

FACULTY PROFILE

NAME : Dr. G. KUMARESAN

PRESENT POSITION & : Associate Professor

ADDRESS Institute for Energy Studies
Department of Mechanical Engineering
CEG, Anna University, Chennai -25



ADDITIONAL RESPONSIBILITY: Deputy Director, Centre for Research &
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I. EDUCATION:

- Doctoral Degree (Ph.D): Department of Mechanical Engineering, *CEG, Anna University*, July 2012
- Master Degree (M.E.): Design and Production of Thermal Power Equipment, Department of Mechanical Engineering, *NIT Tiruchirappalli*, Nov 1999
- Bachelor Degree (B.E.): Mechanical Engineering, *Alagappa Chettiar College of Engg & Tech, Karaikudi, MK University*, Apr 1997

II. Professional Experience:

Sl.No.	Position	Institute Name	Period
1.	Lecturer	Thirumalai Engg. College, Kanchipuram	2000-2002
2.	Research Scholar	IIT Madras	Aug 2002-Nov 2003
3.	Lecturer	CEG Campus, Anna University	Dec 2003-Dec 2008
4.	Assistant Professor (Senior Grade)	CEG Campus, Anna University	Dec 2008 to Dec 2015
5.	Associate Professor	CEG Campus, Anna University	From Dec 2015 to Till date

III. Research Projects

Sl. No	Funding Agency & Sanction Detail	Name of the Project	Status of the Project	Budget Amount in Lakhs (Rs.)	Role
1	Indo- German DST BMBF DST Sanction No. INT/FRG/BMBF/P-44/2008, Dated 06.02.08	Phase Change material based Thermal storage system for solar air heating applications	Completed	7.56	Co-Investigator
2	Tamil Nadu Energy Development Agency, Chennai	Development of Solar Cooker based on Thermal Storage system for cooking during night / early morning	Completed	10.00	
3	CTDT, Anna University Lr. No 2359/CTDT-1/2011, dated 24/10/11	Development of an Instrument to measure the thermal conductivity of PCM	Completed	0.25	Student Innovative Project Guide
4	IEI, Kolkata Letter no. Tech/R.7, dated 17-02-2015	Heat Transfer improvement studies in Solar Concentrating Collector	Completed	0.50	Investigator
5	MNRE, New Delhi 2014	Investigations on small capacity wind turbine integrated with compressed air energy storage system	Completed	45.5	Co-Investigator
6	DST, New Delhi DST/TM/WTII/2K16/164(G), dated 27.10.2016	Desalination through waste heat recovery from solar PV operated VCR system	Ongoing	35.35	Co-Investigator
7	CTDT, Anna University Lr. No 709/CTDT-1/RSS SIP/2017	Design and Development of a Solar Tunnel Evaporator System for Tannery Effluent Water Treatment	Completed	0.25	Student Innovative Project Guide

8	CTDT, Anna University Lr. No 709/CTDT-1/RSS SIP/2017	Investigation of Effect of Shot Peening on Heat Transfer Enhancement in Latent heat energy storage unit	Completed	0.25	Student Innovative Project Guide
9	CTDT, Anna University Lr. No 709/CTDT-1/RSS SIP/2017	Design and Development of Compound Parabolic Collector for medium temperature applications	Completed	0.25	Student Innovative Project Guide
10	DST, New Delhi	Efficient development and integration of Desalination unit utilizing the waste heat from Solar Thermal plant	Ongoing	144	Team Member

IV. Consultancy

Sl. No.	Title	Sponsoring Agency	Amount Rs.(Lakh)	Status
1.	Development of Solar thermal concentrating units for cooking applications	Shiroi Energy, Chennai	2.25	Completed

V. Supervision of students : Ph.D. Programme:
Completed – 03 ; Thesis Submitted – 02; Ongoing - 04
M.E. Programme:
Completed - 63 ; Ongoing - 10

