

Personal Resume

Name : Dr. A.K. Kurchania
Designation : Professor
Department : Renewable Energy Sources Department
Institution : College of Technology and Engineering,
Maharana Pratap University of Agricultural & Technology,
Udaipur, (Rajasthan), PIN 313001

Address
Official : Professor,
Department of Renewable Energy Sources,
College of Technology and Engineering,
Maharana Pratap University of Agriculture & Technology,
Udaipur, (Rajasthan), 313 001

Address
(for correspondence) : House no. 27/2, Road No. 2, Vinayak Nagar, Bohra Ganesh Ji
Road, Udaipur, (Rajasthan), 313 001

Phone No. : 0294 2471068 (O), 0294 2491816 (R),
Cell Phone 9414162553, FAX 0294 2471058

E-mail : Kurchania@rediffmail.com

Date of Birth : 13-6-1954

Sex & Marital Status : Male, Married

Nationality : Indian

Educational Qualification (Started with last attended Institution and work backwards)

Exam Passed	University/Board	Year	Grade/Division
Ph. D. (Agril Engg)	G.B. Pant University of Agr. & Technology, Pantnagar, (Uttaranchal)	1997	Division not mentioned 5.00 out of 5.00 OGPA (90.00 %)
M. Tech. (Agril Engg)	Indian Institute of Technology, Kharagpur, (W.B.)	1978	Not mentioned as per IIT policy
B. Tech. (Agril Engg)	J.N. Krishi Vishwa Vidyalaya, Jabalpur, (M.P.)	1976	First (Hons.), (72.77 %)
Sr. Higher Secondary	MP Higher Secondary Board, Jabalpur	1971	First (72.5 %)

Award recognition: -

- Receipt of Honours Degree in UG
- Awarded ICAR Senior Research Fellowship from 1994-97 to pursue Ph.D.
- Awarded Merit Scholarship during B. Tech. (Agril. Engg.) from JNKVV, Jabalpur
- Awarded PG Scholarship during M. Tech. (Agril. Engg.) from IIT, Kharagpur.

Experience

Sr. No.	Post	Organization	Duration	Nature of Work
1.	Scientist B	Central Mechanical Engineering Research Institute, (CSIR), Durgapur, (W.B.)	Dec 30, 1978 to June 6, 1983	Research & Development
2.	Assistant Engineer (Design)	International Crops Research Institute for Semi Arid Tropics, Patancheru (AP)	June 10, 1983 to Mach 2, 1984	Research & Development
3.	Junior Scientist (FMP)	JNKVV, Jabalpur, (M.P.)	Mach 3, 1984 to Oct. 31, 1986	Teaching & Research
4.	Associate Professor	MP University of Agriculture & Technology, Udaipur	Nov. 5 1986 to May 18, 2001	Teaching & Research
5.	Professor	MP University of Agriculture & Technology, Udaipur	May 19, 2001 to till now	Teaching & Research
6.	Head	MP University of Agriculture & Technology, Udaipur	October 25, 2004 to September, 2009	Teaching, Research & Administration

- Involved in Teaching, Research & Extension in the area of New and Renewable Energy Sources for rural applications including Biogas, Solar Energy (Thermal & Photovoltaic), Improved Cookstoves, Thermo-chemical conversion for the past 30 years.
- Experience of preparing the research project proposals, progress reports and their presentation in meetings.
- Successfully handled various research projects and schemes independently as a team leader in which a group of scientific/technical/other staff (was) is working.
- Experience of how to coordinate between the institute and sponsoring authorities in terms of approval of projects, funds and procurement of equipment / instruments.
- Good knowledge of budget planning of such projects.

