

BIO-DATA

DEEPAK SINGH

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Academic details

Degree	Examination Passed / Degree	Year of Passing	Institute	Board / University	Subject / Discipline / Specialization	Class / Division
10 th	High school	2005	SVM, Dibiyaapur	UP Board	Science	First
12 th	Intermediate	2007	R.B.S. Inter college, Agra	UP Board	Mathematics	First
UG Degree	B.Tech.	2011	R.B.S. Engineering Technical Campus, Agra	GBTU (Now AKTU), Lucknow	Chemical Engineering	First
PG Degree	M. Tech.	2014	Z.H.C.E.T.	AMU, Aligarh	Chemical Engineering	First with honors
Doctoral	Ph.D.	2021	IET Lucknow	AKTU, Lucknow	Chemical Engineering	Awarded

PhD Research

(Annexure- 1)

“Experimental and Computational Studies of Microwave and Solar Dried Food Product”

M.Tech Thesis

(Annexure- 2)

“Microwave Heating of a Food Material: Modeling and Simulation”

Funded Project: 01

(Annexure- 3)

Publications

(Annexure- 4)

- *Book Chapters* : 02
- *Journals* : 23
- *Conferences* : 27

Employment Record

(Annexure- 5)

Subjects Taught

(Annexure- 6)

List of B. Tech Projects Supervised

(Annexure- 7)

FDP/STC/Conferences/Workshop attended

- *Faculty Development Program:* 17 (Annexure- 8)
- *Conferences/ Workshops/ Short term courses:* 31 (Annexure- 9)

Extra-Curricular activities & other activities

Sr.No. Particulars

1. One month summer training at **“IOCL Mathura (U.P)** in the month of July, 2010.
2. Winner of TECH-G the poster presentation in **ABHYUDAYA** at RBSETC, Agra a national level symposium in the year 2010.
3. **Exam invigilator** in Balwant Vidya Peeth Rural Institute, Bichpuri Campus Agra.
4. Worked as **Exam Evaluator** in **AKTU & IET Lucknow** exam evaluation work.
5. Paper setter in **Jiwaji University, AKTU and IET Lucknow** .
6. Member of **“The Indian Science Congress Association”** Kolkata.
7. Member of **Organizing Committee** in one week FDP **“Advances in Renewable and Bioenergy”** by **TEQIP-III, IET, Lucknow** from 19/10/2019 to 23/10/2019.
8. Member of **Organizing Committee** in one week FDP **“Next Generation of Chemical Manufacturing & Waste Management”** by **AICTE & AKTU, IET, Lucknow** from 29/07/2020 to 02/08/2020
9. One day training on **“Institutional training Programme”** on **“Oil Conservation”** organised by Petroleum Conservation Research Association (PCRA), North Region on 28/11/2020.
10. Member of **Organizing Committee** in **One week STC program** on **“Sustainable Trends in Energy & Environment”** by **TEQIP-III** at IET, Lucknow from 06/02/2021 to 10/02/2021.
11. Member of **Organizing Committee** in **One week STC program** on **“Renewable Energy & Effluent Treatment (REET-2021)”** by **TEQIP-III** at IET, Lucknow from 01/03/2021 to 05/03/2021.
12. Member of **“Hong Kong Chemical, Biological& Environmental Engineering Society (HKCBEEES)”**, Hon Kong.
13. Two week administrative training in **“UP CM fellowship Program”** organised by Planning Department. Up government at SIRD Lucknow from 10/10/2022 to 21/10/2022.

Software/ simulation tools handled

ASPEN PLUS, MATLAB, CHEM CAD, and ORIGIN LAB

Areas of interest

Renewable Energy, Food Preservation, Modeling and Simulation, Process Equipment Design, Process Calculations, and Transport Phenomena.

References

Dr. Dhananjay Singh Professor Department of Chemical Engineering IET, Lucknow	Dr. G.L. Devnani Associate Professor Department of Chemical Engineering HBTU, Kanpur	Dr. Balendu Shekher Giri Assistant Professor Sustainability Cluster, University of Petroleum & Energy Studies, Dehradun
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Declaration

I hereby declare that the information furnished above is true to the best of my knowledge.

Date: 26/11/2023

Place: Lucknow


(DEEPAK SINGH)

PhD Research

“Experimental and Computational Studies of Microwave and Solar Dried Food Product”

Present research work is carried out to explore the drying action on food stuff through microwave heating and solar drying methods for preservation and better shelf life. Therefore, a modified indirect type solar dryer has been fabricated and installed on the roof of our department. A microwave oven is also installed in the Institute of Engineering and Technology, Lucknow. The experimental and computational studies of *Solanum tuberosum* (potato) food samples through microwave heating and solar drying have been accomplished with some key findings:

- The maximum temperature of microwave heated sample has been achieved up to 85⁰C within 10 min drying time at minimum microwave power level of 100W while a solar-dried sample has achieved a maximum temperature of 58.2⁰C after spending 120 min in the dryer.
- A microwave heated food sample loses the moisture content quickly in comparison to the solar-dried food samples.
- Due to the slow drying process, solar-dried samples have shown a maximum drying rate in comparison to the microwave heated samples.
- Due to the higher utilization of the heat by the food samples, a domestic microwave oven has shown higher drying efficiency in comparison to the solar dryer.
- In the color analysis of the food samples, a microwave heated food sample turned in to brown from yellow color but a solar-dried food sample sustained its original yellow color.
- SEM analysis of a microwave heated *Solanum tuberosum* food sample has shown cracks on the surface, but in solar-dried food samples, no such types of cracks were found. As a part of this, some unwanted fungal growth has been detected in a solar-dried food sample.
- By an economic analysis a domestic microwave oven has shown a payback period of 3.27 years but a fabricated solar dryer has shown better payback period of 1.50 years.

