



## **Prof. SUDHAKAR JINDAL**

***Professor***

Mechanical Engineering Department  
&

***Coordinator***

Centre for Technology Management

**College of Technology and Engineering**

Maharana Pratap University of Agriculture and Technology

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## PERSONAL INFORMATION

1. NAME : **SUDHAKAR JINDAL**
2. DATE OF BIRTH : 28<sup>th</sup> October 1960
3. PRESENT DESIGNATION AND PLACE OF POSTING : PROFESSOR  
Mechanical Engineering Department  
College of Technology & Engineering  
Maharana Pratap University of Agriculture & Technology, Udaipur (Rajasthan)
4. PRESENT ADDRESS : 118/C, Pratap Nagar, Udaipur  
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E-mail: sjindals @ gmail.com
5. CAST/CATEGORY : General
6. EDUCATIONAL QUALIFICATIONS: Ph.D.; M.E.(Mech); M.B.A.; B.E.
7. DETAILS OF EXAMS PASSED :

S.No.	Particulars	University	Subject/ Spec.	Percentage & Div./Grade
1.	Higher Secondary	Central Board of Secondary Education, N.Delhi	Physics, Chemistry & Maths	82.6% Distinction in PC&M <b>(Third Rank in school)</b>
2.	B.E.	University of Jodhpur, Jodhpur (Raj).	Mechanical Engineering	74.83% Honors <b>(Fourth Rank)</b>
3.	M.B.A.	Sukhadia University, Udaipur (Raj).	Production & Marketing Management	69.27% I Div. <b>(Second Rank)</b>
4.	M.E. (Mech.)	JN Vyas University, Jodhpur (Raj).	Production & Industrial	75.5% Honors
5.	Ph.D (Mech Engg.)	MPUAT, Udaipur	Mechanical Engg.	

8. PROFESSIONAL EXPERIENCE :  
**A. Appointments**

S.No.	Post/Designation	Institution	Period		Nature of Duties	Duration
			From	To		
1.	Assistant Professor	C.T.A.E.	17.08.83	10.12.91	Teaching	8 Yrs.
2.	Assistant Professor (Senior Scale)	C.T.A.E.	10.12.91	26.07.98	Teaching	6 Yrs 6 months
3.	Assistant Professor (Selection Grade)	C.T.A.E.	27.07.98	15.06.06	Teaching	8 Yrs 6 months
4.	Associate Professor (Selected)	C.T.A.E.	16.06.06	6.03.10	Teaching	3 Yrs 9 months
5.	Professor	C.T.A.E.	7.03.10	Till date	Teaching	

**B. Administrative and other related positions held**

S.No	Position held / activity	Period From	Period To	Nature of Responsibility
1.	Workshop Superintendent (Additional Charge)	July 87	July 90	Management of staff and raw materials, production & maintenance of college facilities.
2.	-do-	Dec' 2000	Till Date	
3.	Advisor – Engineering Students Association (ESA)	2000	2010	Advising college student Association on matters related to technical events. Organising college annual function TECHNOFEST.
4.	Warden – PG Hostel	May 2002	July 2005	Management of hostel facilities and maintaining student discipline.
5.	Incharge – Training & Placement	1999	2003	Organising practical training for mechanical engg. Students and correspond with industry for placement of students
6.	Member – “Faculty committee for Agri. Engineering”, Rajasthan Agri. University, Bikaner	Sept 1990	Aug 1993	Approval of courses and Syllabi of Engineering discipline
7.	Member – Departmental Courses committee	1984	Till date	Devising new and modifying existing courses and syllabi of Mechanical Engineering discipline
8.	Member – College disciplinary committee	2002	Till date	Enquiry and disciplinary actions on students
9.	Member – Organising committees for various University level events.			Publication of reports, newsletter, etc. during Youth festival, convocation, etc. and arrangements like accommodation, transport, food, programmes, etc.
10.	Member – Flying Squad	2002	2003	Surprise checking in University examinations at constituent colleges
11.	Member –Tender, Purchase & Disposal Committee		Till date	Purchase of equipment and consumables for various departments and disposal of unserviceable & obsolete items.
12.	Member –TePP Committee	2007	Till date	Evaluation of proposals received from entrepreneurs for submission to DST for financial assistance
13.	Member – “Board of Studies for Engineering”, MPUAT, Udaipur	2009	2012	Approval of courses and Syllabi of Engineering discipline
14.	Coordinator – MBA Programme, CTAE, Udaipur (Additional Charge)	2010		Development of curriculum and obtaining approvals, day-to-day management of affairs of MBA programme

