

Richa Kothari, M.Phil.(Energy & Environment), Ph. D. (Energy & Environment)
(<https://scholar.google.com/citations?user=tBD5uxIAAAAJ&hl=en>)



Designation: Associate Professor

Worked as: WARI Fellow, Robert B. Daugherty Water for Food Institute, University of Nebraska-Lincoln, Lincoln, NE, USA-68588

Citations: 1340 ; h-index: 15; i10-index: 17 (Google Scholar)

RESEARCH INTERESTS

Bio-energy production approaches, Low-cost wastewater treatment technologies.

Research student Supervision

Ph. D Guidance Ongoing: (05)

Thesis Awarded (02)

□ Virendra Kumar - August 2011; **Title:** Potential assessment of biogas and biohydrogen from selected industrial waste. Thesis Awarded, October 2015.

□ Vinayak V. Pathak – March 2012; **Title:** An approach of Phycoremediation and Biodiesel production using microalgae *Chlorella pyrenoidosa* from Industrial wastewater. (Co-guide).

Ongoing: 05

□ Shamshad Ahmad – October 2013; **Title:** Spectral conversion of light with different induced stress condition to improve algal growth using wastewater for bioenergy application.

□ Arya Pandey-September 2014; **Title:** Studies on Thermal Energy storage based photobioreactor for algal biomass cultivation and its use for different biofuel production.

□ Baqir Mohammad-September 2014; **Title:** Carbon Sequestration Potential and Bio Energy Assessment of Plantation Forest in Rural Area of Mau District: A Case Study of Kahinaur, U.P., India. (Co-guide)

□ Pradeep Kumar Majhi-September 2015; **Title:** Detoxification and Decolourization of Industrial wastewater by Solar energy Coupled with Algal Treatment System

□ Rifat Azam- 2016; Course work; (Under Super numeric Quota)

Supervision of Master of Environmental Science (Ms) Thesis: Completed: 28

**Supervision of Mater of Technology in Energy and Environment (M. Tech (E&E))
Thesis: Completed: 15**

M. Phil Thesis supervision:

Title: A lab-scale performance analysis for biogas production using co-digested substrates at selected temperature ranges. **Student:** Saubhagya Singh (Bundelkhand University)

LIST OF PUBLICATIONS (SCI Journal) and Citation Index

(a) INTERNATIONAL & NATIONAL JOURNALS

Year: 2017

1. Vinod Kumar, Jogendra Singh, V. V. Pathak, Shamshad Ahmad, **Richa Kothari**; **Experimental and kinetics study for phytoremediation of sugarmill effluent using water lettuce (*Pistia stratiotes* L.) and its end use for biogas production; 3-Biotech; (2017) 7:330; DOI 10.1007/s13205-017-0963-7**
2. Shamshad Ahmad, Vinayak V. Pathak, **Richa Kothari**, Rajeev Pratap Singh; **Prospects for pretreatment methods of lignocellulosic waste biomass for biogas enhancement: opportunities and challenges, Biofuels(2017):<https://doi.org/10.1080/17597269.2017.1378991>**
3. Richa Kothari, Arya Pandey, Shamshad Ahmad, Ashwani Kumar, Vinayak V. Pathak, V. V. Tyagi. Microalgal cultivation for value-added products: a critical enviro-economical assessment, 3-Biotech. August-2017; Vol. 07; (04); Article: 243. (**Impact Factor-1.361**)
4. Mohd Baqir, Ashish K. Mishra, **Richa Kothari**, Rana Pratap Singh. Calorific Value and Fuel Wood Consumption Patterns of a Forest Plantation Made by Villagers at Kahinure (Distt Mau), Uttar Pradesh, India. *Climate Change and Environmental Sustainability*. Vol.05; No.1; April 2017; pp.35-41.
5. Richa Kothari, Virendra Kumar, Vinayak V. Pathak, V.V. Tyagi. Sequential hydrogen and methane production with simultaneous treatment of dairy industry wastewater: Bioenergy profit approach, *International Journal of Hydrogen Energy*. Vol.42 (8); Feb. 2017; pp. 4870-4879, (**Impact Factor-3.582**)
6. Richa Kothari, Virendra Kumar, Vinayak V. Pathak, Shamshad Ahmad, Ochieng Aoyi, V.V.Tyagi; A critical review on factors influencing fermentative hydrogen production, *Frontier of Biosciences* Vol.22; March 2017; pp.1195-1220 (**Impact Factor-2.8**)
7. Richa Kothari, Vinayak V. Pathak, Arya Pandey, Shamshad Ahmad, Chandni Srivastava, V.V. Tyagi, A novel method to harvest *Chlorella* sp. with low cost bio-flocculent: Influence of temperature with kinetic and thermodynamic functions, *Bioresource Technology*, Vol. 225; Feb.2017; pp.84-89, (**Impact Factor-4.917**)