VI. Patent : Filed – 1 (Solar PV powered simultaneous generation of Power, cooling and water)

VII. Countries Visited :

Sl. No.	Country	Purpose of the Visit	Duration
1.	Denver, USA	Paper presentation at World Renewable Energy Forum	12-19 May 2012
2	Cracow, Poland	Paper presentation at 9th International Conference on Computational Heat and Mass Transfer	23-26 May 2016
3	Thammasat University, Thailand	Paper presentation at 3 rd International Conference on Renewable Energy Technologies	22-24 Jan 2017

4	Roma Tre University, Rome, Italy	Paper presentation at 12th International Conference on Computational Heat, Mass and Momentum Transfer	03-06 Sep 2019
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VIII. Publications

i) International Journal

1.	G. Kumaresan , R. Velraj and S. Iniyan. Thermal Analysis of D-Mannitol for use as Phase Change Material for Latent Heat Storage. <i>Journal of Applied Sciences</i> . 2011, Vol. 11, pp 3044-3048.
2.	K. Senthil Manikandan, B.Sivasankar, V. Suresh Kumar, V. Sukumar and G. Kumaresan . Experimental Investigation of Latent Heat Thermal Energy Storage Characteristics of Paraffin/Carbon fiber composite as Phase Change Material. <i>International Journal of Current Research</i> 2011, Vol. 3, pp 211-214.
3.	G. Kumaresan , Rahulram Sridhar, and R. Velraj. 'Performance studies of a solar parabolic trough collector with a thermal energy storage system'. <i>Energy</i> . 2012, Vol. 47, pp 395 – 402. (Impact Factor: 4.968)
4.	K. Senthilmanikandan, G. Kumaresan , R. Velraj and S. Iniyan. 'Parametric study of a solar parabolic trough collector'. <i>Asian Journal of Applied Sciences</i> . 2012, Vol. 5, pp 384-393.
5.	M. IlayaBharathi, G. Kumaresan and C. Sharmeela. 'Design and Implementation of single axis solar tracking system'. <i>CiiT International Journal of Programmable Device Circuits and Systems</i> . 2012, Vol. 4, pp 470-473.
6.	V. Krishna Rao, V. Punitha, C. Sharmeela, G. Kumaresan . 'Comparative Study of Converters using MPPT Algorithms for a Stand Alone Solar PV System'. <i>CiiT International Journal of Programmable Device Circuits and Systems</i> . 2012, Vol. 4, pp 466-469.
7.	R. Thamaraiselvi, P. Ramesh, J. Baskaran, C.Sharmeela, and G. Kumaresan . 'A Survey of PV Based Solid State Transformer for Storage and Distribution Applications'. <i>International Journal of Scientific & Engineering Research</i> . 2013, Vol. 4, pp 137-140.
8.	M.A. Lenin, M.R. Swaminathan and G. Kumaresan . 'Performance and emission characteristics of a DI Diesel engine with a nano fuel additive'. <i>Fuel</i> . 2013, Vol. 109, pp 362-365. (Impact Factor: 4.908)
9.	G. Kumaresan , G. Raju, S. Iniyan and R. Velraj. 'CFD analysis of flow and geometric parameter for a double walled solar cooking unit'. <i>Applied Mathematical Modelling</i> . 2015, Vol. 39, pp 137-146. (Impact Factor: 2.617)
10.	A Gopinath, K Sairam, G Kumaresan and R Velraj, 'Effects of properties and structural configuration of fatty acid methyl esters on biodiesel fuel properties: A review' <i>Proc IMechE, Part D: Journal of Automobile Engineering</i> . 2015, Vol. 229, pp 357-390. (Impact Factor: 1.414)
11.	T Shaffi, A Gopinath, K Sairam, G Kumaresan and R Velraj, 'Effect of dispersion of various nano additives on the performance and emission characteristics of a CI engine fuelled with diesel, biodiesel and blends - A review'. <i>Renewable and Sustainable Energy Reviews</i> . 2015, Vol. 49, pp 563-573. (Impact Factor: 9.184)
12.	G. Kumaresan , V.S.Vigneswaran, Esakki Muthu and R. Velraj. 'Performance assessment of a solar domestic cooking unit integrated with PCM based storage system' <i>Journal of Energy Storage</i> , 2016, Vol. 6, pp 70-79. (Impact Factor: 3.517) .
13.	A.K. Babu, V. Antony Aroul Raj and G. Kumaresan , 'Misfire detection in a multi-cylinder diesel engine: A machine learning approach'. <i>Journal of Engineering Science and Technology</i> . 2016, Vol. 11, pp 278-295.