Other Academic and Administrative Responsibilities:

- **Head**, Agril Engineering Dept., SKN College of Agriculture, RAU, Jobner, (Raj) From 1986 to 2000
- **Head, Renewable Energy Sources Department**, College of Technology and Engineering, MPUAT, Udaipur. From 2004 to 2010.
- **Coordinator, Biogas Development and Training Centre**, Ministry of New and Renewable Energy, (Govt. of India), New Delhi. From 01-02-2005 to 31-02-2010.
- **Project Incharge**, All India Coordinated Research Project on Renewable Sources of Energy for Agriculture and Agro-based Industries, (ICAR). From 2004 to 2009.
- **Bio-Energy Expert and Research Project Evaluator**, Ministry of New and Renewable Energy, (Govt. of India)
- **Chairman, Student Disciplinary Committee**, College of Technology & Engineering, Udaipur. From 2001 to 2009.

International Visit

1. Attended network meetings in Renewable Energy in **Vientian, Laos PDR** from 2 to 4th April, 2008.
2. Attended meeting regarding Renewable Energy appliances standardization at **Chengdu, China** on 12 & 13 Nov., 2007.
3. Attended meeting regarding renewable energy appliances standardization organized by Netherlands Development Organization at **Appleton, Netherlands**, 24 to 28th June, 2007.
4. International Postgraduate course in Agricultural Engineering in Small Scale Farming held at Institute of Agricultural Engineering, the **Volconi Centre, Bet Dagan, Israel**. Six weeks duration, Feb 9 to April 3, 1992.

Teaching:

List of Courses taught at B. Tech. /M. Tech. Level

Sr. No	Title of Course Taught	Course No	Credits
1.	Solar Energy Utilization	RES 611	3
2.	Biogas Technology & Mechanism	RES 622	3
3.	Renewable Sources of Energy	RES 631	3
4.	Wind Energy Utilization	RES 618	3
5.	Alternate Fuels & Applications	RES 623	3
6.	Energy, Ecology & Environment	RES 624	3
7.	Energy Lab	RES 627	3
8.	Renewable Power Sources B.E. (Final Year)	RS 411	2+1

Ph. D. thesis guided: Two

ME thesis guided: six

BE thesis guided: 12

Significant contributions

- a. Bio-Energy Projects were evaluated as Bio-Energy Expert and Research Project Evaluator for Ministry of New and Renewable Energy, (Govt. of India)
- b. Development of PG Syllabus in Renewable Energy (ME, Ph D) and regular revision of Syllabus with the help of experts in the field. Worked as a Member of University Academic Council and also as an internal member appointed through Board of Studies for the strengthening the teaching in the University.
- c. Conducted various trainings including entrepreneur development programme, vocational trainings etc.
- d. Promoted the use of the audiovisual and new teaching techniques in the postgraduate classes.
- e. Brought out Text/Reference books including practical monographs for the under graduate & post graduate students in new and renewable energy field.
- f. Delivered lectures in various national as well as international training courses.
- g. Brought out number of proceeding/training manual of National convention, Workshop, Summer School & training.
- h. Various demonstrations organised/conducted at users'/field level viz. Operation and use of solar cookers, repair & maintenance of solar cookers, operation and maintenance of Biogas plants & Improved Cook stoves, Solar Dryer etc.

List of Research Projects/Investigations completed/in progress as a PI/Co-PI

1. Project Incharge, Strengthening Test Facilities for Testing and Performance Evaluation of Biomass Cookstoves. Sponsored by MNRE, GOI, New Delhi
2. Coordinator, Biogas Development and Training Centre, Sponsored by MNRE, (GOI), New Delhi
3. Project Incharge, All India Coordinated Research Project on Renewable Sources of Energy for Agriculture and Agro-based Industries (Biogas, Solar Energy and Thermo-chemical Conversion Component), Funding Agency ICAR
4. Development of Technology for Drying Industrial Product Utilizing Eco-friendly Biomass Gasifier, Sponsored by MNRE, GOI, New Delhi
5. Installation of Improved Cook Stove in the Villages of Udaipur District, Sponsored by Petroleum Conservation Research Association, New Delhi.

