

Faculty Profile

1. Name : **Dr. K. KalidasaMurugavel**
2. Age & Date of birth : 60 Yrs. 15.05.1962
3. Designation : Principal & Professor - MECH
4. Academic Experience : 37 Yrs.
5. Area of Expertise : Thermal and Energy Engineering
6. Name of the Courses handled : **UG**
 1. Engineering Thermodynamics
 2. Thermal Engineering
 3. Gas dynamics and jet propulsion
 4. Turbomachines
 5. Power plant Engineering
 6. Heat and Mass transfer
 7. Introduction to Engineering**PG**
 1. Solar Energy and Utilization
 2. Advanced thermodynamics
 3. Instrumentation & Control for Energy Systems
 4. Cogeneration and waste heat recovery
 5. Energy conversion systems
7. Research Area : Solar Desalination
8. Ph.D work and publications : **Solar Still**

Hands of research experience on modeling and enhancing the productivity & effectiveness of conventional solar stills like Single basin passive solar still, Single Basin Double Slope Basin Solar Still and Multi-Effect Solar Still.

Reputed International Publications : 10
9. Progress after Ph.D : 1) Reputed International Publications : 36
 - 2) Reviewer for leading International Journals,
 - i. Desalination
 - ii. Renewable and Sustainable Energy Reviews.
 - iii. Energy and Building.
 - iv. Energy Conservation and Management.
 - v. International Journal of Green Energy Technology.
 - vi. Environmental Progress and Sustainable Energy.
 - vii. Journal of Renewable and Sustainable Energy.



Solar Thermal

Solar Still

In addition to the conventional stills, comparative performance analysis, Exergy analysis and year round performance prediction of special type of solar stills like Inclined Solar Still, Low pressure solar still and Passive solar still.

Other Solar Thermal Systems

Research in this includes experimental analysis on integrated collector storage solar water heater with compound parabolic concentrator and concrete absorber solar water heating. Performance improvement of on Spiral Flow Passive Solar Water Heater in which variations in exit water temperature & efficiency of the system were studied for different mass flow rates so as to reach the maximum efficiency point. Analytical work on Double Pass Solar Air Heater with and without Thermal Energy Storage is also being carried out.

Solar Photovoltaics

Performance enhancement of the Solar PV system using novel Maximum Power Point Tracking and characteristic study on Schiff bases and their metal complexes as organic photovoltaic materials have been done.

Proposed Research

- Field performance and economic viability of standalone Solar Photovoltaic power plants with a combination of various PV technologies for domestic remote rural hamlet electrification.
- Study of heat transfer enhancement in Solar Parabolic collector using Graphene based Nano fluids.

10. Ph.D Scholars guided : Completed : 6
Pursuing : 2
11. Details of Projects guided(UG and PG) : No. of PG projects :20
No. of UG projects : 8
No. of Publications through student projects
International Journals: 26
International Conferences: 3
12. Research Publication details : Annexure 1
13. Details of R&D Projects : 1) Labview Integrated Performance Monitoring and Analyzing Energy Data of Co-Located PV Power Plants with Different Technologies - AICTE, New Delhi(RPS Scheme) - 2013-16, Rs. 12,50,000.00
2) Experimental Study on Solar Steam Generation System with Compressed Water Thermal Energy

- Storage System DST, New Delhi(Solar Energy Research Initiative (SERI) - 2014-16, Rs. 38,91,000.00
14. Details of Consultancy Project : 1) Grid tied Solar PV Roof Top Restaurant – 78 kWp Restaurant at Hotel AAR Royal Park, Tirunelveli.
2) Zero EB House with PV Terrace for first floor at Tirunelveli.
3) Power quality study on harmonics, capacitor relocation for energy savings and submission of implementation report at Kayaar Exports Private Ltd., Nalatinputhur.
4) Energy audit in lighting systems and submission of post implementation report on energy savings at Kayaar Exports Private Ltd., Nalatinputhur.
15. Interaction with outside world : Visiting regularly Engineering Institutions all over India to train the faculty on outcome based education.
16. Professional society activities, events, conferences organized : 1. Conducted workshop on OBE for the faculties and conducted academic audit for Civil Engineering Department of Albertan College of Engineering, AISAT, Cochin, Kerala during 17th and 18th November 2015.
2. Conducted two days workshop on NBA Accreditation exclusively for faculty of NIT, Jalandar, Punjab on 31 Oct and 1 November 2015.
17. Professional society activities, events, conferences attended : 1. 11th International CDIO Conference, Chengdu University of Information Technology, Chengdu, Sichuan, P.R. China, June 2015.
2. Participated and presented paper in 12th International CDIO Conference, Turku University of Applied Sciences, Finland, June 12- 16, 2016.
18. FDP, Short term courses, workshops, seminar organized : MNRE Sponsored Seminar/ Workshop on
1. Recent Advancements in Renewable Energy – Rs. 35,000/-
2. Recent Advancement in Solar Power Technology – Rs. 50,000/-
3. Renewable and Green Energy Sources and Technologies - Rs. 50,000/-
4. Research Opportunities in Solar Thermal – Rs. 50,000/-
5. Next Generation Technologies for Sun-Wind Energy Conversion - Rs. 86,000/-
6. Solar Photovoltaic and Thermal Energy- State of Art Technology for Rural Development - Rs. 91,000/-