Year: 2016

8. V. Kumar, Richa Kothari, V.V.Pathak and S K Tyagi, Optimization of Simple Sugars and Process pH for Effective Biohydrogen Production Using *Enterobacter Aerogens*: An Experimental Study, *Journal of Scientific & Industrial Research* Vol 75, October 2016, pp. 626-631(**Impact Factor-0.385**)
9. Virendra Kumar, Richa Kothari, Vinayak V. Pathak, S. K. Tyagi, Optimization of Substrate Concentration for Sustainable Biohydrogen Production and Kinetics from Sugarcane Molasses: Experimental and Economical Assessment; *Waste Biomass Valorization*, (**Impact Factor-1.337**)
10. Vinayak V. Pathak, Shamshad Ahmad, Arya Pandey, Vineet V. Tyagi, D. Buddhi, Richa Kothari; Deployment of Fermentative Biohydrogen Production for Sustainable Economy in Indian Scenario: Practical and Policy Barriers With Recent Progresses, *Curr Sustainable Renewable Energy Rep. Springer*. DOI 10.1007/s40518-016-0052-2

11. Vinayak V. Pathak, Richa Kothari, A. K. Chopra, Shamsad Ahmad, A. K. Pandey, N. A. Rahim; Effect of solvent extraction methods of oil yields and its parametric feasibility with *C. pyrenoidosa*. IEEE conference Proceeding, 14-15 November CEAT-2016, Kuala Lumpur, Malaysia.(<http://digital-library.theiet.org/content/conferences/10.1049/cp.2016.1344>).

12. D.S. Malik, C.K. Jain, Anuj K. Yadav, Richa Kothari, Vinayak V. Pathak, Determination of Adsorption Isotherms and Kinetic Parameters for Biosorption of Cu (II) on Raw Pine Needles: An Experimental Study , International Journal of Innovative Research in Science, Engineering and Technology , Vol. 5, Issue 10, October 2016

13. D.S. Malik, C.K. Jain, Anuj K. Yadav, Richa Kothari, Vinayak V. Pathak, Removal of methylene blue dye in aqueous solution by agricultural waste, International Research Journal of Engineering and Technology , Volume: 03 Issue: 07 -2016

12. Barkha Vaish, Pooja Singh, **Richa Kothari**, Vaibhav Srivastava, Prabhat Kumar Singh, Rajeev Pratap Singh. The potential of bioenergy production from marginalized lands and its effect on climate change. April-2016, Climate Change and Environmental Sustainability. 4(1): 7–13.