The conclusive statement of the above-listed points is that sometimes microwave oven-based heating is better than solar drying but due to negligible operating cost, negligible solar energy cost, better payback period, and higher drying rate, a solar dryer can be a better option for food preservation.

Annexure- 2

M.Tech Thesis

“Microwave Heating of a Food Material: Modeling and Simulation”

In this study, a mathematical model of a potato slab, describing the drying of potato is developed and successfully solved. The governing linear partial differential equations are solved by 4th order Runge-Kutta method and program is solved by MATLAB software for various parameter values with following conclusions:

- Temperature distribution depends on the power and drying time in microwave oven. With increasing the power, the product temperature is also increased along with thickness.
- It is concluded that temperature of product depends on the shapes of the sample and increase or decrease with shape geometry and surface area i.e. (cylindrical, spherical).
- Moisture distribution depends on the power and drying time in microwave oven. Initially there was a small reduction in moisture content, but when we increased the microwave power, then moisture is evaporated from the potato slab.
- It is concluded that the drying rate of the potato slab also a dependent parameter of power. Maximum power (i.e. 1250W), the value of drying rate is maximized.
- Drying efficiency is also power depend parameter. 375W is optimum microwave power level because of this power; the value of drying efficiency was maximized.

- The model and experimental data (validation data for temperature) for various drying parameters such as Moisture contents, drying rate, and drying efficiency are approximately shown closer to the values. In case of drying parameters, due to some experimental error the deviation is around $\pm 5\%$.

Annexure- 3

Funded Project

Ongoing project, funded by **Uttar Pradesh Council of Science and Technology (UPCST)** (*Letter No. CST/D-1156*) “*Development of prototype for production of potable water through solar desalination unit integrated with heat exchanger & water based nano fluids*” of worth **Rs. 7,80,000.00**.

Annexure- 4

List of Publications

Book Chapters:

1. G.L. Devanani, Himani Agrawal, **Deepak Singh**, Suresh Kumar Patel (2022) “Physical and biological treatment” Natural fiber composites, (CRC Press, Taylor & Francis Group) (ISBN 9781032063065), 1-18.
2. Dhananjay Singh, **Deepak Singh**, Suresh Kumar Patel “An Exploration of some essential inorganic nanofillers” Nanofillers: Fabrication, Characterization & Applications of inorganic nanofillers, (CRC Press, Taylor & Francis Group) (ISBN 9781003279389), 1-16.

In Journals:

1. **Deepak Singh**, Mukul Sengar, Suresh Kumar Patel, Dilip Kumar, Dharm Pal, Balendu Shekhar Giri, Dhananjay Singh (2023) “Drying characteristics of thin layer of Potato (*Solanum tuberosum*): Experimental and computational studies” *Environmental Science and Pollution Research*. (Springer/SCI/IF: 5.190).
2. **Deepak Singh**, Sunita Singh, Suresh Kumar Patel, Shishir Sinha, Raj Kumar Arya, Dhananjay Singh (2022), “Experimental investigation of different shaped microwave heated potatoes: Thermal and quality characteristics analysis for food preservation” *Environmental Science and Pollution Research*, 30, pages 8416–8428 . (Springer/SCI/IF: 5.190)
3. **Deepak Singh**, Suresh Kumar Patel, Dhananjay Singh (2021). “Computational studies of drying characteristics in thin layer microwave heated *Solanum Tuberosum*” *Chemical Papers*, Vol. 75 (6), 2727-2735. (Springer /SCI/IF: 2.146)
4. **Deepak Singh**, Dhananjay Singh, Sattar Husain (2020). “Computational analysis of temperature distribution in microwave-heated potatoes” *Food Science and Technology International*, Vol. 26(6), 465-474. (SAGE /SCI/ IF: 2.638)
5. **Deepak Singh**, Dhananjay Singh, Mukul Sengar, Suresh Kumar Patel (2020) “Mathematical modeling for drying of *Solanum Tuberosum* under the indirect type solar dryer” *Journal of the Indian Chemical Society*, Vol.97 (10a) 1720-1724. (Elsevier/SCI/ IF: 0.243)
6. Dhananjay Singh, **Deepak Singh**, Vinay Mishra, Jyoti Kushwaha, Rahul Dev, Suresh Kumar Patel, Ravi Shankar, Balendu Shekhar Giri,(2023) “Sustainability issues of solar desalination hybrid systems integrated with heat exchangers for the production of drinking water: A review”, *Desalination*, Vol. 566, 116930. (Elsevier/SCI/ IF: 9.9)
7. Manish Choudhary, Dhananjay Singh, G. L. Devnani, Sandesh Kumar Jain, Raj Kumar Arya, **Deepak Singh**, Vinay Mishra (2023) “Sustainable valorization of rice husk: thermal behavior and kinetics after chemical treatments,” *Biomass Conversion and Biorefinery*. (Elsevier/SCI/ IF: 4.0)
8. Manish Choudhary , Dhananjay Singh , Sandesh K. Jain , **Deepak Singh** , G.L. Devnani , Sunita Singh, Anil Kumar Patel, Reeta Rani Singhania, Balendu Shekhar Giri, Manish Kumar (2023) “Thermal and mechanical investigation of chemically treated hybrid biomass epoxy bio-composite: An approach of pyrolysis kinetics” *Bioresource Technology Reports*, Vol. 23,101589. (Scopus indexed)