**C. Trainings / summer courses/Seminars/ Conferences organized:**

S.No.	Title of Course	Duration	Year	Sponsoring Agency
1	Industrial Management and Entrepreneurship	One-week	1989	ISTE, New Delhi

2	Interactive Management Strategies in Engineering	Two-week	2000	ISTE, New Delhi
3	Induction Training of Teachers of Technical Institutes	Three-weeks	2001	AICTE, New Delhi
4.	Maintenance of Farm Implements – Engineering Aspects	Three-weeks	2003	ICAR, New Delhi
5	Design and manufacturing techniques of Agricultural machinery with CAD software	Three-week	2007	ICAR, New Delhi
6.	Earthquake risk Management for rural and urban housing (Member of organising committee)	One-week	Aug 25-29, 2008	NITTTR, Chandigarh
7.	Training of engine mechanics and ITI students of Diesel mechanic trade on Biodiesel and SVO technology	One Day	2010 (7 <sup>th</sup> July)	PCRA, New Delhi
8.	All India seminar on Emerging and Sustainable Techniques in Civil Engineering (Member of organising committee)	Two Days	2010 (18-19 Oct)	IE(I), Udaipur local centre
9.	Technologies for use of Biofuels in IC Engines – workshop organized for NGOs and Fabricators	One day	2010 (14 <sup>th</sup> Dec)	PCRA, New Delhi
10.	All India seminar on Advances in manufacturing: Challenges of the decade ahead (as Co-convenor)	Two Days	2011 (18-19 June)	IE(I), Udaipur local centre

***D. Participation in refresher course:***

<b>S.No.</b>	<b>Title of Course</b>	<b>Duration</b>	<b>Year</b>	<b>Organising Institute</b>
1	Project Management Strategies for Implementation & Monitoring	two-week	1989	C.T.A.E.
2	Energy planning and management in context of holistic rural development	two-week	1999	C.T.A.E.
3	Total Quality Management	two-week	1995	IIT, Delhi
4	An Integrated approach to Flexible automated manufacturing	two-week	2000	C.T.A.E.
5	Rural energy planning and Programme Implementation strategies	One week	2002	C.T.A.E.
6	Integration of Ergonomics & Safety Considerations for Agricultural Machinery Design and Operation	Ten Days	2002	C.T.A.E.
7	Recent advances in Technologies for Waste-to-Energy Conversion	two-week	2003	MNIT, Jaipur
8	Quality assurance in Technical Education	One week	2005	C.T.A.E.

***E. Trainings and workshops attended:***

- 1 National workshop on “Role of Technical Institutions in promoting Gandhian Vision of Rural Industrialization” 28 Feb to 2 Mar,2003, sponsored by KVIC, AICTE, DST, Organized by IIT, Delhi and MGIRI, Wardha

