

M.Tech., Ph.D.



1. Name	- Dr. M. Emran Khan
2. Designation	- Professor
3. Date of Birth	- December 20, 1960
4. Residential Address	<ul> <li>633/9, R-4, Lane-9,</li> <li>Zakir Nagar</li> <li>New Delhi-110025.</li> </ul>
5. Academic Specialisation	- Renewable Energy Systems,
	Clean Energy Systems,
	Heat and Mass Transfer,
	Life Cycle Analysis (LCA),
	Energy Conservation,
	Management and Auditing,
	Greenhouse Gases (GHG) Abatement,
	Energy recovery from Solid Waste,
	Environmental Engineering & Management
6. Teaching Experience	- 31 years
7. Research Experience	- 31 years



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### 8. Employment Profile

Job Title	Employer	From	То
Professor	Jamia Millia Islamia	Feb. 2003	till date
Reader	Jamia Millia Islamia	Feb. 1995	Feb. 2003
Lecturer	Jamia Millia Islamia	Sep. 1985	Feb. 1995

#### 9. Honours and Awards

- Member Task Force on "Waste to energy projects", Planning Commission of India.
- Member of **National Board of Accreditation** (NBA) of AICTE as expert for Mechanical Engineering discipline.
- Expert for various **selection committees** for professor, reader and lecturer in the areas of mechanical engineering and allied areas of engineering.
- Developed an empirical Relation of Heat Transfer for Solar-still and is known by my name.

Examination	Board / University	Year	Division/ Grade
Ph.D. (Mechanical Engineering)	Delhi University	1997	-
M.Tech. (Energy Studies)	I.I.T., Delhi	1992	Ι
B.Sc. Engg. (Mechanical)	A.M.U., Aligarh	1984	Ι
SSSC	C.B.S.E (D.P.S Mathura Road, New Delhi)	1979	Ι
SSC	C.B.S.E (D.P.S Mathura Road, New Delhi)	1977	Ι

#### **10. Academic Qualifications**

### **11**. Details of Research Projects

Title of Project	Funding Agency	Duration		Status
Title of Project		From	То	Status
Pilot demonstration of clean technology for landfill gas recovery at Okhla site, Delhi	Ministry of Environment & Forest (MoEF), Government of India	March, 2010	Apr. 2013	Completed



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### 12.. Academic/Administrative Responsibilities

Conducted numerous field outreach and training programs.

Position	Institution	From	То
B.E in Mechanical (Evening) Co-ordinator	Jamia Millia Islamia	2010	2012
Organizing Secretary- Organized International Conference on Energy and Environment – Strategies for sustainable development	Jamia Millia Islamia	2004	2004
Project Co-ordinator- Entrepreneurship Aware ness Camp in the field of Renewable Energy Development Programme	Ministry of Non Conventional Energy Sources (MNES)	2001	2002
Extension programme on women and Renewable Energy Development	Ministry of Non Conventional Energy Sources (MNES)	2001	2002
B.E in Mechanical (Evening) Co-ordinator	Jamia Millia Islamia	1999	2001
Co-ordinator	National Service Scheme (NSS)	1999	2001
<u>Chief Co-ordinator</u> - Conducted a project for AICTE – Thrust Area Project in Renewable Energy Alternative Sources	Jamia Millia Islamia	1995	1995



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### 13. Details of Academic Work

- <u>Curriculum Development</u> The first faculty member in the Mechanical Engineering Department to be recruited in 1985, when the faculty was established and was instrumental in formulating the syllabi and labs of Mechanical Engineering Department.
- Number of undergraduate projects guided : 100
- Number of M. Tech (Thesis) guided : 15
- Number of PhDs guided : 10
  - 1. "Effect of use of Renewable Energy Sources to keep. Clean Environment for New Millennium".
  - 2. "Thermal Modeling of a Greenhouse in a Controlled Environment".
  - 3. "Energy Conservation in Air-conditioning using variable volume chilled water pumping, variable air volume (VAV) Boxes and variable. Fresh Air-arrangement for Indian Climatic conditions"
  - 4. "Assessment and Evaluation of Air to Air Heat Recovery Devices in Air Conditioning Application for Indian Conditions"
  - 5. "Experimental Studies of Performance and Emission. Characteristics of SI Engines using Alternative Fuels".
  - 6. "Total life cycle analysis of renewable energy systems"
  - 7. "Evaluation of Energy Potential from Unsecured Landfill Site".
  - 8. "Energy and Exergy Analysis of Solar Distillation System".
  - 9. "Yearly Performance of Active and Passive Solar Distillation System for Different Climate Condition in India".
  - 10. Energy Conservation and Efficiency Improvement of Automation Systems in Intelligent/Green Buildings from Concept to Commissioning".
- Number of PhDs ongoing : 03