9. Sunita Singh, **Deepak Singh**, Manish Chaoudhary, Vinay Mishra, Shiv C. Prajapati, Anshuman Mishra, Balendu S. Giri, Dhananjay Singh (2023) “Phyto-Pharmacognostical and Hypocholesterolemic Activity of *Morus alba* L.” *European Chemical Bulletin*, Vol. 12 (10), 6525-6543(**Scopus indexed**)
10. Anshuman Mishra , Dhananjay Singh, Ram Sharan Singh, **Deepak Singh**, Vinay Mishra, Balendu Shekher Giri (2023)“Effect of noble bacteria *Ochrobactrum intermedium* (Alhpa -22) on decolorization of methyl orange dye in a bioreactor” *International Journal of Chemical Reactor Engineering (De Gruyter/SCI/IF: 1.636)*
11. Mukul Sengar, Reeta Rani Singhania, **Deepak Singh**, Pradeep Kumar Mishra, Dhananjay Singh, Manish Kumar, Balendu Shekher Giri (2023) “Drying kinetics, thermal and morphological analysis of starchy food material: Experimental investigation through an induced type solar dryer” *Environmental Technology & Innovation*, 31, 103221 (**Elsevier/SCI/ IF:7.758**)
12. Mahendra Singh, **Deepak Singh**, Piyush Pal , Sunita Singh , Dhananjay Singh , Balendu Shekhar Giri (2023) “Synthesis and performance evaluation of *Beta vulgaris* based dye-sensitized organic solar cell” *Environmental Technology & Innovation*,31, 103220. (**Elsevier/SCI/ IF: 7.758**)
13. Sunita Singh, Mukul Sengar, Jyoti Kushwaha, **Deepak Singh**, Alka Tripathi, Dhananjay Singh (2023) “Hypolipidemic Activity of Standardized Crude Leaf Extracts of *Morus nigra* L.” *Journal of Pharmaceutical Sciences and Research* Vol. 15(5), 1086-1091. (**PharmaInfo Publication/Scopus indexed**)
14. Sunita Singh, Mukul Sengar, **Deepak Singh**, Vinay Mishra, Jyoti Kushwaha, Balendu S, Giri, Dhananjay Singh (2023) “Antidiabetic activity and biochemical parameter estimation of *Morus nigra* in SD Rat” *Journal of Pharmaceutical Sciences and Research* Vol. 15(6), 1150-1155. (**PharmaInfo Publication/Scopus indexed**)
15. Manish Chaoudhary, Dhananjay Singh, Sandesh Kumar Jain, Shriram S, Sonawane, **Deepak Singh**, G.L. Devnani, Keerti Srivastava (2023), “Kinetics modeling & comparative examine on thermal degradation of alkali treated *Crotalaria juncea* fiber using model fitting method” *Journal of the Indian Chemical Society*, 100, 100918 (**Elsevier /SCI/IF:0.243**)
16. Aradhya Dev Srivastav, Vireshwar Singh, **Deepak Singh**, Sunita Singh, Suresh Kumar Patel, Dilip Kumar, Sudeep Yadav, Balendu Shekhra Giri, Dhananjay Singh (2022), “*Nelumbo nucifera* leaves as source of water-repellent wax: Extraction through polar and non-polar organic solvents” *Journal of the Indian Chemical Society*, 99, 100632 (**Elsevier /SCI/IF:0.243**)
17. Sunita Singh, Aradhya Dev Srivastava, **Deepak Singh**, Bharat Mishra, Abhishek Kumar Chandra, Sudeep Yadav, Dhananjay Singh (2022) “Standardization and Hypoglycemic Activity of Hydro-Alcoholic Leaves Extract of *Morus alba*” *Der Pharma Chemica*, Vol.14(5),1-15.
18. Suresh Kumar Patel, **Deepak Singh**, G.L. Devnani, Shishir Sinha, Dhananjay Singh (2021). “Potable water production via desalination technique using solar still integrated with partial cooling coil condenser” *Sustainable Energy Technologies and Assessments*, Vol.43, 100927. (**Elsevier/SCI/ IF: 7.632**)
19. Aradhya Dev Srivastav, Vireshwar Singh, **Deepak Singh**, Balendu Shekher Giri, Dhananjay Singh (2021) “Analysis of natural wax from *Nelumbo nucifera* leaves by using polar and non-polar organic solvents” *Process Biochemistry*, Vol. 106, 96-102. (**Elsevier/SCI/IF: 4.885**)
20. Suresh Kumar Patel, Sanjay Tewari, G.L. Devnani, **Deepak Singh**, Dhananjay Singh (2021) “Desalination and water purification analysis using modified double-slope passive solar still” *ACSE Library*. 14-30.
21. Suresh Kumar Patel, Vinay Kumar Singh, Mahendra Singh, **Deepak Singh**, Dhananjay Singh (2021) “Performance enhancement of modified double slope passive solar still using different water based nanofluids” *IOP Conf. Series: Materials Science and Engineering*, 1146, 012021.
22. Suresh Kumar Patel, **Deepak Singh**, Deepesh Singh, Pradeep Kumar, Dhananjay Singh (2020) “Physico Chemical parameters analysis and water quality index (WQI) of Gomti river Lucknow, (U.P., India) using MDSS ” *Journal of the Indian Chemical Society*, Vol.97 (10a) 1725-1730. (**Elsevier/SCI/IF: 0.243**)
23. Suresh Kumar Patel, **Deepak Singh**, Brajesh Kumar, Dhananjay Singh (2020) “Solar Desalination Technology: Physicochemical Parameters Estimation of Contaminated & Treated Water of Gomti River, Lucknow (U.P.), India” *International Journal of Recent Technology and Engineering (IJRTE)*, Vol.8 (6), 686-692.(**Scopus indexed**)
24. Mukul Sengar, **Deepak Singh**, Suresh Kumar Patel, Pradeep Kumar Mishra, Dhananjay Singh “Performance evaluation of solar dryer integrated with solar panel for drying of carrot (*daucus carota*) vegetable” *Industrial Engineering and Chemistry research (ACS)* (**Under review**)