13. V.V. Tyagi, A.K. Pandey, D. Buddhi, **Richa Kothari**. Thermal performance assessment of encapsulated PCM based thermal management system to reduce peak energy demand in building. 2016; Energy and Buildings; (**Impact factor-3.167**)

Year: 2015

14. Vinayak V. Pathak, **Richa Kothari**, A. K. Chopra, D. P. Singh. Experimental and Kinetic Studies for Phycoremediation and Dye Removal by *Chlorella Pyrenoidosa* from Textile Wastewater; International Journal of Environmental Management, 2015, Nov 1;163:270-7 (**Impact Factor- 4.010**)

15. **Richa Kothari**, V. V. Pathak , Shamsad Ahmad , Tanu Allen. Developments in Bioenergy and Sustainable Agriculture Sectors for Climate Change Mitigation in Indian Context: A State-of-Art; Climate Change and Environmental Sustainability, October, 2015, 3(2):93-103. (ISSN:2320-6411)

16. Virendra Kumar, **Richa kothari**, Sohini Singh. Dark Fermentation: a green way to produce hydrogen and methane, International Journal of Science, Technology & Society, Jan - June, (2015). Volume. 1, No. 1(ISSN - 2395-1605).

17. Satyendra Singh, B.C. Yadav, Monika Singh, **Richa Kothari**. A review Report on Nanostructured Ferrites as Liquefied Petroleum Gas Sensor. International Journal of Science, Technology & Society, Jan - June, (2015). Volume. 1, No. 1(ISSN - 2395-1605).

Year: 2014

18. Vinayak V. Pathak, D. P. Singh, **Richa Kothari**, A. K. Chopra. Phycoremediation of textile wastewater by unicellular microalga *Chlorella pyrenoidosa*, Cellular and Molecular Biology 60 (5), 35-40; 2014. (**Impact Factor-1.14**).

19. **Richa Kothari**, V.V.Tyagi, S.K Tyagi, Different aspects of Dry anaerobic digestion for bio- energy: An overview, Renewable and Sustainable Energy Reviews, 174-195 (2014) (**Impact Factor-8.050**).

20. Tyagi V. V., Pandey A. K., **Richa Kothari**, Tyagi S.K. Tyagi, Thermodynamics and Performance Evaluation of encapsulated PCM based energy storage system for heating application in buildings. Journal of Thermal Analysis and Calorimetry. 2014, 15(1)915-924. (**Impact Factor: 1.953**)

21.A Pathak, **Richa Kothari**, MG Dastidar, TR Sreekrishnan, D. J Kim Comparison of bioleaching of heavy metals from municipal sludge using indigenous sulfur and iron-oxidizing microorganisms: Continuous stirred tank reactorstudies, Journal of Environmental Science and Health, Part A 49 (1), 93-100 (2014) (**Impact Factor - 1.7**) .

Year: 2013

22. **Richa Kothari**, Ravindra Prasad, Virendra Kumar, D. P. Singh, Production of Biodiesel from microalgae *Chlamydomonas polypyrenoideum* grown on dairy industry wastewater, International Journal of Bioresource Technology. 2013, 144, 499-503. (ISSN: 0960-8524, **Impact Factor: 4.98**)

Year: 2012

23. Tyagi V.V., Buddhi D., **Kothari Richa**, Tyagi S.K., Phase change material (PCM) based thermal management system for cool energy storage application in building: An experimental study, International Journal of Energy & Buildings, 51, 248-254, 2012. (ISSN: 0378-7788);(**Impact Factor – 4.067**)

24. **Kothari Richa**, Pathak Vinayak V., Kumar Virendra, Singh D. P., Experimental study for growth potential of unicellular alga *Chlorella pyrenoidosa* on dairy waste water: An integrated approach for treatment and biofuel production. (2012). International Journal of Bioresource Technology, Volume 116. Page 466-470. (ISSN: 0960-8524, **Impact Factor – 4.98**)

25. Kothari Richa, Singh D. P., Tyagi V. V. and Tyagi S. K., Fermentative Hydrogen Production – An Alternative Clean Energy Source, Renewable and Sustainable Energy Reviews, 16, 2337– 2346, 2012. (ISSN:1364-0321;**Impact Factor -8.050**)

26. Panwar N. L., **Kothari Richa**, Tyagi V. V., Thermo chemical conversion of biomass – Eco friendly energy routes, Renewable and Sustainable Energy Reviews, 16, 1801– 1816, 2012, (ISSN:1364-0321; **Impact Factor-8.050**)