#### 14. Membership of Learned/Scientific Societies: Indian Society for Technical Education (ISTE).

#### 15. Book and Book Chapters:

- 1. "Solid and liquid waste management", Prentice Hall of India (PHI) 2016.
- "Demonstration of Clean Technology for Landfill Gas Recovery at Okhla Waste Disposal Site at Delhi, India", for Ministry of Environment and Forest (MoEF), Government of India, 2013 (Author).
- 3. "Solid Waste Management An Indian Perspective", **Synergy Books**, New Delhi, 2012 (Book Chapter).
- 4. "From Landfill Gas to Energy: Technologies and Challenges", *CRC Press, Taylor & Francis Group*, U.K, 2011, (Author).
- 5. "Energy and Environment", published by **Annamaya Publishers**, 2004 (Editor).

#### **16**. Participation in Workshops/Conferences/Seminars etc.

- Successful completed more than 11 short term training programmes and refresher courses related to various disciplines of mechanical engineering.
- Participated in more than 25 Workshops, Conferences and Seminars in the field of thermal engineering, energy and environment management. Recent ones are provided below :
- 1. National Seminar' on: "Economics of Solid Waste Management: An Indian Perspective" held on 12-13 March 2010 at JMI University, New Delhi.



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- 2. Methane to Markets (M2M) International Partnership Expo held on March 2-4, 2010 at New Delhi.
- 3. Training program on Cleaner Production/Technology Integrated Environmental Management, January 18-22, 2010 by MoEF, New Delhi.
- Workshop on Renewable energy in India 2030 and Beyond on January 14, 2010 by Observer Research Foundation (ORF), New Delhi
- 5. Global Summit on Sustainable Development & Climate Change on September 24-25, 2009 by Observer Research Foundation (ORF), New Delhi.
- 6. Carbon Bazaar-2009, New Delhi.
- 7. Participated in more than 50 Workshops, Conferences and Seminars in the field of thermal engineering, energy and environment management.

#### 17. Publications

#### (A) International Journals :

"Experimental Investigations of Performance and Emissions Characteristics of Kusum (Schleichera Oleosa) Biodiesel in a Multi-Cylinder Transportation Diesel Engine", **Waste Biomass Valor, Springer,** DOI 10.1007/s12649-016-9658-2, (2016).

"Biodiesel Production from Nerium Oleander (Thevetia Peruviana) Oil through Conventional and Ultrasonic Irradiation Methods", *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Tailor & Francis*, vol. 38, no. 23, 3447–3452 (2016).

"Assessment of CO<sub>2</sub> mitigation potential through Renewable Energy option, in domestic sector of rural India", **International Journal of Exploring Emerging Trends in Engineering** (IJEETE), ISSN: 2394 -0573. Vol. 3, Issue 3, pp. 174-183. May-June, 2016.

"Biodiesel Production from Oleander (Thevetia Peruviana) Oil and its Performance Testing on a Diesel Engine", **Korean Journal of Chemical Engineering, Springer,** Manuscript number: KJCE-D-16-00212R2 (accepted) (2016).

"Performance and emission characteristics of a transportation diesel engine operated with non-edible vegetable oils biodiesel", **Case Studies in Thermal Engineering, Elsevier,** Vol. 8, pp 236–244 (2016).

"Kaner biodiesel production through hybrid reactor and its performance testing on a CI engine at different compression ratios", **Egypt. J. Petrol., Elsevier,** http://dx.doi.org/10.1016/j.ejpe.2016.07.006, (2016).

"Ultrasonic Assisted Production of Biodiesel from Karabi Oil using Heterogeneous Catalyst", **Biofuels, Tailor &Francis,** No. TBFU - 2016- 0078 R2 (accepted), (2016).

"Performance and Emission characteristics of a Stationary Diesel Engine fuelled by Schleichera Oleosa oil Methyl Ester (SOME) Produced through Hydrodynamic Cavitation Process" *Egypt. J. Petrol., Elsevier,* Manuscript No. EGYJP\_2016\_129\_R1 (accepted) (2016).