19. FDP, Short term courses, workshops, seminar attended

: a) Workshops attended as participant:

1. Attended three days Training for identification of Master Trainer's/Evaluators, organized by NBA, as participant, at Galgotia University, Noida, UP from 19th to 20th January, 2013
2. Attended three days Training for identification of Master Trainer's/Evaluators, organized by NBA, as participant, at SVKM's NarseeMonjee Institute of Management Studies [NMIMS], Shirpur, Maharashtra from 15th to 17th March, 2013.

b) Workshops attended as Expert:

3. Attended three days Training, as expert, for identification of Master Trainer's/Evaluators, organized by NBA, at Thappar University, Patiala, Punjab from 9th May to 12th May, 2013.
4. Attended three days Training, as expert, for identification of Master Trainer's/Evaluators, organized by NBA, at Visvesvaraya Technological University, Belgaum, Karnataka from 17th May to 19th May, 2013.
5. Participated the workshop on NBA Accreditation as expert for the second day at CIEM campus, Kolkata during 21 – 23 November, 2014, organized by ESCI, Hyderabad.
6. As Expert, participated in Curriculum Frame work and Revision Workshop of I & II Semester Computer Science, Electrical & Electronics and Allied Branches to a group of Diploma Curriculum Committee of Government of Karnataka from 19/01/2015 to 30/01/2015, for second day 20/01/2015, organized by NITTTR Extension Centre, Bangalore.
7. As Expert, participated in Curriculum Frame work and Revision Workshop of I & II Semester Mechanical (General), Mechanical Engg (Instrumentation), Mechatronics, MTT, HPT, WSMT, and Automobile Branches to a group of Diploma Curriculum Committee of Government of Karnataka from 16/02/2015 to 27/02/2015, for first day 16/02/2015, organized by NITTTR Extension Centre, Bangalore.
8. Participated the workshop on NBA Accreditation as expert for the second and third days at IE(I)-Himachal Pradesh State Centre from 24-26 June 2015, organized by ESCI, Hyderabad.
9. Participated the workshop on NBA Accreditation as expert for the third and fourth days at Government Engineering College, Kozhikode, Kerala between 16 to 18 July 2015, organized by ESCI, Hyderabad.

10. Participated the workshop on Quality Improvement initiatives in Technical and Higher Education in compliance with NBA Accreditation as expert for the second and third days at ESCI campus during 26-28 May 2015, organized by ESCI, Hyderabad.
11. Participated the workshop on Quality Improvement initiatives in Technical and Higher Education in compliance with NBA Accreditation as expert for the second and third days at GSSSIETW women's college, Mysuru, Karnataka from 21st to 23rd July 2015, organized by ESCI, Hyderabad.
12. Participated the workshop on Quality Improvement initiatives in Technical and Higher Education in compliance with NBA Accreditation as expert for the second and third days at ESCI campus during 07-09 October 2015, organized by ESCI, Hyderabad.
13. Participated in NBA-SAR review program and reviewed SAR for five programs, at Government Engineering College, Kozhikode, Kerala on 19/09/2015.
14. Conducted two days workshop on NBA Accreditation exclusively for senior faculty of Institute of Chemical Technology (ICT), Mumbai on 4th and 5th December 2015.
15. Conducted two days workshop on NBA Accreditation exclusively for all faculty of Institute of Chemical Technology (ICT), Mumbai on 5th and 6th February 2016.
16. Conducted One day workshop on “ NBA- an Overview” on second day (24th May 2016) of the Academic Planning and Review Workshop from 23rd to 26th May, 2016 for Principals of polytechnic colleges in Kerala.
17. Conducted Three day workshop on “Outcome based Education and NBA Accreditation Process & SAR” 18th Decemberto 20th December2016at Avona Hotel Lonvala, Maharashtra, Organized by ESCI, Hyderabad.
18. Conducted One day workshop on “Overview of NBA Accreditation Process & SAR” 22ndJuly, 2017 at Velammal Engineering College, Chennai.
19. Conducted Three day workshop on “impart professional & need-based continuing education and Training” 15th Septemberto 17th September2017 at SJPN Trust's, Hirasugar Institute of Technology,Nidasoshi, BelagaviDist, Karnataka.
20. Conducted Three day workshop on “Overview of NBA Accreditation Process & SAR” 9thNovemberto

