2003) for Pursuing Ph.D. from I.I.T. New Delhi
- Qualified ICAR-National Eligibility Test (2001) for Lectureship
- **Best paper presentation** award for **Singh R, Prasad S, Lata and Joshi H.C.** (2010). Evaluation of inhibition effects of hydrolysis by-products on fermentation of rice straw for ethanol production, International Conference on Applications of Renewable and Sustainable Energy for Industry and Society (REIS 2010), December 16-18, Department of Physics, Osmania University, Hyderabad, India.
- Research project under **SERC Fast Track (Department of Science and Technology)** selected for Young Scientist entitled “Development of economically viable conversion technology for ethanol production from rice straw”.

- **Young Scientist Award (Second)** for “Effect of suspended particulate matter generated from coal based thermal power plant on agriculture.” National Symposium on Advances in Biotechnological research in Agri-Horticultural crops for sustaining productivity, quality improvement and food security, 14-16, September 2011, SVPUAT, Meerut.
- **Young Fellow Award** (Environmental Sciences), Society for Recent Development in Agriculture, 2011.
- Technical Editor of Akshay Urja, Magazine published by Ministry of new and Renewable Energy.
- Best paper presentation award in National Conference on Sustainable Energy Development and Environment Systems on 10th and 11th January 2014 for the paper title Microwave assisted acid pretreatment of rice-straw for enhancing enzymatic digestibility for bioethanol production. Singh R, Tiwari S, Srivastava M, Kumar V and Shukla A.
- Best poster presentation award in International Congress on Agriculture, Food Engineering and Environmental Sciences- Sustainable approaches March 29-30th 2014, Jawaharlal Nehru University. Effect of Temperature on nitrogen use efficiency in crop production. Tiwari S, Srivastava M, Kumar V and Singh R.
- Third prize in Shabdgyan competition organized by IARI Hindi Saptah celebration, 2013.
- Convener of International Congress on Agriculture, Food Engineering and Environmental Sciences- Sustainable approaches March 29-30th 2014, Jawaharlal Nehru University.
- Best Paper award, Om Prakash Chaturvedi, K Kundu, **Renu Singh**, Methanolysis of Karanj (*Pongamia pinnata*) oil for production of biodiesel” at the first International Seminar on Renewable Energy and Sustainable Development, 2015, 15-17 June 2015, Royal University of Bhutan, Thimphu, Bhutan.
- Appreciation award for outstanding contribution in organizing National seminar on Contextual relevance of ITKs in plant protection 28-29 October 2015, New Delhi.
- Fellowship granted under the BBSRC/DBT NEWS India-UK Virtual Joint Research Centre Scotland from 1 October to 30 November 2016 consists of work in CEH Edinburgh, University of Aberdeen Institute National Recherche Agronomique (INRA), Paris, France.
- Associate Editor Anusandhan (Vigyaan Shudh Patika), BSNV Vigyaan Parishad, University of Lucknow, U.P.
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12. Any other information:

Acquired skill in following fields

- Worked with Instruments like Fermentor, Gas Liquid Chromatography, Fibertec analyzer System, Flame Photometer, Nitrogen analyzer, Spectrophotometer, Atomic

Absorption Spectrophotometer, High Performance Liquid Chromatography, Centrifuges, etc.

- Protein purification and isolation, SDS-PAGE, Native PAGE, Enzyme purification from plant cells, Polymerase Chain Reaction, Isolation of Plant and Plasmid DNA.

Place: IARI, New Delhi-16

(Dr. Renu Singh)