Performance, Emission and Combustion Characteristics of an Indica Diesel Engine Operated with Yellow Oleander (Thevetia Peruviana) Oil Biodiesel Produced through Hydrodynamic Cavitation Method", **Tailor &Francis**, (accepted) (2016).

"A Comparative Study on Ultrasonic Cavitation and Mechanical Stirring Method towards Efficient Production of Biodiesel from Non-Edible Oils and Performance Testing on a C.I. Engine", **Int. J. of Environmental and waste management, Inderscience,** (accepted) (2016).

"Optimization of biodiesel production from bitter groundnut oil using Taguchi method and its performance and emissions characteristics on a 4-cylinder Tata Indica engine", **Int. J. Sustainable Agri. Management and Informatics, Inderscience**, Vol. 1, No. 4, pp.285–300, (2015).

"Gauging the Impact of Power Generation from Fossil Fuels on CO<sub>2</sub> Level in Atmosphere", International Journal of Science and Research (IJSR), ISSN: 2319-7064. Volume 4 Issue 3, March- 2015, 829-833.

"Desirable Impact on Environment of Solar Energy in Domestic Sector", **Indian Journal of Applied Research** (IJAR), ISSN: 2249-555X. Peer Reviewed & Referred International, Sara Publishing Academy, Volume 4, Issue 12, December 2014, 66-69.



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"Optimization of Production and Performance of Biodiesel through Optimization Techniques: A Review", *International journal of Advance Research and Innovation*, Vol. 2, no. 4, pp-763-766 (2014).

Optimization of Energy Consumption in DXAC using MATLAB/SIMULINK for Improved Performance and Thermal Comfort", **International Journal of Current Engineering and Technology**, Special Issue-2 (Feb-2014), ISSN 2277 – 4106.

"Thermal comfort and energy efficiency in Indian commercial buildings", **International Journal of Emerging Technologies in Computational and Applied Sciences**, 5(4), June-August, 2013, pp. 414-420.

"Energy Efficiency in Green Buildings-India Concept", **American International Journal of Research in Science, Technology, Engineering & Mathematics (AIJRSTEM)**, ISSN(Online): 2328-3580, ISSN(CD-ROM): 2328-3629, Issue 3, Volume 1 & 2, June-August, 2013.

"Energy Scenario and Energy Efficiency: Programme and Policies of Booming India", American International Journal of Research in Science, Technology, Engineering & Mathematics (AIJRSTEM), ISSN (Online): 2279-0055, Issue 5, Vol. 1, 2, & 3, June-August, 2013

"Performance of a Solar Still Integrated with Evacuated Tube Collector in Natural Mode", **International Jr. Desalination**, 2013, Vol. 318, 25-33.

"Review of past research and proposed action plan for landfill gas-to-energy applications in India", **Waste Management & Research**, 31(1) 3 –22, January, 2013, DOI: 10.1177/0734242X12467066.

"Economic viability of Landfill Gas (LFG) Utilization in a Hospital – A Case Study of Okhla landfill Site", **EPC** Journal, Vol.15, No.4, May-June, 2012.

"Annual Performance of Passive and Hybrid (PVT) Active Solar Stills", VSRD International Journal of Mechanical, Automobile and Production Engineering, VSRD-MAP, Vol.2 (6), 2012.

"A Case Study to Fulfill the Requirement of Low Income Group(LIG) House by Installing PV Panel", **International Journal of Scientific Research**, Vol. 1, Issue 4, 2012.

"Assessment of Energy Potential from Six Landfill Sites in India", i-manager's **Journal on Mechanical Engineering**, Vol 1, No.3, May-July 2011. A peer reviewed journal. ISSN-2230-9055.

<sup>a</sup>Landfill gas recovery and its utilization in India: Current status, potential prospects and policy implications". **Journal of Chemical and Pharmaceutical. Research**, 2011, 3(5): 174-183. A peer reviewed journal. ISSN No: 0975-7384, CODEN (USA).

"Performance Evaluation of MSW Management Systems in Indian Cities using Financial and Economic Indicators", **EPC Journal**, Vol.13, No.6, Nov-Dec, 2010.

"Methane Emissions Inventory from Landfills in India – A National Perspective", **EPC Journal**, Pg 52-55, Vol.13, No.5, July-August, 2010.