27. Tyagi V. V., Panwar N. L., Rahim N. A. and **Kothari Richa**, Review on Solar Air Heating System with and without Thermal Energy Storage System, Renewable and Sustainable Energy Reviews, 16, 2289– 2303, 2012. (ISSN:1364-0321; **Impact Factor -8.050**)

Year:2011

28. Singh R. P., Tyagi V.V, Allen Tanu, Hakimi M. Ibrahim and **Kothari Richa**, An Overview for Exploring the Possibilities of Potential Energy Generation from Municipal Solid Waste (MSW) in Indian Scenario, Renewable and Sustainable Energy Reviews, Volume 15, Issue 9, December 2011, 4797-4808. (ISSN:1364-0321; **Impact Factor-8.050**)

29. **Kothari Richa**, Kumar Virendra, & Tyagi Vineet Veer. Assessment of waste treatment and energy recovery from dairy industrial waste by anaerobic digestion. The Official Journal of Institute of Integrative Omics and Applied Biotechnology (IIOABJ), 2011; Vol. 2(1) 1-6. (ISSN: 0976-3104)

Year:2010

30. **Kothari Richa**, Tyagi V.V. & Pathak A. Waste-to-energy: a way from renewable energy sources to sustainable development. (2010). Renewable and Sustainable Energy Reviews, Volume 14, Page 3164-3170. (ISSN:1364-0321;**Impact Factor -8.050**)

Year: 2003-2008

31. **Kothari Richa**, Buddhi D. & Sawhney R.L. Comparison of environmental and economic aspects of various hydrogen production methods. Renewable and Sustainable Energy Reviews, Volume 12, Issue 2, February 2008, Page 553- 563. (ISSN:1364-0321;**Impact Factor -8.050**)

32. **Kothari Richa**, Buddhi D. & Sawhney R.L. Optimization of electrolytic input power for the production of hydrogen, International Journal of Hydrogen Energy (IJHE) 2006; Volume 31, Issue 15, Page 2329-2336. (**Impact Factor – 3.582**)

33. Buddhi D., **Kothari Richa** & Sawhney R.L. An experimental analysis to study the effect of electrolytic concentration on the rate of hydrogen production. International Journal of Green Energy, 2006; volume 3, No. 4, Page 381-395. (**Impact Factor: 1.215**)

34. **Kothari Richa**, Buddhi D. & Sawhney R.L. Studies on the effect of temperature of the electrolytes on the rate of hydrogen production. International Journal of Hydrogen Energy (IJHE) 2005; Volume 30, Issue 3, Page 261-263. (**Impact Factor – 3.582**)

35. **Kothari Richa**, Buddhi D. & Sawhney R.L. Sources and technology for hydrogen production: a review. International Journal of Global Energy Issues (IJGEI) 2004; Volume 21, No. 1& 2, Page 154-178.
36. Buddhi D., Tyagi Punam, Sawhney R.L. **Kothari Richa**, Ground water quality of Pithampur Industrial area: opinion survey of the residents. Indian Journal of Environmental Protection (IJEP) 2004, Volume 24, No. 3, Page 167-172.
37. Tyagi Punam, Buddhi D., Sawhney R.L. & **Kothari Richa**, A correlation among physico-chemical parameters of Ground water in and around Pithampur Industrial Area of M.P., India. Indian Journal of Environmental Protection (IJEP) 2003; Volume 23, No. 11, Page 1276-1282.