- 2 Submitted deliberations in National Workshop on “Draft National policy on non-edible vegetable oils as bio-fuels” organized by SuTRA at Pune.
- 3 Two days National Workshop on “Krishi Vigyan Shabdawali nirman Avam Pustak Lekhan”, 9-10 June, 2003, organized by MPUAT & Vaigyanik tatha Takniki Shabdawali Ayog, GOI, New Delhi.
- 4 One day training at UCCI, Udaipur on “Conservation of Energy in Industry” organized by PCRA, New Delhi and CTAE, Udaipur.
- 5 One day workshop on “Bio-Diesel application for Diesel engines in Agricultural use”, organized by SuTRA, IISc, Bangalore and DST, Rajasthan at CTAE, Udaipur
- 6 Two day workshop on “Waste water management and treatment technologies for textile industry”, 27-28<sup>th</sup> June, 2007, jointly organised by deptt of civil engg., MNIT, Jaipur and Raj Pollution control board, Jaipur.
- 7 One day workshop on “Alternative fuels for IC engines” organized at Arya college of engineering and IT, Jaipur, 2007.
- 8 One day workshop on “Trends in engine development technology” organized at Arya college of engineering and IT, Jaipur, 2007.
- 9 International workshop on “Advances in combustion science and technology”, 31<sup>st</sup> Dec 2007 to 2<sup>nd</sup> Jan 2008, Organised by departments of Aerospace and Mechanical engineering, IIT Kanpur.
- 10 International workshop (MSSRF-PISCES) on “Indian Perspectives of Bioenergy”, 26<sup>th</sup> October 2010, organized by Research Programme Consortium for the Policy Innovation Systems for Clean Energy Security (PISCES) Project at CDFST, MPUAT, Udaipur.

***International / National conferences / seminars attended:***

1. International Conference on Waste to Energy, 3-4 Feb. 2001, MREC, Jaipur
2. International conf. on Energy and Environ. Tech. for sustainable development, Oct,2003, Malviya National Institute of Technology, Jaipur
3. All India Seminar on Climate Change: Moving Towards Low Carbon Economy & Life Style, Sept 5-6, 2008 organised by The Institution of Engineers (India) Udaipur Local Chapter.
4. One day seminar on “Petroleum conservation through Solar tunnel drying system”, on 20<sup>th</sup> July 2009 sponsored by PCRA, New Delhi, organised by College of Dairy and Food Science Technology, MPUAT, Udaipur.
5. National seminar on “Organic Farming for Tribal Development”, 3-4 Nov, 2009, Organised by Raja Kashi Govindum seva Samiti, Rajasthan College of Agriculture (MPUAT) and MLV Tribal Research & Training Institute (GOR), Udaipur.
6. International conference on “New Frontiers in Biofuels”, 18-19 Jan, 2010, Organised by Delhi Technological University, Delhi.
7. National Seminar on Value addition of Agricultural Produces and Current Status of Small Scale Food Processing Units, Feb 18-19, 2010 jointly organised by Indian Institute of Crop Processing Technology, Thanjavur, National Institute of Food Technology Entrepreneurship and Management and MPUAT, Udaipur.

***F. Research Projects:***

<b>Project title</b>	<b>Sponsoring agency</b>	<b>Duration</b>	<b>Funds/ budget</b>	<b>Status (ongoing/ complete)</b>
Study on performance enhancement of diesel engine	PCRA, New Delhi	2 Years (2007-	17.59 Lakh	completed

operating on bio diesel & vegetable oil for on-farm applications		2009)		
Performance evaluation of diesel engine running on biodiesel from Ambadi oil	AICTE, New Delhi	2 Years (2008-2010)	4.60 Lakh	completed
Popularising SVO technology among the farmers, entrepreneurs and other users for use of vegetable oil and biodiesel as fuel extender in diesel engines	PCRA, New Delhi	2 Years (2010-2012)	19.00 Lakh	Ongoing

**G. Other Projects:**

Project title	Sponsoring agency	Duration	Funds/ budget	Status (ongoing/ complete)
Modernisation of Thermal Engineering Lab (MODROBS)	AICTE, New Delhi	2 Years (2002-2004)	2.00 Lakh	completed

9. PUBLICATIONS:

Books & Manuals	:	2
Chapter	:	2
Papers in Journal	:	14
Papers in International conferences	:	11
Papers in national conferences	:	9