"Role of Solar Photovoltaic Technology in meeting the Power Demand", **Journal of Environmental Science**, Computer Science and Engineering & Technology, Pg 541-550, Vol.2, No.3, June-August 2013.

"Energy Generation from Landfill Gas - A case study of Gorai landfill site – Mumbai", **EPC Journal**, Pg 47-51, Vol.13, No.4, May-June, 2010.

"Methane Emissions from Waste Disposal Sites in Delhi - A Renewable Source of Energy", **EPC Journal**, Pg 44-48, Vol.13, No.2, January-February, 2010.

"Design and Life Cycle Cost Analysis of a SAPV system to electrify a rural area household in India", **Current** World Environment, Pg 101-106, Vol.5, No.1, 2010.

"Design and life cycle cost Analysis of a SAPV System to Electrify a Rural Area Household in India", **International Journal of Environment Sciences**, 2010; 5(1): 110-106

"Energy Analysis and Carbon Credit Earned by Solar Cooker" **Current World Environment Journal**, Vol. 5(1), 147-154 (2010).

"Life Cycle Analysis and Carbon by Solar Water Heating System", International Journal of Low-Carbon Technologies.(Communicated)

"Modeling Impacts of Landfill Gas Emissions from Waste Disposal Site-A Case Study of Delhi", **EPC Journal**, Pg 23-27, Vol.12, No.5, July-Aug, 2009.



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"Comparative Evaluation of Energy Potential from two unsecured landfill sites in Mumbai and Ahmedabad", **EPC Journal**, Pg 47-54, Vol.12, No.4, May-June, 2009.

"Comparative Evaluation of Energy Potential from two unsecured landfill sites in Delhi and Hyderabad", **EPC** Journal, Pg 43-46, Vol.12, No.3, March-April, 2009.

"Optimization of Clean Environment Parameter through Renewable Sources of Energy", International Journal on "Ambient Energy", Vol.24, No.2 (2003) Elsevier Science Ltd. Pergamon Press, (U.K.)

"Effect of thermal storage on the performance of greenhouse", **International Journal on "Energy Research"**, Vol.(1) 79-92, (2003) **Elsevier Science Ltd**, **Pergamon Press. U.K.** 

"Experimental Study of Evaporation in Distillation", **International Journal on the Science and Technology of Desalting and Water Purification, "Desalination",** 115 pp. 121 – 128, **Elsevier Science Ltd, (U.K.)** 1998.

"Simulation of Convective Mass Transfer in Solar Distillation Process", International Journal on "Energy Convers. & Mgmt.", Vol. 38, No. 8, pp. 761 – 770, Elsevier Science Ltd, Pergamon Press, (U.K.) 1997.

"Instantaneous Thermal Efficiency of an Active Solar Still", **International Journal on "Applied Thermal Engineering"**, Vol. 16, No.2, pp. 189 – 192, **Elsevier Science Ltd, Pergamon Press, (U.K.)** 1996.

"Optimisation of Orientation for Higher yield of Solar Still for a Given Location", **International Journal on** "Energy Conversion & Mgmt", Vol. 36, No. 3 pp. 175 – 187, Elsevier Science Ltd, Pergamon Press, (U.K.)1995.01

"Optimisation of Glass Cover Inclination for Maximum yield in a Solar Still", **International Journal on** "Heat Recovery Systems & CHP", Vol. 14, No. 4, pp. 447 – 455, Elsevier Science Ltd, Pergamon Press, (U.K.) 1994.

"Effect of Atmospheric Height on Carbon Dioxide Concentration due to thermal power generation", – **The International Journal on "Energy" Elsevier Science Ltd, (U.K.)**, Pergamon Press, (Communicated).

"Carbon Accounting in Indian Cement "Industries" Energy Research – The International Journal, Elsevier Science Ltd, (U.K.) (Communicated).

"Annual thermal performance of Green House with an Earth Air Heat-Exchanger and experimental validation communicated", **International Journal on "Renewable-Energy" Elsevier Science Ltd, (U.K.).** 

#### (B) Conferences/Workshops/Symposia:

"Storage Stability of Biodiesel: A Review", Proceedings of **International Conference on Recent Advances in Mechanical Engineering, (RAME-216),** held on October 14th-15th 2016, organized by Delhi Technological University Delhi.

"Biodiesel Production from Waste Ground Nut Oil", Paper presented in **National Conference on Advancement of Mechanical Engineering, March-2016 (NCAME-2016)** at B.S. Anangpuria Institute of Technology & Management Faridabad.