25. Dhananjay Singh, **Deepak Singh**, Jyoti Kushwaha, Vinay Mishra, Suresh Kumar Patel, Sanjay Tewari, Jian Zang, Balendu S. Giri*, Jurgen Mahlknecht, Ashok Pandey, Manish Kumar “Sustainable pathways for solar desalination using nanofluids: A critical review” *Science of The Total Environment* (Elsevier/SCI/IF: 16.8) (Accepted)

In International Conferences:

1. **Deepak Singh**, Sattar Husain, Shraddha Rani Singh “ Modeling of a microwave heated food product based on microwave powers” International conference on ‘New Approaches in Biotechnology and Biosciences (NABB-2016)’, Department of Biotechnology, R.B.S.E.T.C, Agra ,18-20 Feb,2016.
2. Rahul Kr. Singh, Shraddha Rani Singh, Kuldeep Singh, **Deepak Singh** , “Waste water treatment using microbial process” International conference on ‘New Approaches in Biotechnology and Biosciences (NABB-2016)’, Department of Biotechnology, R.B.S.E.T.C, Agra ,18-20 Feb,2016.
3. V. Rao. Bella, Shraddha Rani Singh, Mohit Nigam, Rahul Kumar Singh, **Deepak Singh** “ A review on simultaneous catalytic control of CO,HC,NOx and PM from diesel engine exhaust ” International conference on ‘New Approaches in Biotechnology and Biosciences (NABB-2016)’, Deptt of Biotechnology, R.B.S.E.T.C, Agra ,18-20 Feb,2016.
4. Shraddha R. Singh, V. Rao. Vella, Mohit Nigam, **Deepak Singh**, Rahul Kumar Singh “ A review on waste water minimization in the chemical process industries” International conference on ‘New Approaches in Biotechnology and Biosciences (NABB-2016)’, Deptt of Biotechnology, R.B.S.E.T.C, Agra ,18-20 Feb,2016.
5. **Deepak Singh**, Shraddha Rani Singh, “Designing of a Geothermal Energy Based Power System” International conference on ‘Innovative Technologies Towards Energy, Environment Food & Agriculture (ICITTEEFS 2018)’, Department Mechanical Engg., R.B.S.E.T.C, Agra ,26-28 Feb,2018.
6. **Deepak Singh**, Dhananjay Singh, Mukul Sengar, “Experimental and Computational studies of Microwave heated NRTE food” International conference on ‘Seamless Chemical Engineering in service of humanity: Innovations, Opportunity & Challenges (CHEMCON -2018)’, Department of Chemical Engg, NIT, Jalandhar ,27-30 Dec,2018.
7. Mukul Sengar, **Deepak Singh**, Shraddha Rani Singh “Production of Silica gel from rice husk ash using microwave heating” International conference on ‘Seamless Chemical Engineering in service of humanity: Innovations, Opportunity & Challenges (CHEMCON -2018)’, Department of Chemical Engg, NIT, Jalandhar ,27-30 Dec,2018.
8. **Deepak Singh**, Dhananjay Singh, Mukul Sengar, Suresh Kumar Patel “Analysis of temperature distribution in various shapes of a microwave heated potato sample by using MATLAB” International conference on ‘Innovations in Technology and management for Achieving Sustainable Development Goals (SDGs)’, JK Lakshmipat University, Jaipur ,1-3 Feb,2019.
9. **Deepak Singh**, Dhananjay Singh, Mukul Sengar, “Effect of microwave heating on pathogens in food material” Conference on “Recent Advances in Biochemical Engineering and Biotechnology (RABEB-2019)” organized by School of Biochemical Engg, IIT (BHU),Varanasi, 15-16 March 2019.
10. **Deepak Singh**, Dhananjay Singh, Mukul Sengar, “Mathematical Modeling for drying potato under indirect type solar dryer” Energy and Environmental Technologies for Sustainable Development (CHEMCON-FLUX²⁰) organized by Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, 14-16 February 2020.
11. **Deepak Singh**, Dhananjay Singh, Ankita Sharma, Mukul Sengar, “Design and Simulation of a solar dryer for NRTE foods” Innovation and Opportunities in Chemical Engineering for Sustainable Environment and Energy (IOCSE-2020) organized by Department of Chemical Engineering, RBSETC, Agra, 27-29 February 2020 (ISBN:978-93-88244-41-1).
12. Ankita Sharma, **Deepak Singh**, Mukul Sengar, “Studies of Degradation of Chlorophenols under UV and solar radiation using modified Titanium Dioxide” Innovation and Opportunities in Chemical Engineering for Sustainable Environment and Energy (IOCSE-2020) organized by Department of Chemical Engineering, RBSETC, Agra, 27-29 February 2020.
13. Mukul Sengar, Moina Athar, **Deepak Singh**, Shraddha Rani Singh “ Production of Biodiesel from waste cooking oil by microwave heating using Taguchi method” Innovation and Opportunities in Chemical Engineering for Sustainable Environment and Energy (IOCSE-2020) organized by Department of Chemical Engineering, RBSETC, Agra, 27-29 February 2020.

