

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

Curriculum Vitae



Brief Profile: 1-2 paragraphs (not exceeding 500 words)

Engineering Teacher /researcher with 30 years of experience at NIT (REC) Tiruchi and four years of exposure to industrial R&D.

Interested in the fields related to thermal Engineering and energy. Offer Consultancy in the areas of Combustion, Hydraulics, Thermal sciences and Energy.

1. Name: **Dr. M. UDAYAKUMAR**
2. Designation: Professor
3. Office Address: Mechanical Engineering
Department, National Institute of Technology,
Tiruchirapalli 620 015.
4. Telephone (Direct) (Optional):
Telephone : 0431-2503405
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Mobile (Optional): +91-9487257871
5. Email (Primary):muday@nitt.edu Email (Secondary) :
6. Field(s) of Specialization: Thremodynamics, I C
engines, Combustion
7. Employment Profile

Job Title	Employer	From	To
Sr. Development Engineer (R & D Development)	Pioneer Equipment Co., P. Ltd, Baroda	1982	1985
Development Engineer	Baliga Lighting Equipment P. Ltd, Madras	1986	1986

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Lecturer- Mechanical Engineering	Regional Engineering College, Tiruchi	1987	1992
Assisatnt Professor	National Institute of Technology, Tiruchi	1992	2005
Associate Professor	National Institute of Technology, Tiruchi	2006	2007
Professor	National Institute of Technology, Tiruchi	2007	Till date

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Bharathidasan University, Tiruchy-24.	1997	-	Mechanical engineering, I.C. Engines and Combustion.
M.Tech.	I.I.T., Madras-36	1982	7.93/10	Mechanical Engineering, Thermal Sciences
B.E.	Government College of Engineering, Salem-11 (Madras University)	1980	First	Mechanical Engineering

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Instituti on	From	To
Chairman	Transport Dept., NITT	2003	2006
Head of the Department	Mechanical Engineering Dept., NITT	2004	2008
Dean, Administration(FW)	NIT Trichy	2009	2010

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Expert member-faculty selection	1. Anna University, Tiruchi 2. PSNA College of Engg, Dindigul 3. Chettinad Engg College, Karur	2010	Till date

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	4. Periyar Maniammai Univ. Tanjore 5. VIT Univ. Vellore		
Board member	Periyar Maniammai Women's polytechnic (Aided)	2013	2015
Expert member- Recruitment and assessment	DRDO labs, Brahmos, NIT clicut	2013	2015
BOS Member for Mech. Engg	Periyar Maniammai university, Anna University and its Autonos Colleges	2008	Till date

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2004	Energy Auditor	Bureau of energy Efficiency
2007	OHSAS 18000 Lead Auditor	ICQS

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)

13. Details of Academic Work

(i) Curriculum Development – UG, PG Programs

Established the Thermal Engg Lab of CEESAT in 2003.

(ii) Courses taught at Postgraduate and Undergraduate levels

UG	PG
a) Engineering Thermodynamics b) Advanced IC engines c) Thermal Engineering d) Oil Hydraulics and Pneumatics e) Engineering Graphics f) Basic Mechanical engineering g) Mechatronics h) Gas dynamics & Jet propulsion	a) Fuel Combustion and Emission Control b) Fire Engineering and explosion control c) Instrumentation

(iii) Projects guided at Postgraduate level : 50

(iv) Other contribution(s)- Class committee chairman, DC Chairman/Member (40 Ph.D.)

14. Details of Major R&D Projects

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Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Development and Testing of a Diesel Engine Using Coal/Charcoal as Fuel	MHRD	1993	1996	Completed
Combustion and Emission Investigations on a Charcoal Burning Diesel Engine	AICTE	1996	1998	Completed
Modernization and Removal of Obsolescence in Heat Power Engineering Laboratory	MHRD	1998	1999	Completed
Theoretical and Experimental Investigations on Performance influencing parameters of Industrial air compressors	MHRD	2002	2006	Completed
Modernization of Thermodynamics Laboratory	MHRD	2003	2005	Completed

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
Mr. Manoop	Solar Distillation	Supervisor	On-Doing
Mr. Mohamed Ibrahim N H	Soot formation studies in premixed flames	Supervisor	On-Doing
Mrs.Stella P. Jesumathy	Studies on improvement in phase change and heta transfer characteristic of paraffin wax in horizontal double pipe heat exchanger	Supervisor	2014
Mr. S. Venkatacha Lapathy	Heat Transfer-Convection in enclosures	Supervisor	2011