"Non-Edible Oils as New Sources for I.C. engine fuels: a Review", proceedings of **National conference on Nano technology and Renewable energy-2014 (NCNRE-2014)** held at Jamia Millia Islamia, New Delhi.

"Theoretical Parametric Study of Evacuated Tubes Integrated Single Slope Solar Still", **International Conference Solaris-2012**, Varanasi, Feb 7-9-2012.

"Earth tube in commercial buildings - a unique systems for energy conservation", **International Conference, NIT**, Hamirpur (HP), 2010-11.

"Building Energy Management s/m for Energy Efficiency Improvement", **International Conference, SIT**, Tumkur, Karnataka, 2010-11.

"Sustainable technologies and methods for improving energy efficiency in space cooling of commercial buildings", **Conference, Emerging Trends in mechanical Engineering**, 2010-11.

"Energy conservation in commercial buildings", National conference, MMM, Ghorakpur, UP, 2009-10.



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"Assessment of Landfill Methane Emissions and Energy Recovery Potential from Selected Waste Disposal Sites in India" in the **National Seminar on Cleaner Production Technologies** from Nov.17 – 18, 2009 at NITTTR, Chandigarh.

"Evaluation of Energy Potential from Selected Landfill Sites in India using Equador Model" in the "International Congress on Recent Advances in Environmental Science & Technology" held on Nov.2-4, 2009 at Centre for Science & Technology, Banaras Hindu University (BHU), Varanasi.

Participated in **Global Summit on Sustainable Development & Climate Change**, September 24-25, 2009, New Delhi.

"Modeling of Energy Potential from Selected Landfill Sites in India" in the **International Conference on Emerging Trends in Environmental Research** (ICETER-2009) held from 14-16 August, 2009 at St Albert's College, Kochi, Kerala.

"Comparative Evaluation of Energy Potential from Unsecured Landfill Sites in India" in the **International Conference On Solid Waste and Environment** (ANSWAI CONF-09) held from 12-14 August, 2009 at Anna University, Coimbatore, Tamil Nadu.

"Analysis of open burning of municipal solid waste in selected cities of India", **International conference on Green Management in a Warning World - Challenges and Opportunities**, 20-21 March, 2009, SCMS-Cochin.

"Possibility of using biomass gasifier for cooking in rural India", International conference, DCE, New Delhi, 2006-07.

"Comparison of API Grade Lubricating Oil with other oils used for 4-Stroke two Wheelers in India ICERP - 2005. Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

Also presented at III<sup>rd</sup> **International Conference on Energy. Research and Development**. Nov. 21-23, 2005. College of Engineering & Petroleum, Kuwait, University of Safat, State of Kuwait.

"Comparative Performance Evaluation of Engine Oils for 4-stroke 2-wheelers at National Conference on Energy & Fuel issues of future NCEFIF 2004 Nov.5-6, 2004 Pune.

Energy Conservation: A Societal Perspective. Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Technologies for Reducing Co<sup>2</sup> Emission by using Biogas as Fuel". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Energy Auditing of a Commercial Facility: A Case Study of Nuclear-Science Centre, New Delhi. Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Mitigation of Greenhouse Gas Emissions in the Agriculture – Sector". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Energy Auditing of an Automotive Components Manufacturing Unit". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Effect of North wall on thermal modeling of Green Houses". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.



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"Limitations of Life Cycle Energy Analysis in a Cement Industry". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Future Power Planning for Sustainable Development" paper presented and published. Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Deptt of Mechanical Engineering, Jamia Millia Islamia, New Delhi, Jan 23-24, 2004.

"Energy Auditing of an Automotive Components (Lighting) Manufacturing Unit". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Deptt of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

**International Conference on "Energy and Environment**: Strategies for Sustainable Development" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Energy Auditing of an Automotive Components Manufacturing Unit". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Energy Auditing of an Automotive Components Manufacturing Unit". Paper presented and published in the proceedings of the **International Conference on "Energy and Environment: Strategies for Sustainable Development**" organized by the Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi on January 23 & 24, 2004.

"Greenhouse Gas (GHG) Mitigation Strategies and Options in the Indian Power Sector", **National Conference on Advances in Contemporary Physics and Energy Research** at IIT Delhi to be held on 8<sup>th</sup> – 9<sup>th</sup> February, 2002.