***For details see Annexure-I***

10. HONOURS & AWARDS:

- **Appreciation award by Hon'ble VC, MPUAT, Udaipur on 15<sup>th</sup> August 2009**
- Nominated for BEST TEACHER AWARD by students -2004
- Got 'Distinction' in Physics, Chemistry and Maths in CBSE Hr. Sec. Exams
- Awarded 'Honours' at UG degree (B.E.) examinations
- Awarded 'Second Rank' in MBA examination
- Awarded 'Honours' at PG degree (M.E.) examination
- 'Appreciation' by Dean on presentation of project proposal before HVC

11. SIGNIFICANT CONTRIBUTIONS

***See Annexure-II***

Place: Udaipur  
Date: 31.03.13

(S. JINDAL)

## LIST OF PUBLICATIONS

<b>Books, Chapters &amp; Manuals:</b>	
(i)	Laboratory Manual for Heat Transfer Laboratory
(ii)	Jindal S. and Bapna P.C. Petroleum Padarthon Ka Vikalp: Vanaspati Tel. <i>In: Carbonic Kheti Ke Sidhant Avum Prabandhan. Ed. R. C. Tiwari, V. N. Joshi and S. K. Khandelwal, 2010, Himanshu Publication, New Delhi (ISBN 978-81-7906-205-0) pp 332-345</i>
(iii)	Jindal S., Nandwana B.P., Rathore N.S. A Comparative Study of Performance, Combustion and Emissions of Diesel, Jatropha Methyl Ester and Karanj Methyl Ester in a DI-CI Engine. <i>In: New Frontiers in Bio fuels. Ed. P.B. Sharma and Naveen Kumar, Scitech Publications (India) Pvt. Ltd., Chennai (ISBN 978-81-8371-308-5) pp 70-79</i>
(iv)	Advances in manufacturing: Challenges ahead, Ed. B.P. Nandwana, S.Jindal, M.A. Saloda, M.S. Khidiya, B.L. Salvi, 2011, Himanshu Publications, India
<b>Papers:</b>	
<i>Journal (International/National):</i>	
1.	Jindal S. Cross Border Enterprise- A Paradigm For Food And Agribusiness Sector. Prabandh- Journal of Management Education and Research, December, 2003.
2.	Panwar N.L., Shrirame H.Y., Rathore N.S., Jindal S. and Kurchania A.K. Performance evaluation of a diesel engine fueled with methyl ester of castor seed oil. <i>Applied Thermal Engineering</i> , Volume 30, Issues 2-3, February 2010, Pages 245-249.
3.	Jindal S., Nandwana B.P., Rathore N.S. and Vashistha V. Experimental investigation of the effect of compression ratio and injection pressure in a direct injection diesel engine running on Jatropha methyl ester. <i>Applied Thermal Engineering</i> , 30 (2010) pp 442-448.
4.	Jindal S., Nandwana B.P., Rathore N.S. Comparative evaluation of combustion, performance and emissions of Jatropha methyl ester and Karanj methyl ester in a direct injection diesel engine. <i>Energy Fuels</i> , 2010, 24 (3), pp 1565–1572.
5.	Jindal S. Effect of engine parameters on Nox emissions with Jatropha biodiesel as fuel. <i>International Journal of Energy and Environment</i> , 2010, Vol.1, Issue 2. pp 343-350.
6.	Jindal S., Nandwana B.P., Rathore N.S. A Comparative Study of Performance, Combustion and Emissions of Diesel, Jatropha Methyl Ester and Karanj Methyl Ester in a DI-CI Engine. <i>Journal of Biofuels</i> Vol.1 No.1, January – June, 2010 pp.20-29.
7.	Jindal S. Effect of injection timing on combustion and performance of a direct injection diesel engine running on Jatropha methyl ester. <i>International Journal of Energy and Environment</i> , Volume 2, Issue 1, 2011 pp.113-122.
8.	Jindal, S. Combustion, performance and emissions of a DI-CI engine running on Karanj methyl ester: influence of injection timing. <i>International Journal of Sustainable Engineering</i> , Vol. 4, No. 2, 2011, 136–144, First published on: 29 November 2010 (iFirst).
9.	Jindal S. Vibration signatures of a biodiesel fueled CI engine and effect of engine parameters. <i>International Journal of Energy and Environment</i> , 2012, Vol.3.
10.	Jindal S. Experimental investigation of the effect of compression ratio and injection pressure in a direct injection diesel engine running on Karanj methyl ester. <i>International Journal of Sustainable Energy</i> , iFirst, 2011, 1–15, DOI:10.1080/14786451.2011.598936 Available online: 07 Jul 2011
11.	Jindal S. and Goyal K. Evaluation of performance and emissions of Hibiscus cannabinus (Ambadi) seed oil biodiesel. <i>Clean Technologies and Environmental Policy (Springer)</i> (Accepted for publication)