14.	G. Kumaresan, P. Sudhakar, R. Santosh, R. Velraj, 'Experimental and numerical studies of thermal performance enhancement in the receiver part of solar parabolic trough collectors'. <i>Renewable and Sustainable Energy Reviews</i> . 2017, Vol. 77, pp 1363-1374. (Impact Factor: 9.184)
15.	P. Sudhakar, G. Kumaresan , R. Velraj, 'Experimental analysis of solar photovoltaic unit integrated with free cool thermal energy storage system'. <i>Solar Energy</i> . 2017, Vol. 158, pp 837-844. (Impact Factor: 4.374)
16.	G. Kumaresan , P Karthik, R Velraj, D.C. Denkenberger, 'Effect of fin orientations in a spherically encapsulated PCM for effective heat transfer enhancement'. <i>Chemical Engineering Transactions</i> . 2017, Vol. 62, pp 277-282.
17.	K. Hariharan, G. Senthil Kumar, G. Kumaresan and R. Velraj, 'Investigation on phase change behavior of paraffin PCM in a spherical capsule for solar thermal storage units'. <i>Heat Transfer Engineering</i> . 2018, Vol. 39, pp 775-783. (Impact Factor: 1.216)
18.	N. Satheesh Kumar G. Kumaresan , R. Santosh, P. Duraisamy and R. Venkatesan, 'Numerical Analysis of Baffle Cut on Shell Side Heat Exchanger Performance with Inclined Baffles' <i>Heat Transfer Engineering</i> , 2018, Vol. 39, pp 1156-1165. (Impact Factor: 1.216)
19.	A. K Babu, G. Kumaresan , V. Antony Aroul Raj , R. Velraj, 'Review of Leaf Drying: Mechanism and Influencing Parameters, Drying Methods, Nutrient Preservation, and Mathematical Models'. <i>Renewable and Sustainable Energy Reviews</i> . 2018, Vol. 62, pp 277-282. (Impact Factor: 9.184)
20.	G. Kumaresan , R. Santosh, G. Raju, R. Velraj, 'Experimental and numerical investigation of solar flat plate cooking unit for domestic applications'. <i>Energy</i> . 2018, Vol. 157, pp 436-447. (Impact Factor: 4.968)
21.	R. Santosh, T. Arunkumar, R. Velraj, G. Kumaresan , 'Technological advancements in solar energy driven humidification dehumidification desalination systems - A review'. <i>Journal of Cleaner Production</i> . 2018, Vol. 207, pp 826-845. (Impact Factor: 5.651)
22.	V.S. Vigneswaran, G. Kumaresan , S. Elansezhian, R. Velraj, 'Heat transfer studies on solar still assisted with and without latent heat storage material' <i>Desalination and Water Treatment</i> . 2019, Vol. xx, pp xx-xx. (Impact Factor: 1.631) doi: 10.5004/dwt.2019.23314
23	A. K. Babu, G. Kumaresan , V. Antony Aroul Raj , R. Velraj, 'CFD Studies on Different Configurations of Drying Chamber for Thin-layer Drying of Leaves'. <i>Energy Sources, Part A: Recovery, Utilization, and Environmental Effects</i> . 2019, Vol. 42, Issue 18 pp 2227-2239. (Impact Factor: 0.555)
24	M. Pramoth Raj, R. Santosh, M. R. Swaminathan, G. Kumaresan , 'Study of effect of Al and Cu microparticles dispersed in D-Mannitol PCM for effective solar thermal energy storage.' <i>Journal of Thermal Analysis and Calorimetry</i> . 2019, Vol. 139, pp 895-904. (Impact Factor: 2.042)
25	R. Santosh, G. Kumaresan , S. Selvaraj, T. Arunkumar, R. Velraj, 'Investigation of Humidification-Dehumidification Desalination System through Waste Heat Recovery from Household Air Conditioning Unit'. <i>Desalination</i> . 2019 Vol. 467, pp 1-11. (Impact Factor: 6.603)
26	V.S.Vigneswaran, G. Kumaresan , B.V. Dinakar, K Karthick and R. Velraj. 'Augmenting the productivity of solar still using multiple PCMs as heat energy storage' <i>Journal of Energy Storage</i> , 2019, Vol. 26, pp 1-11. https://doi.org/10.1016/j.est.2019.101019 (Impact Factor: 3.517) .
27	R. Santosh, S. Monisha, G. Krishna Kumar, R. Velraj, and G. Kumaresan . 'Experimental Evaluation of PVA as Novel Humidifier Material for Humidification Dehumidification Applications' <i>Journal of Testing and Evaluation</i> , 2020, (Impact Factor: 0.711) DOI: 10.1520/JTE20190722
28	S. Selvaraj, G. Kumaresan , and M.Jagabar Sathik. 'Modified 'K' Type Multilevel Inverter Topology with Reduced Switches, DC Sources and Power Loss' <i>International Transactions on Electrical Energy Systems</i> , 2020, Accepted (Impact Factor: 1.314)