CHAPTERS IN EDITED BOOK

38. Shamsad Ahmad, Arya Pandey, **Richa Kothari**, Vinayak. V. Pathak, Vineet. V. Tyagi. Closed Photobioreactors: Construction Material and Influencing Parameters at the Commercial Scale; Chapter_ID_48469; Photobioreactors: Advancements, Applications and Research; **Editors:** Yiu Fai Tsang (The Education University of Hong Kong, Hong Kong SAR, China); Nova Science Publishers, Inc., NY. March 2017.
39. Shamsad Ahmad, Arya Pandey, Vinayak Vandan Pathak, Vineet Veer Tyagi, **Richa Kothari**. Phycoremediation: Algae as ecofriendly tools for the removal of heavy metals from wastewaters. Chapter no. 12; Bioremediation of Industrial Wastes for Environmental Safety. Editor: R.N.Bhargava. Springer International. (Article in Process).
40. **Richa Kothari**, Arya Pandey, Virendra Kumar, V.V. Tyagi. Algae based biohydrogen: Current status of bioprocess routes, economical assessment and major bottlenecks, Algae and Environmental Sustainability. Springer. Editors: **Singh**, Bhaskar, **Bauidh** Kuldeep, **Bux**, Faizal (Eds.). 2016. (ISBN 978-81-322-2641-3)
41. Atin Kumar Pathak, **Richa Kothari**, Har Mohan Singh, Saubhagya Singh, V.V. Tyagi and D.P. Singh. Microbes: A Viable Mean for Wastewater Treatment and Source of Bioenergy (2016); Microbes and environmental management, Studium Press, Edited by: Prof. D. P. Singh and Dr. Jay Shankar Singh.
42. Atin Kumar Pathak, V. V. Tyagi, Har Mohan Singh, Vinayak V. Pathak, **Richa Kothari**, Chapter-2, Membrane-Less Microbial Fuel Cell: A Low-Cost Sustainable Approach for Clean Energy and Environment, Emerging Energy Alternatives for Sustainable Environment, TERI Press, Editors: D. P. Singh, Richa Kothari, V.V. Tyagi; ISBN-9788-1799-34111. March 2016
43. Vijay K. Jayswal, V. V. Tyagi, **Richa Kothari**, D. P. Singh, S. K. Samdarshi, Chapter-5, Role and Initiatives of Indian Government Policies for Growth of Wind Energy Sector, Emerging Energy Alternatives for Sustainable Environment, TERI Press, Editors: D.P.Singh, Richa Kothari, V.V. Tyagi; ISBN-9788-1799-34111. March 2016
44. Sonal Dixit, **Richa Kothari**, D.P. Singh, Chapter-17, Vermicomposting: A Potential Tool for Sustainable Management of Solid Waste, Emerging Energy Alternatives for Sustainable Environment, TERI Press, Editors: D. P. Singh, Richa Kothari, V.V. Tyagi; ISBN-9788-1799-34111. March 2016

45. Arya Pandey, Shamsad Ahmed, Virendra Kumar, Pratibha Singh, **Richa Kothari**, Chapter-20, Solar Photocatalytic Treatments of Wastewater and Factors Affecting Mechanism: A Feasible Low-Cost Approach, Emerging Energy Alternatives for Sustainable Environment, TERI Press, Editors: D. P. Singh, Richa Kothari, V.V. Tyagi; ISBN-9788-1799-34111. March 2016

46. Bal Chandra Yadav, Praveen Kumar, Satyendra Singh, **Richa Kothari**, Chapter-23, Development in Metal Oxide Nanomaterial-based Solar Cells, Emerging Energy Alternatives for Sustainable Environment, TERI Press, Editors: D. P. Singh, Richa Kothari, V.V. Tyagi; ISBN-9788-1799-34111. March 2016

47. Virendra Kumar, **Richa Kothari**, S.K. Tyagi. Biological hydrogen production by facultative anaerobic bacteria *Enterobacter aerogens* (MTCC 8100), Recent Advances in Bioenergy Research, Volume III, Sardar Swaran Singh National Institute of Renewable Energy Kapurthala, India, 2014. (ISBN 978-81-927097-2-7).

48. Vinayak V. Pathak, **Richa Kothari**, A.K. Chopra, Lhaihoichong Singson, Assessment of solid waste management and energy recovery from waste materials in Lucknow zoo: A Case study, Recent Advances in Bioenergy Research, Volume III, Sardar Swaran Singh National Institute of Renewable Energy, Kapurthala, India, 2014. (ISBN 978-81-927097-2-7).