Programmes conducted (Last 5 years) as Course Coordinator/Incharge

a. International Training

International Training conducted as Coordinator on “Renewable Energy” for the Technical Staff of Government of Maldives from November 17 to December 7, 2007, sponsored by Government of Maldives

b. Workshops/Trainings conducted as Coordinator

Sr. No.	Workshop/Training Course	Duration	Date	Sponsored by
1.	Short Course on Horizontal Flow Biogas Plant	3 days	June 10-12, 2002	ICAR
2.	Short Course on Dry Fermentation	3 days	June 13-15, 2002	ICAR
3.	Short Course on Durable Cookstoves	3 days	June 16-18, 2002	ICAR
4.	Biennial Workshop (14 th) of AICRP on Renewable Energy Sources (ICAR)	4 days	4 to 7 January, 2006	ICAR
5.	Village Energy Security Program	3 days	29-30 March, 2006	RREC
6.	Training on modified Deenbandhu model biogas plant for solid state fermentation of cattle dung	5 days	Nov. 28 – Dec. 02, 2006	MNRE
7.	Training programme on Non-conventional Energy Sources, participants 20 Polytechnic College teachers	5 days	Sept. 20 to 24, 2010	Teachers Training Centre, Jodhpur

c. List of National Summer School Organized as Coordinator

1.	ICAR Summer School on “Alternative Energy Management, Practices and Techniques in Agriculture and Agro based Industries”.	June 4 – 24, 2001	ICAR New Delhi
2.	Organic Farming and Sustainable Development	November 21, 2004	DST, Jaipur
3.	Energy Auditing and Management for Cleaner Production in Agriculture and Agro-based Industries	June 20, 2005 to July 10, 2005	ICAR New Delhi

2. Publications :

Books/ Booklets:

1. Climatic Changes & Their Remedial Measures, (2001), Rathore N.S., Kurchania A.K., Shubhi Publications, Gurgaon, Delhi.

2. Horizontal Flow Biogas Plant for Ligno Cellulosic Biomass. (2002), Kurchania A.K., Rathore N.S., Ali N. Bulletin No. CIAE/RES/2002.
3. Energy Technology and Management in Agriculture: Sustainable Prospective, ICAR Short Course, (2002), Mathur AN, Rathore NS, Kurchania AK, Kothari S, DRES, Udaipur.
4. Dry Fermentation of Cattle Dung through Modified Janta Biogas Plant Training Manual. (2002). Kurchania A.K., Rathore N.S. and Ali N, DRES, CTAE.
5. Durable Improved Cook-Stoves, (2003), Rathore NS, Kurchania AK, Jain S, Mathur AN, Extension Bulletin No. CIAE/RES/2003/6.
6. Fixed Dome Biogas Plants for Solid-State Digestion of Cattle Dung. (2003), Kurchania A.K., Rathore N.S., Ali N. & Mathur A.N., Bulletin No. CIAE/RES/2003/8, AICRP on RES (ICAR), CIAE, Bhopal.
7. Sustainable Development with Renewable Energy Sources, (2004), Singh Pratap, Rathore N.S., Kurchania A.K., Mathur A.N., Yash Publications, Bikaner.
8. Energy Auditing and Management for Cleaner Production in Agriculture & Agro-based Industries, ICAR Summer Course, (2005), Kurchania A.K., Sharma D., Kothari S., DRES, CTAE, Udaipur
9. Thos Gobar Pachan Ke Liye Sthir Gumbad Biogas Sanyatra (2005) (Hindi) by R. Singh, R.K. Malik, A.K. Kurchania, N.S. Rathore and N. Ali, A. N. Mathur Bulletin No. CIAE/RES/2005/8, AICRP on RES (ICAR), CIAE, Bhopal.
10. Gramin Urja Suraksha Prodhogiki, Hindi, (Village Energy Security Technologies), (2006), Kurchania A.K., Sharma D., RREC Spnsored, DRES, CTAE, Udaipur.
11. Biomethanation Technology, (2006), Rathore N.S., Kurchania A.K., Apex Publications, Udaipur,
12. Renewable Energy Theory & Practice, (2006), Rathore N.S., Panwar N.L., Kurchania A.K., Himanshu Publications, Udaipur.
13. Non Conventional Energy Sources, (2007), Rathore N. S., Kurchania A. K., Panwar N. L., Himanshu Publications, Udaipur. Biogas Appliances Comparative Study Report, (2007). Kurchania A.K., SNV – Netherlands Development Organization under Asia Biogas Programme, Udaipur.
14. Durable Improved Biomass Cookstove for Agro-Industrial and Community Applications, (2007), Rathore N. S., Kurchania A. K., Panwar N. L., Extension Bulletin No. CIAE/RES/2007/1, All India Co-ordinated Research Project on Renewable Energy Sources (ICAR), CIAE, Bhopal.
15. Akshay Urja Shroat (Hindi), (2008), Sharma D., Kurchania A. K., Agrawal D, Department of Renewable Energy Sources Publication, Udaipur.
16. Jatropha-Cultivation & Processing Practices, (2008), Rathore NS, Panwar N. L., Kurchania A.K., Himanshu Publications, Udaipur.
17. Large capacity low cost biogas plant for digestion of cattle dung in solid state, (2009), Kurchania A.K., etc., Bulletin No. CIAE/RES/2009/2, All India Co-ordinated Research Project on Renewable Energy Sources (ICAR), CIAE, Bhopal.
18. Kurchania A. K. and others. (2011), ठोस फिक्स्ड डोम डिजाइन बायोगैस संयंत्र, (Hindi). Manual, Department of Renewable Energy Sources, CTAE, Udaipur.
19. Kurchania A. K. and others. (2011), Family Size Solid-State Deenbandhu Fixed Dome Design Biogas Plant Manual, Department of Renewable Energy Sources, CTAE, Udaipur.