"Education for Energy Management – Renewable Energy Engineering" **National Conference on Management of Higher Education** : 21<sup>st</sup> Century Challenges held at J.M.I. University on Feb 9<sup>th</sup> 2002.

"Removing Rural Urban Disparity – An Analysis of Infrastructure Factors", **National Convention of** Institution of Engineers, Allahabad Chapter, 17<sup>th</sup> October 2001.

"Importance of use of Renewable Energy in Global Warming" Presented at **National Symposium on Meteorology** beyond 2000, 16 – 19, February, Chennai.

"Statistical Analysis to Predict the CO2 Emission in 21<sup>st</sup> Century" Paper presented in the XII the **International conference & Exhibition on Research & Development** (January 15 –16 1999) organized by National Foundation of Indian Engineers (NAFEN), New Delhi.

Software Development for the estimation of ground level concentration of pollutants" Paper presented in the XII<sup>th</sup> **International conference & Exhibition on Research & Development** (January 15 – 16, 1999) organized by National Foundation of Indian Engineers (NAFEN) New Delhi.

"Innovative Anaerobic Digestion process : Technologies for converting waste to energy and other useful products" Paper presented in the XII the **International conference and Exhibition on Research & Development** (January 15 –16, 1999) organized by National Foundation of Indian Engineers (NAFEN), New Delhi.

"Pollution due to Electroplating "Industries" Paper presented at the XIIth **International conference and Exhibition on Research & Development** (January 15 – 16, 1999) organized by National Foundation of Indian Engineers (NAFEN), New Delhi.

"Application of renewable Energy (Solar Energy) to Keep Pollution Free Environment". Proceedings of ECNM'99 **International conference on Environmental Challenges** for the New Millennium held on 25<sup>th</sup>, November, 1999 organized by Indian Society of Environmental Management (ISEM) and J.M.I. University, New Delhi.



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"Energy Demand and Environment for the Next Millennium". Proceedings of ECNM' 99 **International conference on Environment Challenges** for the New Millennium held on 25<sup>th</sup> - 27<sup>th</sup>, Nov – 1999 organized by Indian Society of Environmental Management (ISEM) and J.M.I. University, New Delhi.

"Comprehensive waste management facility for an industrial estate in India". Proceedings of ECNM' 99 **International conference on Environmental Challenges** for the New Millennium held on 25<sup>th</sup> – 27<sup>th</sup>, Nov- 1999 organized by Indian Society of Environmental Management (ISEM) and J.M.I. University, New Delhi.

"Industrial environmental risk assessment and control: A simple method for managing environmental risk." Proceedings of ECNM' 99 **International conference on Environmental Challenges** for the New Millennium held on 25<sup>th</sup> – 27<sup>th</sup>, Nov- 1999 organized by Indian Society of Environmental Management (ISEM) and J.M.I. University, New Delhi.

"Bioremediation of Oil Field Wastes". Proceedings of ECNM' 99 International Conference on Environmental Challenges for the New Millennium, 25<sup>-</sup>27, Nov- 1999 by Indian Society of Environmental Management (ISEM) & J.M.I. University, New Delhi.

"Performance of an Active Solar Distillation", presented at XIth **International Congress on Environment** 21<sup>st</sup> Century (December 16<sup>th</sup>-17<sup>th</sup>, 1997) organized by National Foundation of Indian Engineers New Delhi.

"Analytical study of the effect of orientation and inclination on the performance of distillation unit", presented at XI<sup>th</sup> **International Congress on Environment** 21<sup>st</sup> Century (December 16-17,1997), National Foundation of Indian Engineers (NAFEN), New Delhi.

"Performance Studies of Inverted Absorber Solar Distillation System" at **National Seminar on Solar** Energy for the common man, January 5-6, 1995.

"Energy Savings by Employing the Concept of Passive Solar Designs in Buildings", **All India Seminar on Energy Saved is Energy Generated** organised by The Institution of Engineers, Karnal, 1994.

"Environmental Imperatives – The Role of renewable sources of Energy". **National Programme on Management of Environment** Feb, 10 –11, 1994 Centre of Advanced Studies in Environmental Engineering, Delhi College of Engineering, Delhi.

"Towards a sustainable India advancing prosperity, opportunity and healthy environment for the 21<sup>st</sup> century". At **National programme on management of environment**, Feb, 10-11 -1994 centre of advance studies in environmental engineering, D.C.E. Delhi.