49. **Kothari Richa**, Kumar Virendra, Panwar N.L., Tyagi V.V., Municipal Solid Waste Management Strategies for Renewable Energy Options, Chapter-2.8, August 2013; Sustainable Bioenergy Production; Editor: L. wang, CRC Press, Taylor & Francis Group; ISBN: 1466505524

50. Pathak Vinayak V., Chopra A.K., **Kothari Richa**, Tyagi V.V., Growth Characteristics of *C. Pyrenoidosa* cultured in nutrient enriched Dairy wastewater for pollutant reduction and Lipid productivity, Recent Advances in Bioenergy Research, Volume II, Sardar Swaran Singh National Institute of Renewable Energy Kapurthala, India, December 2012 (ISBN 978-81-927097- 1-0).

51. Verma Neetu, **Kothari Richa**, Allen Tanu, Singh D.P., Assessment of lipid productivity of *Chlamydomonas polypyrenoides* cultured in tannery industry wastewater. Recent Advances in Bioenergy Research, Volume II, Sardar Swaran Singh National Institute of Renewable Energy Kapurthala, India, December 2012 (ISBN 978-81-927097-1-0).

52. **Kothari Richa**, Pathak Vinayak V., Singh D. P., Biodiesel production from algal species grown on dairy wastewater; Recent Advances in Bioenergy Research, Volume I, Sardar Swaran Singh National Institute of Renewable Energy Kapurthala, India, November 25-26, 2011 (ISBN 978-81-927097-0-3).

53. **Kothari Richa**, Verma Sarita and Tyagi V. V., Vermicomposting parameters play an effective role in green sustainable approach, Organic fertilizers: Type Production and Environmental Impact, Editor-Dr. Rajeev Pratap Singh 85-96 (2011); ISSN/ISBN No.: 978-1-62081-422-2

KEYNOTE / INVITED SPEAKER

1. **Kothari Richa**, “Carbon-water foot printing : an eco-frirndly approach with algal biomass”, International Conference on Renewable Energy for Sustainable Environment:

challenges and Remedies; Department of Energy Management; Shri Mata Vaishno Devi University; Katra, March 20-21, 2017 (Invited Lecture and and Session Chair)

2. Kothari Richa, "Emerging Challenges in wastewater treatment and its potential application for society", 3rd LUSCON-2015 at Lucknow on 31st October-2nd November 2015.(Invited speaker)

3. Kothari Richa, in "Water and Wastewater Management Summit" at Centre for Renewable Energy and Water, Vaal University of Technology, Johannesburg, South Africa on February 25, 2015. (Keynote speaker)

4.Kothari Richa, "New and Renewable Energy, Innovation and Inclusive Growth", BRIDGES-2015. 16-17th January 2015. DST-CPR, BBAU at Lucknow. (Session Chair)

BOOK (S) PUBLISHED:

1. Sohini Singh, Tanu Allen, Richa Kothari, Basic Environmental Sciences for Under Graduates. Published by Vayu Education of India, ISBN-978-83758-27-2, 2014.

2. D. P. Singh, Richa Kothari, V. V. Tyagi, Emerging energy alternatives for sustainable environment; TERI Publication House (*In Press*) Edited Book, TERI Press TERI II Habitat Place, Lodhi Road II New Delhi 110 003

Editorial Board Member:

1. International Journal of Science, Technology & Society (Associate Editor) (ISSN - 2395-1605); B.B.A.University, Lucknow

2. IET Renewable Power Generation, Online ISSN 1752-1424

3. International Journal of Applied and Natural Science (Print ISSN: 0974-9411 | Online ISSN: 2231-5209) (Member)

4. International Journal of **Environmental and Social Sciences** (Member), Open Science Publications. ISSN Number: 2454-5953

5. International Journal of Biomass Conversion and Biorefinery; ISSN: 2190-6815 (print version); ISSN: 2190-6823 (electronic version); Journal no. 13399.