29	R. Santosh, G. Kumaresan , G. Krishna Kumar, R. Velraj, 'Experimental Parametric Investigation of Waste Heat Powered Humidification Dehumidification System for Production of Freshwater from Wastewater'. <i>Desalination</i> . 2020 Vol. 484, pp xx-xx. (Impact Factor: 6.603)
30	A. K Babu, G. Kumaresan , V. Antony Aroul Raj , R. Velraj, 'Experimental Findings Investigations of Batch Drying Chamber for Thin-layer Drying of Leaves in a Heat-Pump Assisted Tray type Batch Drying Chamber '. <i>Journal of Mechanical Engineering</i> . 2020, Vol. 26, Issue 4, pp 254-265. (Impact Factor: 1.139)
31	S. Karthikeyan, K. Ravikumar, G. Kumaresan , R. Velraj, 'Enthalpy based mathematical modelling for thermal energy storage filled with paraffin encapsulated balls as storage material'. <i>Materials Today: Proceedings</i> . 2020, Vol. xx, Issue x, pp 1-5.
32	P. Sudhakar, R. Santosh, B. Asthalakshmi, G. Kumaresan, R. Velraj, 'Performance augmentation of solar photovoltaic panel through PCM integrated natural water circulation cooling technique'. <i>Renewable Energy</i> . xxxx, Vol. xx, Issue x, pp xxx-xxx. (Impact Factor: 6.274) Accepted