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Mr. M. Marimuthu		Co-Supervisor	2011
Mr. Pandian	Experimental investigation on a CI engine fuelled with pongamia biodiesel – diesel blend employing different NO _x reduction strategies	Co-Supervisor	2010
Mr. V. Arul Mozhi Selvan	Performance and emission characteristic of a variable compression ratio engine using diesel biodiesel ethanol nano particle blends	Co-Supervisor	2010
Mr. Mohamed Musthafa	Effects of biodiesel in fly ash and alumina coated low heat rejection diesel engine on performance and emission characteristics	Co-Supervisor	2010
Mr. K. Pannirselvam	Reciprocating air compressors	Supervisor	2009
Mr. R. Murugan	LPG/CNG fuels for SI Engines	Supervisor	2009
Mr. D. Vincent Herald Wilson	Modelling and analysis of Diesel Engines Injection system	Supervisor	2008
Mr. A. Ramesh Kumar	Absorption Refrigeration- GAX cycles	Supervisor	2008
Mr. D. Valavan	Vegetable oils as alternative fuels for IC Engines	Supervisor	2007
Mr. K. Kannan	I.C. Engines-Simulation of DI Diesel Engines	Supervisor	2012
Mr. V. Mariappan	Thermodynamic and thermoeconomic analysis of R134a-Dimethylacetamide vapour absorption refrigeration system having plate heat exchangers	Supervisor	2015

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
2010-	STTPs	National/local @ 30 events	Subject expert-Speaker/Chairperson	NITs and different universities in TN	
Till date	And workshops				

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17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International / National/ Local)	Date (s)	Role	Venue
Q.I.P. - Short term course on “Energy Conservation Measures for Manufacturing and Process Industries”,	Quality Improvement Program, Government of India	10-14, December, 2007.	Coordinator	National Institute of Technology, Tiruchirappalli
Q.I.P. – Short term training program on “Recent trends in IC Engine Testing”	Quality Improvement Program, Government of India	9-14, February, 2007.	Coordinator	National Institute of Technology, Tiruchirappalli

18. Invited Talks delivered

Topic	Date	Inviting Organization

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life Member	ISTE	
Life member	Combustion Institute	

20. Academic Foreign Visits

Country	Duration of Visit	Programme
Purdue university	July 08 – 20 / 2008	19 th international compressor engineering conference at Purdue

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21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
A. Ramesh Kumar, and M. Udayakumar	Simulation Studies On GAX Absorption Compression Cooler	Energy Conversion & Management	Vol 48(2007), pp 2604-2610	pp 2604-2610	2007	
A. Ramesh Kumar, and M. Udayakumar	Studies Of Compressor Pressure Ratio Effect on GAXAC	Applied Energy	Vol:85(2008), pp.1163-1172	pp.1163-1172	2008	
K.Kannan, M.Udayakumar	NOx and HC Emission Control Using Water Emulsified Diesel in Single Cylinder Diesel Engine	Journal of Engineering and Applied Science	Vol. 4, No. 8,	pp.1-4	2009	
V.ArulMozhiSelvan, R.B.Anand, &M.Udayakumar	Stability of DIESOHOL BLEND with Castor oil as Additive and its Performance and Emission characteristics in a variable Compression Ratio Engine	International Journal of Power Engineering	Vol. 1, No. 2, 2009, pp. 99-113.	pp.99-113	2009	
Arul MozhiSelvan, V., Anand, R.B., Udayakumar, M	Effects of Cerium Oxide Nanoparticle Addition in Diesel and Diesel-Biodiesel-Ethanol Blends on the Performance and Emission Characteristics of a CI Engine	Journal of Engineering and Applied Science	Vol. 4, No. 7, Sep. 2009, pp.1-6.	pp.1-6	2009	
A. Ramesh Kumar, M. Udayakumar, and R.Saravanan	Energy Analysis of a 1- Ton Generator-Absorber-Exchange Absorption-Compression (GAXAC) Cooler	ASHRAE Transactions	Vol:115(2009), Part-1. Paper No: CH-09-043	Paper No: CH-09-043	2009	
A. Rameshkumar, M. Udayakumar, R. Saravanan	Heat transfer studies on a GAXAC (generator-absorber-exchange absorption compression) cooler	Applied Energy	Vol: 86 9, 2009, pp. 2056-2064	pp. 2056-2064	2009	
K.Kannan, and M.Udayakumar	Modeling of Nitric Oxide Formation in Single Cylinder Direct Injection Diesel Engine using Diesel-Water Emulsion	American Jrl. Of Applied Sciences	Vol:6(7), 2009 pp. 1313-1320	pp. 1313-1320	2009	
M.Pandian, S.P.Sivaprakasam, and M.Udayakumar	Influence of Injection Timing on Performance and Emission Characteristics of naturally Aspirated Twin Cylinder CIDI Engine using Bio-Diesel Blend as Fuel	International Journal of Recent trends in Engineering(Mech. Engg),	Vol:1. NO; 5, June 2009, pp. 113-117	pp. 113-117	2009	
Arul MozhiSelvan, V., Anand, R.B., Udayakumar, M.,	Stability of Diesohol using Biodiesel as Additive and its Performance and Emission Characteristics in a Compression Ignition Engine under Various Compression Ratios	International Journal of Applied Engineering Research	Vol. 4, No. 9, 2009, pp. 1723-1738.	pp. 1723-1738	2009	
Arul MozhiSelvan, V., Anand, R.B., Udayakumar, M.,	Combustion Characteristics of Diesohol using Biodiesel as additive in a Direct Injection Compression Ignition Engine under Various Compression Ratios	Energy & Fuels	DOI:10.1021/ef900587h, 2009		2009	
Arul MozhiSelvan, V., Anand, R.B.,	Stability, Performance and Emission Characteristics of Diesel-Ethanol Blend	SAE	SAE Paper No. 2009-	PP. 32-0120	2009	