14. **Deepak Singh**, Mukul Sengar, Suresh Kumar Patel, Dhananjay Singh “Computational study of the performance of a solar dryer for improvement in the shelf life of the food materials” International Tribology Research Symposium organized By SRM University, Shri Mata Vaishno Devi University, CAS AKTU, 05-07 November 2020.
15. Aradhya Dev Srivastav, Vireshwar Singh, **Deepak Singh**, Dilip Kumar, Dhananjay Singh “ Comparative analysis of natural wax extracted using polar and non-polar organic solvents from Nelumbo nucifera leaves” International Conference on Biotechnology for Sustainable Agriculture, Environment and Health organized by Malaviya National Institute of Technology, Jaipur and The Biotech Research Society, India at Jaipur, 04-08 April 2021.
16. **Deepak Singh**, Dhananjay Singh, Mukul Sengar, Suresh Kumar Patel, Mohit Katiyar “Improvement in heat transfer rate by modification in design materials of a solar dryer” International Conference on Advances in Chemical, Biological and Environmental Engineering (ICACBEE-2021) organized by Malaviya National Institute of Technology, Jaipur 23-24, April 2021.
17. Mahendra Singh, **Deepak Singh**, Ravi Kumar Sonwani, Dhananjay Singh “Performance analysis of PVT hybrid system integrated with solar dryer” Virtual International Conference on Advances in Sustainable Research for Energy and Environmental Management (ASREEM-2021) organized by Department of Chemical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat (India) on 06 – 08, August 2021.
18. **Deepak Singh**, Dhananjay Singh, Suresh Kumar Patel, Balendu Shekher Giri, Sunita Varjani, “Investigation of the performance of a solar dryer integrated with PVT hybrid system for food preservation” VI ISEES International Conference on Sustainable Energy and Environmental Challenges (SEEC-2021) organized by KNIT Sultanpur, 27-29 December 2021.
19. Mahendra Singh, **Deepak Singh**, Suresh Kumar Patel, Dhananjay Singh, “Performance evaluation of photovoltaic thermal (PVT) hybrid solar dryer for drying of carrot (*Daucus Carota*) vegetable” International conference on Technological Inventions for Sustainability (CHEMCON-FLUX²²) organized by Department of Chemical Engineering, MNNIT Allahabad, Prayagraj and School of Chemical Engineering, Universiti Sains Malaysia, 14-16 April 2022.
20. Vinay Mishra, **Deepak Singh**, R S Singh, Dhananjay Singh, “Hybrid solar still: Sustainable way to produce potable water” International conference on Chemical Engineering: Enabling Transition Towards Sustainable Future (CHEMTSF-2022) organized by Department of Chemical Engineering, IIT Roorkee, 08-10 September 2022.
21. Vinay Mishra, Mukul Sengar, Jyoti Kushwaha, **Deepak Singh**, Dhananjay Singh, “Potable water production using hybrid solar still” International conference on Sustainability in Chemical Processes Through Digitalization, Artificial Intelligence and Green Chemistry (CHEMCON-2022) organized by Harcourt Butler Technical University, Kanpur, 27-30 December 2022.
22. Mukul Sengar, **Deepak Singh**, Dhananjay Singh, Pradeep Kumar Mishra, Balendu Shekher Giri, “Performance analysis of induced type solar dryer using polymethyl methacrylate polymeric sheet” International conference on Frontiers in Desalination, Energy, Environment and Material Sciences for Sustainable Development (FEEMSD-2023) organized by Madam Mohan Malaviya University of Technology, Gorakhpur, 16-17 March 2023.
23. Vinay Mishra, **Deepak Singh**, Jyoti Kushwaha, Dhananjay Singh, Suresh Kumar Patel, Balendu Shekher Giri, G L Devnani “Selection of optimum technique for the production of potable water through solar distillation” International conference on Frontiers in Desalination, Energy, Environment and Material Sciences for Sustainable Development (FEEMSD-2023) organized by Madam Mohan Malaviya University of Technology, Gorakhpur, 16-17 March 2023.