ii) International Conference

1.	P. Ajay Jeganathan, G. Kumaresan , R. Velraj, and S. Iniyan, "A Review on solid liquid phase change materials and applications", Advances in Mechanical and Building sciences in the 3rd millennium, 2009, VIT,Vellore,Page No 30/T1B003 /6021
2.	D. Yuvarajan, S. Arul, G. Kumaresan , R. Velraj, and S. Iniyan, "Experimental Investigation on Thermal Energy Storage type Cooking unit" Advances in Mechanical and Building sciences in the 3rd millennium, 2009,VIT,Vellore, Page No 29/T1B004/6038
3.	G. Kumaresan , M.A. Lenin, M.R. Swaminathan, " Effect of Metal Oxide Additives in DI Diesel Engine Performance and Emission" International conference on Frontiers in Mechanical Engineering, NIT, Surathkal, 2010
4.	G. Kumaresan , Rahulram Srithar, R. Velraj and S. Iniyan, "Thermal Analysis of D-Mannitol for use as a phase change material for thermal storage system" International Conference on Emerging Technologies in Renewable Energy, Anna University, Chennai, pp 59, 2010.
5.	K. SenthilManikandan, B. Sivasankar, V. Suresh Kumar, V. Sukumar and G. Kumaresan , "Comparative study of Thermal Characteristics of Latent Heat Thermal Energy Storage Unit using Carbon Fiber Brushes" International Conference on Thermal Energy and Environment, Kalasalingam University, Krishnankoil, Tamil Nadu, pp 132, 2011.
6.	G. Kumaresan , S. Iniyan S and R. Velraj, "Experimental and CFD analysis of a solar based cooking unit". World Renewable Energy Forum, WREF 2012, Including World Renewable Energy Congress XII and Colorado Renewable Energy Society (CRES) Annual Conference, Volume 1, Pages 312-317, 2012.
7.	P.Balavenkata Subramani, G. Kumaresan , "Analysis And Testing Of Box-Type Solar Cooker And Feasibility For Indian Climatic Conditions, "Impact of Climate Change on Food, Energy and Environment (ICCFEE 2013)", CC10, Sathyabama University, Chennai, 2013.
8.	P. Venkatamurali and G. Kumaresan , " Experimental Analysis of Single pass Air base PVT collector Integrated with PCM", Second International conference on Computing and Communication Technology. IAJJ college of Engg. Marthandam, 2013.
9.	K. Hariharan and G. Kumaresan , "CFD Analysis of Phase Change behaviour of Paraffin encapsulated in a spherical container", Second International conference on Computing and Communication Technology. IAJJ college of Engg. Marthandam, 2013.

10.	K. Hariharan, G. Senthil Kumar, G. Kumaresan and R. Velraj, “Experimental and CFD analysis of Phase Change behaviour of Paraffin encapsulated in a spherical container”. Proceedings of the 22 th National and 11 th International ISHMT-ASME Heat and Mass Transfer Conference December 28-31, 2013, IIT Kharagpur, India.
11.	N. Satheesh Kumar G. Kumaresan , R. Santosh, P. Duraisamy and R. Venkatesan. ‘CFD analysis of effects of baffle cut on shell side heat exchanger performance with inclined baffle, IX International Conference on Computational Heat and Mass Transfer, Cracow, Poland, 2016.
12.	M. Rajamohan, S. Sathish, R. Krishnamoorthy, G. Kumaresan , and H. Revanth ‘Numerical analysis of heat transfer augmentation in solar parabolic trough collector absorber tube using twisted tape insert’ International conference on Automobile, Marine and Mechanical Engineering, May 4-5, 2018, Sri Venkateswara College of Engineering, Sriperumbudur, Tamilnadu
13.	V.S.Vigneswaran, G.Kumaresan , P.Sudhakar, R. Santosh ‘Performance evaluation of solar box cooker assisted with latent heat energy storage system for cooking application’ 3 rd International Conference on Renewable Energy Technologies, Jan 22-24 Jan 2017, Thammasat University, Thailand
14.	V. Antony Aroul Raj, A.K Babu, G. Kumaresan and R. Velraj ‘Using Computational Fluid Dynamics for optimizing various configuration of tray driers’ 5 th International Conference on Computational Methods for Thermal Problems, July 9-11, 2018, IISc Bangalore.
15.	R. Santosh, S. Monisha, G. Krishna Kumar, R. Velraj, and G. Kumaresan ‘Experimental Evaluation of Humidification Potential of PVA Material for HDH Desalination System’ 2 nd International Conference on ‘New Frontiers in Chemical, Energy and Environmental Engineering’, Feb 15-16, 2019, NIT Warangal.
16.	G. Kumaresan , R. Santosha, H. Revanthb, G. Raju and S. Bhattacharyya ‘CFD Analysis of Phase Change Behaviour of Phase Change Material Encapsulated in Internally Finned Spherical Capsule’ XII International Conference on Computational Heat, Mass and Momentum Transfer (ICCHMT 2019), September 03-06, 2019, Rome, Italy.