12.	S. Jindal and B. L. Salvi. Sustainability aspects and optimization of linseed biodiesel blends for compression ignition engine. <i>J. Renewable Sustainable Energy</i> , 4, 043111 (2012)
13.	Chitranjan Agarwal and Sudhakar Jindal. Comparative study of performance of CI engine with normal and high performance diesel fuels. <i>International Journal of Emerging trends in Engineering and Development</i> , Issue 2 volume 6 (2012) pp 437-442
14.	B. L. Salvi and S. Jindal. A Comparative Study of Engine Performance and Exhaust Emissions Characteristics of Linseed Oil Biodiesel Blends with Diesel Fuel in a Direct Injection Diesel Engine. <i>J. Inst. Eng. India Ser. C (Springer)</i> DOI 10.1007/s40032-013-0057-1
<i>International Conference:</i>	
1.	Jindal S. & Rathore N.S. Energy Balance Analysis of Wood Based ST-HAMARA-M Stirling Engine. <i>Proceedings of International Conference on Waste to Energy</i> , 3-4 Feb. 2001, MREC, Jaipur
2.	Jindal S. & Rathore N.S. Energy Analysis of Biomass Based Stirling Engine, accepted at Asia International Renewable Energy Conference, April 2004, Beijing, China
3.	Jindal S. & Mathur A.N. Entrepreneurship with polypack RDF. <i>Proceedings of International conf. on Energy and Environ. tech. for sustainable development</i> , 8-10 Oct,2003, Malviya National Institute of Technology, Jaipur (ISBN 81-8229-001-5) PP 95-100.
4.	Jindal S., Rathore N.S. and Saloda M.A.; Decentralised power generation for sustainable development, International conf. on Energy and Environ. tech. for sustainable development, Oct,2003, Malviya National Institute of Technology, Jaipur
5.	Jindal S., Nandwana B.P. and Rathore N.S.. A Comparative Study Of Performance, Combustion And Emissions Of Diesel, Jatropha Methyl Ester And Karanj Methyl Ester In A DI-CI Engine. Paper presented in 1st International Conference on New Frontiers in Biofuels, January 18-19, 2010, India Habitat Center, New Delhi, India, organised by Delhi Technological University, New Delhi.
<i>National Conference:</i>	
1.	Jindal S. & Bhatnagar A.; Effective Use of Organic Coagulants for faster settling rates in water recovery in Marble processing. National Seminar on Indian Mining Problems & prospects (NSIM-2002) organized by the MEAI-Nagpur chapter on 20-21, December, 2002 at Nagpur.
2.	Jindal S. Virtual enterprise- a reengineering tool for agribusiness sector. <i>Proceedings of 37<sup>th</sup> National Convention of ISAE</i> , Jan 2003, Udaipur
3.	Jindal S. & Bhatnagar A. Effective water recovery in marble processing with use of combi-dosing of inorganic and organic flocculant. <i>Proceedings of National Seminar on Environment for Sustainable Development</i> , Nov,2003, Institute of Engineers (India), Udaipur
4.	Jindal S., Nandwana B.P., Rathore N.S. and Vashistha V. Biodiesel And NOx Emissions: A Study On The Effects Of Engine Parameters. Paper presented in All India Seminar on Climate Change: Moving Towards Low Carbon Economy & Life Style, Sept 5-6, 2008 organised by The Institution of Engineers (India) Udaipur Local Chapter.
5.	Jindal S. and Bapna P.C. Petroleum Padarthon Ka Vikalp: Vanaspati Tel. National Seminar on Organic Farming for Tribal Development (3-4 November, 2009), Organised by Raja Kashi Govindam Seva Samiti, RCA and MLV Tribal Research & Training Institute (Government of Rajasthan) Udaipur
<b>Papers as co-author:</b>	
<i>International Conference:</i>	