In National Conferences:

1. **Deepak Singh**, Rahul Kr. Singh, Kuldeep Singh “Drinkable water technologies for Arsenic Removal”, Conference on “Perspectives and Challenges towards Environmental Sustainability, organized by Swami Keshvanand Rajasthan Agriculture University, Bikaner and GICES, Sri Ganga Nagar, 11-13 December, 2015.
2. Shraddha R. Singh, Mohit Nigam, **Deepak Singh**, Kuldeep Singh, Rahul Kumar Singh “Waste water treatment in chemical industry using Adsorption process”, Conference on “Perspectives and Challenges

towards Environmental Sustainability, organized by Swami Keshvanand Rajasthan Agriculture University, Bikaner and GICES, Sri Ganga Nagar, 11-13 December, 2015.

3. **Deepak Singh**, Kuldeep Singh, Rahul Kumar Singh “Modeling of the fermentation in an external loop airlift reactor”, Conference on “Perspectives and Challenges towards Environmental Sustainability, organized by Swami Keshvanand Rajasthan Agriculture University, Bikaner and GICES, Sri Ganga Nagar, 11-13 December, 2015.
4. Kuldeep Singh, Vinod Kr. Yadav, **Deepak Singh**, “Removal of heavy metal from waste water for irrigation purpose”, Conference on “Perspectives and Challenges towards Environmental Sustainability, organized by Swami Keshvanand Rajasthan Agriculture University, Bikaner and GICES, Sri Ganga Nagar, 11-13 December, 2015.
5. **Deepak Singh** “Design of a nitric acid storage tank” Conference on “International Conference on Innovative Approach in Applied Physical, Mathematical/Statistical, Chemical Sciences and Emerging Energy Technology for Sustainable Development” APMSCSET-2017” organized by Krishi Sanskriti, Jawahar Lal Nehru University New Delhi, 15 January 2017.
6. **Deepak Singh**, Dhananjay Singh, Om Prakash Singh, Mukul Sengar “Modeling study of a solar dried food material” Conference on “National Conference on Advances in Chemistry, Food Technology & Environmental Sciences Towards Sustainable Development (NCSD-2019)” organized by R.B.S. Engineering Technical Campus, Agra, 08-09 March 2019.
7. Suresh Kumar Patel, Dhananjay Singh, Deepak Sahu, **Deepak Singh**, “Performance investigation of modified double slope solar still with different water based – Nano fluids” Conference on “National Conference on Sustainable Research in Energy and Environment (SREE-2021)” organized by NIT Jalandhar, 15-16 January 2021.

Annexure- 5

Employment Record

Designation	Salary	Period		Organization / Institute / College
		From	To	
Assistant Professor (Contract)	50,000/-	31/08/2021	31/07/2022	Department of Chemical Engg., IET Lucknow
Teacher Fellow	40,000/-	16/08/2018	15/08/2021	Department of Chemical Engg., IET Lucknow
Guest Lecturer	21,600/-	03/09/2016	11/06/2018	Department of Chemical Engg., R.B.S. Engineering Technical Campus, Agra
Guest Lecturer	15,000/-	01/09/2015	31/01/2016	Department of Chemical Engg., R.B.S. Engineering Technical Campus, Agra
Research Scholar	5000/-	01/07/2012	30/06/2014	Department of Chemical Engg., AMU, Aligarh

Annexure- 6

Subjects Taught

Under Graduate		Post Graduate	
Sr.No.	Courses	Sr.No.	Courses
1.	Modeling and Simulation	1.	Chemical Process Principle
2.	Process Calculations		
3.	Process Equipment Design		
4.	Process Flowsheeting		
5.	Sustainability of Environment		

Annexure- 7

List of B. Tech Projects Supervised

Sr.No.	Session	Title	Students Name	Roll No.
1.	2016-17	Modeling and Simulation of Triple effect evaporator	Jai Kishore Sharma	1300451018
			Krishan Kumar	1300451021
			Ranjit Singh	1300451028
2.	2016-17	Modeling and Simulation of Double Pipe heat exchanger	Ashwani Mishra	1300451008
			Bhanu Pratap Singh	1300451009
			Kamlesh	1300451020
3.	2018-19	Preparation of Activated Charcoal from rubber Tyre and Twigs	Aditya Singh	1505251005
			Nitin Kumar Yadav	1505251028
			Shobhit Kumat Gupta	1505251043
			Sugam Agarwal	1505251044
4.	2018-19	Manufacturing of Bioplastics from banana peels	Ananya Singh	1505251009
			Nisha Gupta	1505251027
			Supriya Sharma	1505251045
			Angad yadav	1605251903
			Namita Jaiswal	1605251908
5.	2021-22	Solar Drying of Food Stuff	Gagan Sharma	1805220027
			Abhay Chauhan	1805251002
			Ankit Singh	1805251009
			Ayush Rajput	1805251016
			Saksham Singh	1805251046
			Shivam	1805251054