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Udayakumar, M.,	with Castor Oil as Additive in Variable Compression Ratio Engine		32-0120, 2009			
K.Kannan, and M.Udayakumar	Modeling of Nitric Oxide Formation in Single Cylinder Direct Injection Diesel Engine using Diesel-Water Emulsion	American Jrl. Of Applied Sciences	Vol:6(7), 2009 pp. 1313-1320	pp. 1313-1320	2009	
Stella jesumathy, M Udayakumar& S Suresh	Experimental study of enhanced heat transfer by addition of CuO nanoparticle	Heat and Mass Transfer/SPRINGER	June 2012, Volume 48, Issue 6, pp 965-978	pp 965-978	2012	
Stella jesumathy, M Udayakumar& S Suresh	Heat transfer characteristics in latent heat storage system using paraffin wax	Journal of Mechanical Science and Technology/ SPRINGER	March 2012, Volume 26, Issue 3, pp 959-965	Pp 959-965	2012	
Stella P. Jesumathy, M. Udayakumar, S. Suresh	Thermal characteristics in latent heat energy storage system using paraffin wax	International Journal of Energy Technology and Policy	Volume 8, Issue 1>DOI: 10.1504/IJETP.2012.046024		2012	
Mohamed Ibrahim N H and M Udayakumar	Numerical investigation of exhaust gas emissions for a dual fuel engine configuration using diesel and pongamia oil	Ecotoxicology and environmental safety	Available online 9 June 2015, In Press, doi:10.1016/j.ecoenv.2015.05.044	9 June 2015	2015	
M. Muraleedharan , H. Singh, S. Suresh , M. Udayakumar	Directly absorbing Therminol-Al2O3 nano heat transfer fluid for linear solar concentrating collectors	Solar Energy	137 (2016) 134–142	PP.134-142	2016	
MohamedMusthafa, M., Sivapirakasam, S.P., Udayakumar, M.	Comparative studies on fly ash coated low heat rejection diesel engine on performance and emission characteristics fueled by rice bran and pongamia methyl ester and their blend with diesel	Energy	volume 36, issue 5,	pp. 2343 - 2351	2011	
Vincent H. Wilson; Udayakumar	Optimization of diesel engine parameters using Taguchi method and design of evolution	Journal of the Brazilian Society of Mechanical Sciences and Engineering	vol.34 no.4	pp.423-428	2012	
M. Pandian, S. P. Sivapirakasam and M. Udayakumar	Investigations on emission characteristics of the pongamia biodiesel–diesel blend fuelled twin cylinder compression ignition direct injection engine using exhaust gas recirculation methodology and dimethyl carbonate as additive	Journal of Renewable and sustainable energy	2/043110		2010	
M. Pandian,S. P. Sivapirakasam,M. Udayakumar,	Influence of Injection Timing on Performance and Emission Characteristics of Naturally Aspirated Twin Cylinder CIDI Engine Using Biodiesel Blend as Fuel”, International Journal of Recent Trends in Engineering,	International Journal of Recent Trends in Engineering	Vol. 1, No. 5,	113-117	2009	
Pandian, M, Sivapirakasam, S.P,	Investigation on the effect of injection system parameters on performance and	Applied Energy	Vol 88	2663–2676	2011	