Research Papers

National Journals

1. Ali N, Kurchania A. K. and Rathore N.S. (2003), Enrichment of Biogas Spent Slurry with Rock Phosphate by Phosphate Solubilising Bacteria. PROM Review pp 88-92.
2. Rathore N.S., Kurchania A.K. and Ali Nafisa (2003), Waste Recycling for Power Generation. PROM Review, pp 78-87.
3. Sengar S.H., Kurchania AK, (2005). Experimental Performance Analysis of Composite Solar Dryer cum Cooker, J. Dairying, Foods & Home Science, 24(2), 123-129.
4. Sengar S.H., Kurchania AK, Nachane PM & Mahale DM (2005). Design and Development of Solar Water Heater cum Distillation Unit for Domestic Use. PKV Research Journal, 20(1), 102-105.
5. Sengar SH, Kurchania AK, Rathore NS, (2006). Design & Development of Composite Solar Water Heater cum Distillation Unit for Domestic Use, Journal of Institution of Engineers, 87(6), 15-17.
6. Sengar S.H., Kurchania AK, (2006). Design and Development of Composite Solar Dryer cum Cooker. Agricultural Engineering Today, 29 (5-6), 71-76.
7. Sengar S.H., Kurchania AK, (2006). A Multipurpose Stove Solar Cook Stove, Invention Intelligence, pp 31-32.
8. Maheshwari R.K., Kurchania. A. K. and Nafisa Ali (2006). Dry Fermentation Technology of Cattle Dung through Modified Biogas Plant, Environment and Ecology Journal, 24(1), 103-06
9. Sengar S.H., Kurchania AK, (2006). Performance Evaluation of Composite Solar Cooker cum Dryer, Association Annual Journal, Kurukshetra, Vol. 5(1-2).
10. Vani DK, Kurchania AK, (2007), Bio-Methanation of Anaerobic Fermentation of Undiluted Cattle Dung, Journal of Agril. Engineering, 44(2), 124-126.
11. Sengar S.H., Kurchania AK, (2007), Design, Development of Composite Solar Appliances for Domestic Use, Beverage & Food World, June, 52-56.
12. Sengar S.H., Kurchania AK, (2007), Design development and testing of composite solar dryer cum cooker. Journal of Food Science and Technology 44 (4), pp. 375-377
13. Sengar S.H., Kurchania AK. (2009). Multipurpose solar oven. Akshay Urja, Vol 2, No. 6, 22-25.
14. Hakimuddin, Kurchania AK, Ali N., Mathur R., (2011), Performance and Techno-Economic Evaluation of a Commercial size Biogas plant, Journal of Agril. Engineering, Vol. 47(3).