Annexure- 8

Faculty Development Program /Short Term Courses attended

Sr. No.	Particulars
1.	Successfully completed (FDP101x) program on “ Foundation Program by ICT on Education ” by Indian Institute of Technology Bombay from 03/08/2017 to 07/09/2017.
2.	Successfully completed (FDP201x) program on “ Pedagogy for Online and Blended Teaching-Learning Process ” by Indian Institute of Technology Bombay from 17/09/2017 to 12/10/2017.
3.	Successfully completed FDP program on “ Finite Element Analysis Using ANSYS ” by TEQIP-III at IET, Lucknow from 08/04/2019 to 10/04/2019.
4.	Successfully completed FDP program on “ IPR, Entrepreneurship, and Innovation ” by TEQIP-III at IET, Lucknow from 01/06/2019 to 05/06/2019.
5.	Successfully completed FDP program on “ Recent Trends in High Frequency Devices & Applications ” by TEQIP-III at IET, Lucknow from 17/06/2019 to 21/06/2019.
6.	Successfully completed FDP program on “ Advances in Renewable and Bioenergy ” by TEQIP-III at IET, Lucknow from 19/10/2019 to 23/10/2019.
7.	Successfully completed FDP program on “ Emerging Technologies : Research Issues and Challenges ” by AKTU at Seth Vishambhar Nath Institute of Engineering & Technology, Barabanki from 10/06/2020 to 16/06/2020.
8.	Successfully completed FDP program on “ Next Generation of Chemical Manufacturing & Waste Management ” by AICTE & AKTU at IET, Lucknow from 29/07/2020 to 02/08/2020.
9.	Successfully completed ATAL FDP program on “ Novel Materials ” by AICTE at Government College of Engineering, Thanjavur from 17/08/2020 to 21/08/2020.
10.	Successfully completed ATAL FDP program on “ Green Technology & Sustainability Engineering ” by AICTE at Institute of Engineering and Technology Lucknow from 23/11/2020 to 27/11/2020.
11.	Successfully completed Two week FDP program on “ Renewable energy intervention in industry, commercial and domestic application ” by AICTE at Rajeev Gandhi Memorial College of Engineering and Technology, Nandyal, AP from 14/12/2020 to 26/12/2020.

12.	Successfully completed One week FDP program on “ Sustainable Technologies for Low Cost Drinking Water Production ” by AKTU at PSIT, Kanpur from 18/01/2021 to 22/01/2021.
13.	Successfully completed One week STC program on “ Sustainable Trends in Energy & Environment (STEE-2021) ” by TEQIP-III at IET, Lucknow from 06/02/2021 to 10/02/2021.
14.	Successfully completed Two week FDP program on “ Renewable energy intervention in industry, commercial and domestic application (Phase-I) ” by AICTE at Rajeev Gandhi Memorial College of Engineering and Technology, Nandyal, AP from 15/02/2021 to 27/02/2021.
15.	Successfully completed One week STC program on “ Renewable Energy & Effluent Treatment (REET-2021) ” by TEQIP-III at IET, Lucknow from 01/03/2021 to 05/03/2021.
16.	Successfully completed One week FDP cum STC program on “ Simulation, Modelling and Application of Advanced Semiconductor Devices ” by IEEE at HBTU, Kanpur from 05/07/2021 to 09/07/2021.
17.	Successfully completed One week FDP program on “ Frontiers in Bioprocess Technology ” at HBTU, Kanpur from 20/09/2021 to 24/09/2021.
18.	Successfully completed One week GIAN course on “ Green Processing and Synthesis ” at VNIT, Nagpur from 02/05/2022 to 06/05/2022.

Annexure- 9

Conferences/Seminar / Workshop Attended

Sr. No.	Title	Funding Agency	Duration		Organized at
			From	To	
1.	Process Modeling and Simulation	_____	23/03/2013	24/03/2013	Department of Chemical Engg, AMU, Aligarh
2.	MATLAB Fundamentals	MathWorks	20/09/2013	22/09/2013	Department of Chemical Engg, AMU, Aligarh
3.	Simulink for System and Algorithm Modeling	MathWorks	23/09/2013	24/09/2013	Department of Chemical Engg, AMU, Aligarh
4.	Aligarh Nano IV International 2014	TEQIP –II	08/03/2014	10/03/2014	Department of Applied Science, AMU, Aligarh
5.	Advances in Bioprocess Engineering & Technology	TEQIP-II	13/10/2014	13/10/2014	Department of Chemical Engg, AMU, Aligarh
6.	Electrolyzed water Technology: An Eco-Innovative Solution for Agro, Food And Water Industries	The Institution of Engineers (India)	14/07/2016	14/07/2016	Department of Chemical Engg, R.B.S. Engineering Technical Campus, Agra
7.	Seminar on Innovation	CST,UP	25/10/2017	25/10/2017	R.B.S. Engineering Technical Campus, Agra
8.	Innovative Technologies Towards Energy, Environment, Food & Sustainable Agriculture	ICSA, Germany	26/02/2018	28/02/2018	Department of Mechanical Engg, R.B.S. Engineering Technical Campus, Agra
9.	Advances in materials, Manufacturing and Renewable Energy Systems	AKTU	17/08/2018	18/08/2018	BBD,NITM, Lucknow