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Udayakumar	emission characteristics of a twin cylinder compression ignition direct injection engine fuelled with pongamia biodiesel-diesel blend using response surface methodology					
M.Mohamedmusthafa, S.P.Sivapirakasam, M. Udayakumar	Experimental Investigation on Effects of Mahua Methyl Ester on a Low Heat Rejection Diesel Engine	International Journal of Mechanical Engineering and Materials Sciences	Vol 2	111-118	2009	
M.Mohamedmusthafa, S.P.Sivapirakasam, M. Udayakumar	Influence of Injection Timing on Performance and Emission Characteristics of Naturally Aspirated Twin Cylinder CIDI Engine Using Biodiesel Blend as Fuel	International Journal of Recent Trends in Engineering	Vol. 1	113-117	2009	
M.Mohamedmusthafa, S.P.Sivapirakasam, M. Udayakumar	Experimental investigation on effects of the low heat rejection diesel engine running on jatropa methyl ester	Journal of Environmental Research and Developmen	Vol 4, No. 3	811-821	2010	
M.Mohamedmusthafa, S.P.Sivapirakasam, M. Udayakumar	Performance And Emission Characteristics Of LHR CI Engine Fuelled With Rice Bran Oil As Biodiesel	International Journal of Recent Trends in Engineering	Volume 4 No 3	1-5	2010	
M.Mohamedmusthafa, S.P.Sivapirakasam, M. Udayakumar	A comparative evaluation of Al ₂ O ₃ coated low heat rejection diesel engine performance and emission characteristics using fuel as rice bran and pongamia methyl ester	J. Renewable Sustainable Energ	Vol. 2,	Paper No 053105	2010	
M. Mohamedmusthafa, S.P. Sivapirakasam, M. Udayakumar, and K.R. Balasubramanian	Effects of Al ₂ O ₃ Coating on Diesel Engine Performance, Combustion, and Emission Characteristics Fueled by Pongamia Methyl Ester and Its Blends with Diesel	AICHE - Environmental Progress & Sustainable Energy Journal	In-press			
Arul Mozhi Selvan, V., Anand, R. B., Udayakumar, M	Effects of Cerium Oxide Nanoparticle Addition in Diesel and Diesel-Biodiesel-Ethanol Blends on the Performance and Emission Characteristics of a CI Engine	Journal of Engineering and Applied Science	Vol. 4,	No. 7	2009	
Arul Mozhi Selvan, V., Anand, R. B., Udayakumar, M	Stability of diesohol blend with castor oil as additive and its performance and emission characteristics in a variable compression ratio engine”,	International Journal of Power Engineering	Vol. 1, No. 2	pp. 99-113.	2009	
Marimuthu, M., Anand, R. B., Udayakumar, M	Performance and emission characteristics of a DI diesel engine using palm oil and sunflower oil”, Internatioanl Journal of Electrical Engineering and Embedded Systems	Internatioanl Journal of Electrical Engineering and Embedded Systems	Vol. 1, No. 2	pp.41 – 48.	2010	
Mariappan, V., M. Udayakumar and S. M. F. Anwar	Thermoeconomic analysis of R134a-DMAC vapour absorption refrigeration system. Int. J. Appl. Mech. and Mater	Int. J. Appl. Mech. and Mater	592-594,	1837-1841.	2014	
Mariappan, V., R. L. Shrestha M., Udayakumar and S. Suresh	Thermodynamic analysis of R134a – DMAC Vapor Absorption Refrigeration (VAR) system	Int. J. Comput. Eng. Res	086-096		2012	
Mariappan, V., R. B. Anand and M. Udayakumar	A simplified design procedure of R134a-DMAC plate type bubble absorber for vapour absorption refrigeration system	IEEE Eplere	1	81-87	2010	

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(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
Mohamed Ibrahim N H and M Udayakumar	Thermodynamics modeling on emission in single cylinder diesel engine				CEESAT NIT Trichy	Jan-2015
Manoop M, M. Udayakumar	A HISTORIC REVIEW OF PRESSURE TRANSIENTS IN A HYDRAULIC SYSTEMS	Proceedings of the Fortieth National Conference on Fluid Mechanics and Fluid Power	FMFP2013-207		NIT	2013
A Ramesh kumar , M Udayakumar	Comparison of the performance of NH ₃ -H ₂ O , NH ₃ -LiNO ₃ and NH ₃ -NaSCN GAX and GAX absorption compression (GAXAC) coller	Internation sorption heat pump conference			Korea	2008
M Udayakumar, Pannir Selvam, T suthakar	In situ performance evaluation of industrial reciprocating air compressor	19 th international compressor engineering conference at Purdue			USA	2008
M Udayakumar, Pannir Selvam, T uthakar	Iprovement in the instantaneous swept volume measuring device	19 th international compressor engineering conference at Purdue			USA	2008
Udayakumar M, Murugan R, Umashankar K. S,	Numerical simulation of turbulent premixed combustion in SI Engine	International conference on numerical analysis and applied mathematics	Pp.773-778		Greece	2005

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(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
Dr. M. Udayakumar	BME-052 Basics of Thermal Engineering	IGNOU	2010	--
			-	
		-		