- 11th November 2017 at Lucknow, organized by ESCI, Hyderabad.
21. Conducted Three day workshop on “Overview of NBA Accreditation Process & SAR” 11th Decemberto 13December2017 at National Institute of Technology, Manipur, organized by ESCI, Hyderabad.
22. Conducted Three day workshop on “Outcome based Education and NBA Accreditation Process & SAR” 6thMarchto 8th March2017 at Hyatt Regency, Kolkata, organized by ESCI, Hyderabad.
20. Course module developed : Training module on outcome based education to engineering faculty.
21. New program specific facility created : CDIO Work Space has been established with all facilities to support conceive, design, implement & operation scope of simple to complex problems for individual as well as group based products
22. Laboratories/research facilities established : 1) Establishment of Energy Simulation laboratory
2) Creation of basic Research Facilities like Trough & Parabolic collectors, PV panel with different technologies, with and without tracking, Single & Multiple slope single & double basin Solar Stills, Solar Air heater, Solar water heater, Solar drier, tunnel dryer, cabin type drier, solar pond, PVT collectors and CPVT collectors at Energy Park for performance evaluation.
3) Established NDT laboratory and initiated the establishment of Welding research laboratory, Centre for new material development and characterization, Digital Fabrication Laboratory and Advanced modeling laboratory.
23. Contribution to working Institution : 1. Coordinated the training activities for the training of staff members on OBE and SAR preparation. Trained the entire faculty by conducting different training program for the different cadre of faculty during 2013.
2. Coordinated in preparing SAR for three programs, applied for accreditation, faced the committee and got accreditation for all three programs under Tier I (Washington Accord) in 2013.
3. As Head of the Department, coordinated and prepared SAR under Tier I form Mechanical Engineering and applied for accreditation in 2014.
4. Coordinated curriculum design process for Regulation 2015 based on OBE and CBCS for all programs and prepared the curriculum for Mechanical Engineering Program.

Development activities carried out

1. Solar Steam Cooking System for 1000 inmates at Boys Hostel with MNRE subsidy to reduce the LPG requirements
2. 400 Cu.mBio Gas Plant each at Boys & Girls Hostel to run 200 KVA Genset for 3 Hours using effluent waste to meet the power requirements of the campus
3. 3 X 10 kWp Solar PV power plant has been installed to partially meet the energy requirements of the campus.
4. 11 Nos. of 500 LPD Solar Water Heating System at Hostel
5. 38 Nos. of Solar Street Light in the campus
6. Energy Efficient LED lights and fans procured to save 50% of energy in Hostel, various Laboratories and Verandah.
7. Energy Meters installed in 26 different locations in the campus to monitor & reduce the energy consumption.

Additional Responsibilities held

1. Served in Gent's Hostel as Resident Tutor for two years, as Deputy Warden for twelve years and as Associate Warden for two years.
2. Transport Officer –for two years
3. In-charge for ISTE student chapter -for two years
4. Fine arts In-charge –for two years
5. Program Officer for National Service Scheme –for 10 years
6. Convener for College Academic Audit Committee