1.	Goyal M., Jindal R., Jindal S. and Gupta A.B. Energy Auditing of selected Pumphouses of PHED in Jaipur City. International conference on Water and Wastewater: Perspectives of developing Countries (WAPDEC), Dec 11-13, 2002, IIT, New Delhi.
2.	Rawat M.M., Jindal R., Jindal S. and Gupta A.B. Energy analysis and up gradation of Grit chamber of STP Jaipur. International conference on Water and Wastewater: Perspectives of developing Countries (WAPDEC), Dec 11-13, 2002, IIT, New Delhi.
3.	Rathore N.S. & Jindal S. Energy planning for cooking sector. International conf. On Energy and Environ. Tech. For sustainable development, 8-10 Oct,2003, Malviya National Institute of Technology, Jaipur .(ISBN -81-8229-000-7) PP 372-374.
4.	Saloda M.A., Jindal S. & Rathore N.S. Energy audit – a tool for energy conservation. International conf. On Energy and Environ. Tech. For sustainable development, Oct,2003, Malviya National Institute of Technology, Jaipur
5.	Rathore N.S. & Jindal S. Development of an efficient and low cost solar water heater for domestic needs. International conf. On Energy and Environ. Tech. For sustainable development, Oct,2003, Malviya National Institute of Technology, Jaipur
6.	B.L. Salvi, S. Jindal and Lalta Prasad. An experimental study of neem methyl ester preparation and performance characteristics in compression ignition engine International Conference On Alternative Fuels for I. C. Engines, 6-8 February, 2013 pp 270-274 [ISBN : 97B-B1-924029-B-7]
<i>National Conference:</i>	
1.	Bhatnagar A. & Jindal S. IT application in Engineering Education for Teaching, Research, Extension & Consultancy. ISTE National workshop on 'Role of IT in Engg. Education' Vadodara, September 2000.
2.	Bhatnagar A. & Jindal S. Improvement of performance of diamond based cutting in the dimensional stone mining & processing. National Seminar on Indian Mining Problems & prospects (NSIM-2002) organized by the MEAI-Nagpur chapter on 20-21, December, 2002 at Nagpur.
3.	Saloda M.A., Jindal S. Energy saving by interrupting thermoelectric current in machining operations. National Conference on "Future Trends in Mechanical Engineering Research and Development" organized by Bharath Institute of Science and Technology, Chennai, on December 13-14, 2002.
4.	Saloda M.A., Jindal S. and Kalla H. Energy saving in turning by interrupting thermoelectric current. National Conference on "Advances in manufacturing: Challenges in decade ahead" organized by Mechanical Engineering Department, CTAE, Udaipur, on June 18-19, 2011