IX. Short Course / Conference / Training Programme Participation

No	Name of the course	Organizer	Duration
1	Compact Heat Exchangers	Indian Institute of Technology Madras	Jan 9 th - 10 th , 2006
2	Effective Energy Management Through Energy Audit	A.C. College of Technology, Anna University, Chennai-25	Feb 24 th - 26 th 2006
3	Effective Teaching	Centre for Empowerment of Women & Department of Humanities and social Sciences, Anna University, Chennai- 25	16 th Mar 2006
4	Electrical Thermography Application	FLUKE & Technical Trade Links Pvt.Ltd	April 5 th 2006
5	Industrial Measurement and Automation- Emerging Trends in Power and Mining Industries	The Institution of Engineers (India)- Neyveli	Apr 28 th - 29 th 2006
6	Coal and Ash Handling in Thermal Stations	Department of Mechanical Engineering, Anna University, Chennai	Feb 21 st - 23 rd , 2007
7	Finite Element Analysis	TEQIP Sponsored Faculty Development Programme Dept.	Feb 23 rd - Mar 3 rd , 2007

		of Mechanical Engineering, Anna University, Chennai	
8	Recent Advances in automobile Engineering	IC Engineering Division, Dept. of Mechanical Engineering, CEG Anna University, Chennai	Mar 22 nd - 23 rd , 2007
9	Applied Hydraulics and Pneumatics	Centre for Faculty Development, Department of Mechanical Engineering, CEG Anna University, Chennai-25	June 12 th - 20 th , 2008
10	Current Design Trends in Gas Turbines	M.S Ramaiah School of Advanced Studies, Bangalore	Sep 26 th - 27 th , 2008
11	Thermal Energy Storage on Energy Efficient Buildings and Solar Applications	Institute for Energy Studies	March 11, 2009
12	Materials Science for Energy Storage	Department of Physics, Anna University	Jan 18-22, 2010
13	Advances in Strong Materials & its Applications in Mechanical Engineering	Department of Mechanical Engineering, Anna University	Feb 5 th & 6 th , 2010
14	Delhi International Renewable Energy Conference	MNRE	Oct 27 th to 29 th , 2010
15	NANOMEET 2010	Centre for NanoScience and Technology, Anna University	March 25 th -26 th 2010
16	Regulatory and Policy Framework for Market Development for Renewable Energy in India	World Institute of Sustainable Energy	June 14 th – 15 th 2010
17	Gas Dynamics and Jet Propulsion	Faculty Development Programme, Anna University	June 7 th – 13 th 2010
18	Solar Power Generation Technologies	Department of Mechanical Engineering, IIT Madras	Dec 6 th – 8 th 2010
19	Recent Trends in Renewable Energy	Institute for Energy Studies, Anna University	March 21 st – 23 rd , 2011
20	Dynamic Simulation of Mechanical Systems using MATLAB	SSN College of Engineering, Chennai	April 20, 2011
21	Recent Developments in Large Scale Solar Thermal Systems for Commercial applications and Green Buildings	Department of Mechanical Engineering, Anna University	June 22 nd 2011
22	World Renewable Energy Forum	NREL & American Solar Energy Society, USA	May 13 th – 17 th 2012
23	Advanced IC Engines	Centre for Faculty Development, Anna University	Dec 10 th – 17 th 2012
24	Renewable Energy, Climate Change & Energy Management	Anna University, Chennai	Jan 24 th – 25 th , 2013
25	22nd National and 11th ISHMT - ASME Heat and Mass Transfer Conference	IIT Kharagpur	28 th -31 st December 2013
26	Solar Energy Utilization	IES, Anna University, Chennai	03-03-2014
27	Advances in Solar Energy and Utilisation – Fast Forward with Solar Mission	IES, Anna University, Chennai	April 7 th & 8 th 2014
28	Solar resource assessment & Solar Project development	National Institute of Wind Energy, Chennai	12-11-2014
29	IX International Conference on Computational Heat and Mass Transfer	University of Calgary, Canada & Cracow University of Technology, Poland	23-26 May, 2016
30	3 rd International Conference on Renewable Energy Technologies	Thammasat University, Thailand	22-24 Jan, 2017