International Journals

1. Kurcahnia A. K., Panwar N. L., Pagar S. D., (2006). Design and performance evaluation of biogas stove for community cooking application. International Journal of Sustainable Energy, Vol. 29, No. 2, June 2010, 116-123
2. Sengar S.H. and Kurchania A.K. (2008), Solar Geyser cum Distiller for Domestic Use. World Applied Sciences Journal 4 (6): 808-811
3. Sengar S.H., Kurchania AK, (2008). Domestic Solar Geyser Cum Distiller, Agricultural Mechanization in Asia, Africa and Latin America, Vol. 39, No. 4, 28-30.

4. Panwar N.L, Kurchania AK, Rathore N.S. (2008), Mitigation of greenhouse gases by adoption of improved biomass cookstoves. *Mitigation and Adaptation Strategies for Global Change*. 14(6): 569-578
5. Panwar N.L., Rathore N.S., Kurchania A.K. (2009). Experimental investigation of open core downdraft biomass gasifier for food processing industry. *Miting Adapt Strateg Glob Change* 14:547 – 556.
6. Ali N., Kurchania A. K. and Babel S. (2010), Bio-methanisation of *Jatropha curcas* defatted waste, *Journal of Engineering and Technology Research* Vol. 2(3), pp.038-043.
7. Panwar N.L., Shrirame H.Y., Rathore N.S., Jindal S., Kurchania A.K.. (2010), Performance evaluation of a diesel engine fueled with methyl ester of castor seed oil. *Applied Thermal Engineering* 30, 245–249
8. Mohod Atul, Jain S., Powar A., Rathore N., Kurchania A.K., (2010), Elucidation of unit operations and energy consumption pattern in small scale cashew nut processing mills. *Journal of Food Engineering* 99, 184–189.
9. Panwar N.L, Shrirame HY, Rathore N.S., Jindal S., Kurchania AK, (2010), Performance evaluation of a diesel engine fueled with methyl ester of castor seed oil. *Applied Thermal Engineering* 30, 245–249.
10. Kurchania A. K., Panwar N. L., Savita D. Pagar, (2010). Design and performance evaluation of biogas stove for community cooking application. *International Journal of Sustainable Energy*, 29(2), 116–123.
11. Kurchania A. K., Panwar N. L., Savita D. Pagar, (2011), Development of Domestic Biogas Stove. *Biomass Conversion and Biorefinery*. 1(2):99–103.
12. Kurchania A. K., Panwar N. L. (2011), Experimental investigation of an applicator of liquid slurry from biogas production for crop production. *Environmental Technology*. 32: 8, 873 — 878
13. Kurchania A. K., Panwar N. L., Savita D. Pagar, (2011), Improved Biogas Stove with Scrubbing Unit for Household Use. *Waste Biomass Valorization*. DOI 10.1007/s12649-011-9080-8.