ANNEXURE - 1

INTERNATIONAL RESEARCH PUBLICATIONS

Sl. No	Name of the Authors	Title of Paper	Name of the Journal	Publicati on Details	Year	Present Impact Factor
1.	Dr. K. KalidasaMurugavel Dr. S. Malayappan, Dr. R. Narayanasamy	A study on barreling behavior of aluminium billets during cold upsetting with an extrusion die constrain at one end	Materials & Design	Vol. 28 (3) pp 954-961	2007	2.2
2.	Dr. K. KalidasaMurugavel Dr. Kn.K.S.K. Chockalingam, Dr. K. Srithar	Progresses in improving the effectiveness of the single basin passive solar still	Desalination	Vol. 220 pp. 677–686	2008	2.59
3.	Dr. K. KalidasaMurugavel Dr. Kn.K.S.K. Chockalingam, Dr.K. Srithar	An experimental study on single basin double slope simulation solar still with thin layer of water in the basin	Desalination	Vol. 220 pp. 687–693	2008	2.59
4.	Dr. K. KalidasaMurugavel Dr. Kn.K.S.K. Chockalingam, Dr. K. Srithar	Modeling and Verification of Double Slope Basin Solar Still using Laboratory and Actual Solar Conditions	Jordan Journal of Mechanical and Industrial Engineering	Vol. 3 pp 228 - 235	2009	-
5.	Dr. K. KalidasaMurugavel Dr. Kn.K.S.K. Chockalingam, Dr. K. Srithar, Dr. S. Sivakumar, J. Riaz Ahamed	Single Basin Double Slope Basin Solar Still with minimum basin depth and energy storing materials	Applied Energy	Vol. 87 pp 514 - 523	2010	5.106
6.	Dr. K. KalidasaMurugavel Dr. K. Srithar	Performance Study on basin type double slope solar still with different wick materials & minimum mass of water	Renewable Energy	Vol. 36 pp 612 – 620	2011	2.978
7.	MR. S.S. Krishnananth Dr. K. KalidasaMurugavel	Experimental Study on Double Pass Solar Air Heater with Thermal Energy Storage	Journal of King Saud University :: Engineering Sciences	Vol. 25 (2) pp135-140	2013	-
8.	T. Rajaseenivasan T. Elango Dr. K. Kalidasa Murugavel	Comparative study of double basin and single basin solar stills	Desalination	Vol. 309 pp. 27-31	2013	2.59

9.	T. Rajaseenivasan Dr.K.KalidasaMurugavel T.Elango R.Samuel Hansen	A Review of Different Methods to Enhance the Productivity of the Multi-Effect Solar Still	Renewable and Sustainable Energy Reviews	Vol. 17 pp. 248-259	2013	6.018
10.	Dr.K.KalidasaMurugavel P.AnburajR.SamuelHansenT.Elango	Progresses in inclined type solar stills	Renewable and Sustainable Energy Reviews	Vol. 20 pp. 364-377	2013	6.018
11.	T.Rajaseenivasan, Dr.K.KalidasaMurugavel	Theoretical and experimental investigation on double basin double slope solar still	Desalination	Vol. 319 pp. 25–32	2013	2.59
12.	P.Anburaj,R.Samuel Hansen, Dr.K.KalidasaMurugavel	Performance of an Inclined Solar Still with Rectangular Grooves and Ridges	Applied Solar Energy	Vol. 49 No. 1, pp. 22–26	2013	-
13.	S.Maheshwaran, Dr.K.KalidasaMurugavel	Experimental Study on Spiral Flow Passive Solar Water Heater	Applied Solar Energy	Vol. 49 No. 2, pp. 89–92	2013	-
14.	V. Sriram, R. Samuel Hansen, Dr.K.KalidasaMurugavel	Experimental Study on a low pressure solar still	Applied Solar Energy	Vol. 49 No. 3, pp. 137–141	2013	-
15.	Dr. K. KalidasaMurugavel, Dr. K. Srithar	Single Basin Double Slope Solar Still - Year Round Performance Prediction For Local Climatic Conditions At Southern India	Thermal Science	Vol 17 (Suppl. 2), Pages - S429 - S438	2013	1.21
16.	N. Ponkarthik, Dr.K.KalidasaMurugavel	Performance enhancement of solar photovoltaic system using novel Maximum Power Point Tracking	Electrical Power & Energy Systems	Vol.60 pp.1-5	2014	3.432
17.	A. Wesley JeevasanK.KalidasaMurugavel, M.A. Neelakantan	Review on Schiff bases and their metal complexes as organic photovoltaic materials	Renewable and Sustainable Energy Reviews	Vol. 36 220–227	2014	5.627
18.	Rajaseenivasan. T., KalidasaMurugavel. K., Elango, T.	Performance and exergy analysis of a double-basin solar still with different materials in basin	Desalination and Water Treatment	Pages1-9	2014	0.852
19.	Muthu Manokar, A., KalidasaMurugavel, K., Esakkimuthu, G.	Different parameters affecting the rate of evaporation and condensation on passive solar still – A review	Renewable and Sustainable Energy Reviews	Volume 38, Pages 309–322	2014	5.627