31	Opportunities and Challenges in Energy Storage Systems for Building, Solar & Wind Sectors	IES, Anna University, Chennai	04 March 2017
32	NBA Accreditation Procedures	NITTTR, Chennai	29-31 Oct, 2018
33	2 nd International Conference on New Frontiers in Chemical, Energy and Environmental Engineering	NIT Warangal	15-16 Feb, 2019

X. Guest Lecture / Invited Lecture Delivered

No	Topic	Organization	Date
1	Hydraulic Circuits	National Institute of Technical Teachers Training and Research, Chennai	20.07.2006
2	Hydraulics and Pneumatics	National Institute of Technical Teachers Training and Research, Chennai	07.07.2007
3	Applied Hydraulics and Pneumatics	Faculty Development Programme, Anna University	12-06-2008 to 20-06-2008
4	Hydraulics & Pneumatics	National Institute of Technical Teachers Training and Research, Chennai	25-09-08
5	Gas and Steam Turbines	National Productivity Council, Chennai	13.10.2008 to 17-10-2008
6	Pneumatic Controls and Fluid Power Logic Controls	Ordnance Factories Institute of Learning, Avadi	16-12-2008
7	Engineering Thermodynamics	Velammal Institute of Technology, Chennai	23-08-2012
8	Engineering Thermodynamics	RMK College of Engineering and Technology, Chennai	25-08-2012
9	Automotive Aerodynamics	National Institute of Technical Teachers Training and Research, Chennai	03-09-2012
10	Jet Propulsion	Apollo Engineering College, Chennai	08-09-2012
11	Hydraulics & Pneumatics for Industrial Automation	National Institute of Technical Teachers Training and Research, Chennai	30-10-2012
12	Nozzles and Diffusers	Easwari Engineering College, Chennai	10-12-2012

No	Topic	Organization	Date
13	Normal Shock Waves	Easwari Engineering College, Chennai	12-12-2012
14	Development and analysis of Heat Exchangers	Velammal Institute of Technology, Chennai	06-02-2013
15	Phase Change Thermal Energy Storage For Solar Applications	SMK Fomra Institute of Technology	19-02-2013
16	SIMPLE Algorithm – Pressure Velocity coupling	Easwari Engineering College, Chennai	15-06-2013
17	First and Second Law of Thermodynamics	RMK College of Engineering and Technology, Chennai	20-07-2013
18	Laws of Thermodynamics	Velammal Institute of Technology, Chennai	27-07-2013
19	Solar Thermal Power Generation	Paavai College of Engineering, Namakkal	21-08-2013
20	Steam Power Cycle	Adhi College of Engg. and Tech, Kanchipuram	16-09-2013
21	Solar Cooking System	NIT, Trichy	19-12-2013
22	Heat & Mass Transfer	Vel Tech Multi Tech	29-01-2014
23	Hydraulics & Pneumatics - Concepts & Applications	National Institute of Technical Teachers Training and Research, Chennai	30-01-2014
24	Introduction to Heat Exchangers	RMK College of Engineering and Technology, Chennai	01-02-2014
25	Transient Heat Conduction	Easwari Engineering College, Chennai	24-02-2014
26	Laws of Thermodynamics	RMK College of Engineering and Technology, Chennai	28-06-2014
27	Introduction to CFD	VelTech High Tech Engg. College	20-08-2014
28	Introduction to CFD	Sri Venkateswara College of Engineering, Sriperambudur	26-09-2014
29	FVM for Convection-Diffusion problems	Easwari Engineering College, Chennai	02-01-2015
30	Hydraulics & Pneumatics For Industrial Automation	National Institute of Technical Teachers Training and Research, Chennai	03-03-2015