10.	Polymeric Smart & Nanomaterials Technology Concept & Future Applications	AKTU	04/10/2018	04/10/2018	CIPET-IPT, Lucknow
11.	Seamless Chemical Engineering in service of humanity: Innovations, Opportunity & Challenges (CHEMCON -2018)	IICHE	27/10/2018	30/10/2018	Department of Chemical Engg, NIT, Jalandhar
12.	Innovations in Technology and management for Achieving Sustainable Development Goals		01/02/2019	03/02/2019	JK Lakshmi Pat University, Jaipur
13.	Advances in Chemistry, Food Technology & Environmental Sciences Towards Sustainable Development	ICAR, NABARD	08/03/2019	09/03/2019	R.B.S. Engineering Technical Campus, Agra
14.	Recent Advances in Biochemical Engineering and Biotechnology		15/03/2019	16/03/2019	School of Biochemical Engg, IIT(BHU), Varanasi
15.	Defence and Space Technologies (ICDST-2019)	TEQIP-III and IEEE, UP Section, India	23/08/2019	25/08/2019	Department of Electronic & Communication, IET Lucknow
16.	Recent Aspects of Power system Optimization		30/08/2019	31/08/2019	Department Electrical Engg., IET Lucknow
17.	Transportation Engineering	AKTU	13/09/2019	14/09/2019	Department of Civil Engg., IET Lucknow
18.	Contemporary Computing and Applications (IC3A 2020)	TEQIP-III and IEEE	05/02/2020	07/02/2020	Dr. APJ Abdul Kalam Technical University, Lucknow
19.	Energy and Environmental Technologies for Sustainable Development	TEQIP-III, INSERB, CSIR, and CST UP	14/02/2020	16/02/2020	Department of Chemical Engg., MNNIT Allahabad, Prayagraj
20.	Innovation and Opportunities in Chemical Engineering for Sustainable Environment and Energy	ICHE, IDA, ISGBRD,	27/02/2020	29/02/2020	Department of Chemical Engg., RBSETC, Agra
21.	Deep Learning in Medical Image – Challenges and Applications	TEQIP-III	09/06/2020	09/06/2020	Center for Advanced Studies, AKTU Lucknow
22.	Analytical Techniques for Composition Measurement		22/06/2020	22/06/2020	Department of Chemical Engg., RBSETC, Agra
23.	Advanced Separation Processes: Extraction of Micro Pollutants by Supported Ionic Liquid Membranes		01/07/2020	01/07/2020	Department of Chemical Engg., RBSETC, Agra
24.	BioEnergy: Transition and Technology	TEQIP-III	03/07/2020	03/07/2020	Center for Energy and Environment, NIT, Jalandhar
25.	Green Fuels: Novel Catalytic Synthesis		18/07/2020	18/07/2020	Department of Chemical Engg., RBSETC, Agra

26.	Why A Manuscript is Rejected	TEQIP-III	27/08/2020	27/08/2020	Department of Chemical Engineering, NIT, Jalandhar
27.	International Tribology Research Symposium	BHEL, DUCOM	05/11/2020	07/11/2020	SRM, Shri Mata Vaishno Devi University, Katra, CAS AKTU Lucknow
28.	National Conference on Sustainable Research in Energy and Environment (SREE-2021)		15/01/2021	16/01/2021	NIT Jalandhar
29.	International Conference on Biotechnology for Sustainable Agriculture, Environment and Health	The Biotech Research Society, India	04/04/2021	08/04/2021	Malaviya National Institute of Technology, Jaipur
30.	International Conference on Advances in Chemical, Biological and Environmental Engineering (ICACBEE-2021)		23/04/2021	24/04/2021	Malaviya National Institute of Technology, Jaipur
31.	VI ISEES International Conference on Sustainable Energy and Environmental Challenges (SEEC-2021)		27/12/2021	29/12/2021	Hotel Ramada Lucknow, KNIT Sultanpur
32.	International conference on Chemical Engineering: Enabling Transition Towards Sustainable Future (CHEMTSF-2022)	ACS, Royal Society of Chemistry, AIPMA,elementar	08/08/2022	10/09/2021	IIT Roorkee, Uttarakhand
33.	International conference on Sustainability in Chemical Processes Through Digitalization, Artificial Intelligence and Green Chemistry (CHEMCON-2022)	AIChE	27/12/2022	30/12/2022	HBTU, Kanpur
34.	International conference on Frontiers in Desalination, Energy, Environment and Material Sciences for Sustainable Development (FEEMSD-2023)	Indian Desalination Association (InDA)	16/03/2023	17/03/2023	Madam Mohan Malaviya University of Technology, Gorakhpur