National Conferences

1. Kurchania A. K. (2003), Environmental Protection for Sustainable Development, XIX National Convention of Environmental Engineers Proceedings, IE (I), Udiapur, pp 139-144.
2. Kurchania A. K. and Rathore N.S. (2003), Renewable Energy Technology for Sustainable Development, National Workshop on Environment and Pollution Management for Sustainable Development, LNCT, Bhopal, pp 65-69.
3. Sharma D, Kothari S, Kurchania A. K. (2004), Appropriate Advanced Technologies for Rural Development, Technical Education of Rajathan in National Horizon Seminar-Proceedings, The Institution of Engineers (I), Udaipur, pp 69 – 71.
4. Kurchania A. K. (2006), Consumer Awareness and Energy Regulations, Consumer Awareness for Food & Dairy Products Seminar-Proceedings, CDFST, Udaipur, pp 122-130.
5. Kurchania A.K., P. Savita Daulotrao, (2007). Efficient Energy Auditing and Management, 22nd Indian Engineering Congress Souvenir, Udaipur, 57-61.

International Conferences

1. Kurchania A.K. and N.S. Rathore and Ali Nafisa. (2004). Dry Fermentation Technology Based Modified Biogas Plant for Arid Areas, Emerging Technologies in Agricultural and Food Engineering, International Conference, IIT, Kharagpur, pp 451- 455.
2. Kurchania A.K., Vani D. K., Ali N. (2008), Solid State Biomethanation of Organic Waste, Proceedings Renewable Energy Asia 2008 – An International Conference & 4th SEE Forum Meeting, IIT Delhi.

Popular articles

1. Sengar S., Kurchania A.K. etc. (2005). Photo Voltaic Technology: Need of Today (Hindi). Krishi Lok Masik, Jodhpur, Oct., 8-9.
2. Sengar S., Kurchania A.K. (2005). Design & development of solar dryer cum cooker, (Hindi), Krishi Lok Masik, Jodhpur, Feb., 4-5.
3. Sengar S., Kurchania A.K. etc. (2006). Design & development of solar equipment, (Hindi), Rajasthan Kheti, November, 20-21.
4. Mishra D., Kurchania A.K. (2009). Avoid accidents from tractor. Khad Patrika, 50(05), 33-35.
5. Sharma A., Sharma D., Kurchania A.K. (2010), Biogas Technology: Best alternative for energy, (Hindi), Rajasthan Kheti-Pratap, July, 21-23.
6. Sharma A., Sharma D., Kurchania A.K. (2010), Biogas Technology: Best alternative for energy, (Hindi), Rajasthan Kheti-Pratap, July, 21-23.

Development of Technology

1. Horizontal Flow biogas plant for alternative feeds such as kitchen waste, water hyacinth etc
2. Solid state Fermentation of Cattle Dung through Modified Fixed Dome Biogas Plants
3. Large biogas plants based on fixed dome technology
4. Liquid slurry applicator for applying liquid slurry in field
5. Non-edible oil cake biogas plant
6. Prefab Plastic biogas plant
7. Solar Dryers to dry food products
8. Solar Composite Units
 - (i) Solar water heater cum solar distillation plant
 - (ii) Solar dryer cum cooker
9. Solar Wax Melter

Seminar / Workshop/ Summer Institute/ Symposia / Conference /Training Attended

Attended 25 International and National seminars/ workshops/conferences

Other Activities

1. **Member** of Working Group on Domestic Biogas under the Energy for **All Partnership of SNV Netherlands Development Organization** initiated by the Asian Development Bank (ADB).
2. **Bio-energy Expert** for Evaluation of Medium Size biogas Fertilizer Plants by **MNRE**
3. **Research Paper Reviewer**, Scientific Journals International, Elsevier, Bioresource Technology.
4. **External Expert** in GBPUAT, PAU, OUAT, JNKVV, Sukhadia University, TNAU, HAU.
5. **Project Evaluator** for DST, CSIR, MNRE.

Membership of Scientific Bodies/Committees:

1. Life Member of Indian Society of Agricultural Engineers (ISAE)
 2. Life Member of Indian Institute of Engineers (India)
 3. Life Member of Indian Society of Mechanical Engineers (India)
 4. Life Member of Arid Zone Research Journals
 5. Research Paper Reviewer, Scientific Journals International.
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