## SIGNIFICANT CONTRIBUTIONS

### A. **Academic:**

- Worked as a Member of “Faculty committee for Engineering”, Rajasthan Agricultural University, Bikaner for Three years (1990 to 1993) and working as Member of Board of Studies (Engineering faculty), MPUAT, Udaipur –responsible for evaluation and approval of the proposals for course modifications, new course introduction and curriculum development for the engineering faculty of the University.
- Actively participated and was instrumental in the establishment and development of Heat transfer Lab., Refrigeration and air-conditioning lab, Heat engines lab, Industrial Engineering lab, Metrology lab in the department and development of workshops.
- Developed a Research lab for alternative fuels for IC engines with funding under research projects from PCRA and AICTE.
- I have developed one lab manual for Heat Transfer Lab.
- I have got fourteen papers published in International journal and presented more than 20 papers in international and national conferences.
- I have organised TEN refresher courses (summer / winter schools)/ seminars/ conferences/workshops sponsored by ISTE, AICTE, ICAR, etc., for the faculty of engineering institutes from all over the country on the relevant technologies.
- I am supervising one PhD and guided/guiding number of PG (M.Tech./MBA) Thesis as major advisor in addition to regular seminars and projects at UG level.
- I have been a Paper setter for UG & PG exams of various universities for more than 25 years and visiting other engineering colleges of state as External Examiner.
- Teaching PG for last 20 years. I am being invited as Guest/Visiting faculty to MBA Programme for production management since 1988.
- Since the beginning of my career as teacher, I have been a member of courses committee of department (nominated or invited). I evaluated a number of courses critically and came up with modifications which were welcome by other members and were incorporated.
- I was actively involved in devising the syllabii for new degree programme in Mechanical engineering which started in year 1996 and later redesigning for semester scheme.
- Also I devised course curriculum in 2004 for PG in Mechanical Engineering for the specializations of ‘Thermal’ and ‘P&I Engineering’.
- In year 2008, a proposal for starting MBA (Technology) in CTAE was submitted by me, which was approved by Academic council. The programme and its curriculum was designed by me single handedly which was approved in 2010.
- In addition to these, I served as member on courses committee of various departments of college.
- Reviewer of papers for three international journals.

### B. **Technology developed :**

#### **Aola Pricking Machine:**

Looking to the problems in the processing of Aola, I launched an Aola pricking machine which I could develop as student project under my supervision

#### **Engine Modification Kit:**

For diesel engine (3.5 kW) normally used for agricultural applications (AV/TV-1 Type) to run on Straight Vegetable Oil (SVO). The technology development project was carried out

with financial support from PCRA, New Delhi.

**C. *Projects / Schemes / Activities including utilisation of funds:***

- Carried out MODROBS project (Rs.2.00 Lakh) on Modernisation of Thermal Lab financed by AICTE, New Delhi (2002-2004)
- Completed two research projects sponsored by AICTE (Rs 4.60 lakh) and PCRA (Rs 17.59 lakh)
- Ongoing research and extension project funded by PCRA (Rs 19 lakh).
- Served as member in Tender finalisation committees for equipment purchases in various departments of college & University.

**D. *Administrative:***

- Working as COORDINATOR of Centre for Technology Management since its inception in year 2010. As Coordinator, I am taking care of the centre's activities including academic, administrative, infrastructure development, training and placement, industrial visits, expert lectures, etc.
- Working as Workshop Superintendent (about eight years) taking care of all instructional facilities at the workshop and extending manufacturing and repairing facilities to all the departments of college. In this responsibility, I do have to plan, execute and supervise the classes, repair and maintenance of furniture, making new furniture for college and hostels, project fabrication for research and PG/UG students, general maintenance of equipment and facilities, etc in addition to the regular teaching works. The workshop has eleven shops and two production units with staff strength of about 25.
- Worked as Advisor to the Engineering Students Association (ESA) of the college from year 2000 to 2010. As advisor to the association, I have to tackle the students in hours of crisis and to help resolve the problems between students –student and student administration. The major achievement in this responsibility is withdrawal of election procedure of association executives and installation of Merit based nomination to various posts in year 2001 with students support for the system. Since year 2000, I have been organising the college annual function 'TECHNOFEST' as chief coordinator.
- Worked as Warden of the PG Hostel of the college for three years during 2002 to 2005. During the tenure, I made improvements in the water supply system and electrical distribution system of the hostel. The hostel discipline was restored with planned increase in the facilities for the students. Also I did plan for the bore wells and devised new water distribution network to remove the water shortage problems in all hostels.
- Worked as one of the founder member of "Career counseling, Training and Placement Bureau" of College and as Training in-charge of Mechanical engineering department for four years. During the tenure I made communication with a number of organizations for arranging seats for student's summer training and made efforts for building institution's corporate image creating good platform for campus placement of students of a newly instituted degree program.
- I involve myself actively in all the college level and University level events and served as member on organising committees for various events.