20.	K Devanarayanan, K KalidasaMurugavel	Integrated collector storage solar water heater with compound parabolic concentrator– development and progress	Renewable and Sustainable Energy Reviews	Volume 39, Pages 51-64	2014	5.627
21.	V Krishnavel, A Karthick, KK Murugavel	Experimental Analysis of Concrete Absorber Solar Water Heating Systems	Energy and Buildings	Vol. 84, Pages 501-505	2014	2.465
22.	Dr. K. KalidasaMurugavel and Srithar K	Effect of cover plate transmittance on solar still performance	International Journal of Green Energy	Vol.12 (4), PP - 431-439	2015	2.069
23.	KS Maheswari, KK Murugavel, G Esakkimuthu	Thermal desalination using diesel engine exhaust waste heat—An experimental analysis	Desalination	Vol. 358, Pages 94-100	2015	3.96
24.	RS Hansen, CS Narayanan, KK Murugavel	Performance analysis on inclined solar still with different new wick materials and wire mesh	Desalination	Vol. 358, Pages 1-8	2015	3.96
25.	T Elango, KK Murugavel	The effect of the water depth on the productivity for single and double basin double slope glass solar stills	Desalination	Vol. 359, Pages 82-91	2015	3.96
26.	T Elango, A Kannan, KK Murugavel	Performance study on single basin single slope solar still with different water nanofluids	Desalination	Vol. 360, Pages 45-51	2015	3.96
27.	N Karthikeyan, KK Murugavel, SA Kumar, S Rajakumar	Review of aerodynamic developments on small horizontal axis wind turbine blade	Renewable and Sustainable Energy Reviews	Vol. 42, Pages 801-822	2015	5.510
28.	P Durkaieswaran, KK Murugavel	Various special designs of single basin passive solar still—A review	Renewable and Sustainable Energy Reviews	Vol.49, Pages 1048-1060	2015	5.510
29.	M Maria Antony Raj, K KalidasaMurugavel, T Rajaseenivasan, K Srithar	A review on flash evaporation desalination	Desalination and Water Treatment	Pages 1-10	2016	1.173
30.	Sam Stanley S.G, KalidasaMurugavel K, Anbarasan V	Performance of packed bed double pass solar air heater with different inclinations and transverse wire mesh with different intervals	Thermal Sciences	Vol. 20 No.01, Pages 179 – 184	2016	1.21
31.	Arun Kumar R, EsakkimuthuG, KalidasaMurugavel K	Performance enhancement of a single basin single slope solar still using agitation effect and external condenser	Desalination	Vol. 399, Pages 198-202	2016	3.96

32.	RS Hansen, KK Murugavel	Enhancement of integrated solar still using different new absorber configurations: An experimental approach	Desalination	Vol. 422, Pages 59-67	2017	5.52
33.	C. Jeyabalaji, K. KalidasaMurugavel, T. Rajaseenivasan	An experimental comparative performance study of semi-cylindrical and double slope solar still	Desalination and water treatment	Vol. 67 pages 11-15	2017	1.173
34.	A Karthick, K KalidasaMurugavel, L Kalaivani, U Saravana Babu	Performance study of building integrated photovoltaic modules	Advances in Building Energy Research	Vol.12 no. 2 178-194	2018	--
35.	A Karthick, KK Murugavel, P Ramanan	Performance enhancement of a building-integrated photovoltaic module using phase change material	Energy	Vol. 142, Pages 803-812	2018	4.52
36.	A Karthick, K KalidasaMurugavel, L.Kaliavani	Performance analysis of semitransparent photovoltaic module for skylights	Energy	Vol.162 798-812	2018	4.96
37.	P Ramanan, KKalidasaMurugavel, A Karthick	Performance analysis and energy metrics of grid – connected photovoltaic systems	Energy for Sustainable Development	Vol.52 104-115	2019	3.61
38.	P Ramanan, KKalidasaMurugavel, A Karthick, K Sudhakar	Performance evaluation of building – integrated photovoltaic systems for residential buildings in southern India	Building Services Engineering Research & Technology	Vol. 41 no. 4 492-506	2020	1.4
39.	A Karthick, K KalidasaMurugavel, K Sudalaiyandi, A Muthu Manokar	Building integrated photovoltaic modules and the integration of phase change materials for equatorial applications	Building Services Engineering Research & Technology	Vol. 41 no. 5 634-652	2020	1.4
40	A. Karthick, K. KalidasaMurugavel, Aritra Ghosh, K. Sudhakar, P. Ramanan	Investigation of a binary eutectic mixture of phase change material for building integrated photovoltaic (BIPV) system	Solar Energy Materials and Solar Cells	Vol. 207 110360	2020	6.1
41	Ramanan, P, KalidasaMurugavel, K, Karthick, A, Hari Kishan, D & Suriyanarayanan, G	Performance enhancement of photovoltaic module by integrating eutectic inorganic phase change material	Energy Sources, Part A: Recovery, Utilization, and Environmental Effects	DOI: https://doi.org/10.1080/15567036.2020.1817185	2020	1.184
42	B Prince Abraham, K KalidasaMurugavel	Influence of Catalyst Layer and Gas Diffusion Layer Porosity in Proton Exchange Membrane Fuel Cell Performance	Electrochimica Acta	389 138793	2021	6.901