**E *Extension and field outreach activities:***

1. Delivered Two **Radio Talks** on the Operation and Maintenance of Agricultural pumping sets.
2. Participated and demonstrated the Aola pricking machine developed by me in **State level Kissan Mela (2004)** organized by Maharana Pratap University of Agriculture and Technology, Udaipur.

3. A demonstration of the technology developed for running diesel engine on straight vegetable oil (SVO) was made on the occasion of "**National Technology Day: 11 May 2010**" celebration at Udaipur. The state level program was organized and sponsored by Department of Science and Technology, Government of Rajasthan in association with Vigyan Samiti, Udaipur; Regional office, DST, Udaipur; Grass Roots Innovation Augmentation Network- North, Jaipur; Mahaveer International, Udaipur; Mining Engineers Association of India - Rajasthan Chapter, Udaipur and The Institution of Engineers (India)- local Centre, Udaipur.
4. Participated and demonstrated the Modification Kit developed for use of straight vegetable oil in Diesel engines in "**3<sup>rd</sup> National Science and Technology Expo – 2010**" held during December 14-16, 2010 at Govt. Fateh Sr. Secondary School, Udaipur, organized by The Creative Centre for Rural Development, New Delhi.
5. Designed brochure on **Biodiesel** –technology, advantages and applications for distribution among farmers and end users.
6. Designed brochure on **Modification Kit** for diesel engines to run on straight vegetable oils (SVO) for distribution among engine owners, mechanics, fabricators and NGOs working in the rural areas.
7. Doing Technology transfer project to the farmers and entrepreneurs of the district with sponsorship from PCRA, New Delhi. The technologies for biodiesel and SVO use are being demonstrated and trainings are being organized in villages and rural areas.

**F. *Involvement in activities of professional bodies & societies:***

- Life Member, Institution of Engineers (India), Calcutta
- Life member, Indian Society of Mechanical Engineers, New Delhi
- Life Member, Indian Institution of Industrial Engineering, Mumbai.
- Treasurer and Executive member, MBM Alumni Association, Udaipur
- Member, CTAE Alumni Society

**G. *Major Student projects guided:***

- Development of Two stroke, petrol engine test rig
- Development of experimental setup for Performance Rating experiment
- Preparing for ISO certification – Document manual for a Job shop enterprise at Udaipur
- Energy analysis of wood based Sterling engine
- Design and evaluation of Cyclone separator for diesel particulates
- Design of central air cooling system for college library
- Design and fabrication of Vortex Tube Refrigerator
- Design and fabrication of Amla Piercing Machine
- Energy Audit-a case study at Phosphate (I) Pvt. Ltd., Udaipur
- Work study of a Marble Tiling plant to enhance productivity
- 2-D Heat Transfer modeling with FEM and Experimental validation
- Comparative study of performance of Power petrol and Ordinary Petrol
- Comparative study of performance of Turbo Diesel and Ordinary Diesel
- Study of effect of engine parameters and biodiesel blends on vibration characteristics of DI-CI engine
- Evaluation of Karanj methyl ester as a fuel for CI engine
- Evaluation of Ambadi methyl ester as a fuel for CI engine
- Evaluation of Linseed oil methyl ester as a fuel for CI engine
- Evaluation of preheated SVO as a fuel for CI engine
- Study of the effect of supercharging in biodiesel engine
- Study on effect of EGR on NOx and smoke emissions in biodiesel engine