No	Topic	Organization	Date
31	Radiation Heat Transfer	RMK College of Engineering and Technology, Chennai	29-08-2015
32	Centre of Gravity & Moment of Inertia	National Institute of Technical Teachers Training and Research, Chennai	15-03-2016
33	Advanced Propulsion Systems	Anand Institute of Higher Education & Technology, Chennai	01-04-2016
34	Heat Exchangers	Vel Tech University, Chennai	15-04-2016
35	Extended Surface Heat Transfer	Panimalar Engineering College, Chennai	31-05-2016
36	Fundamentals of solar radiation	NIT, Trichirappalli	06-06-2016
37	Heat transfer- Engineering Applications	Vel Tech High Tech Dr. Rangarajan Dr.Sakunthala Engineering College, Chennai	09-09-2016
38	Introduction to Computational Fluid Dynamics	Sri Sairam Engineering College, Chennai	14-09-2016
39	CFD Analysis of Heat Transfer & Solar Thermal Systems	VIT, Vellore	20-10-2016
40	CFD Analysis of Heat Transfer & Solar Thermal Systems	Government College of Engineering, Salem	15-12-2016
41	Search for Research and Steps for Completion	Kings Engg. College, Chennai	25-11-2017
42	CFD Analysis of Thermal Systems	Rajalakshmi Engg. College, Chennai	09-12-2017
43	CFD Analysis of Heat Transfer & Solar Thermal Systems	Sethu Institute of Technology, Kariapatti	12-12-2017
44	CFD Analysis of Thermal Systems	Sairam Engg. College, Chennai	13-12-2017
45	CFD Analysis of Thermal Systems	KLN College of Engg, Madurai	18-12-2017
46	CFD Analysis of Thermal Systems	National Engg. College, Kovilpatti	19-12-2017
47	CFD Analysis of Thermal Systems	Sri Krishna College of Engg. & Tech., Coimbatore	04-01-2018
48	CFD Analysis of Thermal Systems	Sri Eshwar College of Engg., Coimbatore	05-01-2018
49	CFD Analysis of Thermal Systems	PSNA College of Engg & Tech., Dindigul	06-01-2018

No	Topic	Organization	Date
50	CFD - Concepts & Applications	National Institute of Technical Teachers Training and Research, Chennai	16-03-2018
51	CFD - Solar Thermal Systems	SSN College of Engineering, Chennai	05-04-2018
52	CFD Analysis of Thermal Systems	Sairam Engg. College, Chennai	21-02-2019
53	CFD Analysis of Thermal Systems	Rajalakshmi Engg. College, Chennai	25-02-2019
54	Solar Radiation	SRM University, Kattankulathur	26-11-2019
55	Research Experience in Solar Thermal Systems	SRM University, Kattankulathur	25-02-2020
56	Energy and Exergy analysis of Solar Thermal Systems	SRM University, Kattankulathur	25-02-2020
57	Effective Technical and Review paper writing	CK Engg. College, Cuddalore	21-05-2020
58	Quality Research Paper writing and Publishing in High Impact Journals	Siddharth Institutions, Puttur, Andra Pradesh	27-05-2020
59	Fundamentals of CFD	Chennai Institute of Tech, Chennai	09-06-2020
60	Fundamentals and Applications of CFD	Sai Ram Ins. of Tech, Chennai	12-06-2020
61	CFD application in Thermal Engineering	National Institute of Technical Teachers Training and Research, Chennai	22-09-2020

XI. Short Term Courses Conducted

No	Topic	Organization	Date
1	Applied Hydraulics and Pneumatics	Faculty Development Programme, Anna University	12-06-2008 to 20-06-2008
2	Gas Dynamics and Jet Propulsion	Faculty Development Programme, Anna University	07-06-2010 to 13-06-2010
3	Supercritical Technology for Thermal Power Plants	Appadurai chair for Power Systems, Anna University	17-03-2011 to 19-03-2011
4	Renewable Energy Sources-Recent Trends & Developments	Appadurai chair for Power Systems, Anna University	14-12-2011 to 16-12-2011
5	Performance Improvement and Economic Analysis in Thermal Power Plants	Appadurai chair for Power Systems, Anna University	06-08-2012 to 08-08-2012
6	Heat and Mass Transfer	Faculty Development Training Programme, Anna University	10-12-2013 to 17-12-2013

No	Topic	Organization	Date
7	Awareness and training Programme on Solar PV system	UGC and Anna University	12-03-2014 to 15-03-2014
8	Training Programme on Solar PV system	TEDA and Anna University	<u>Batch 1:</u> May 26- 29, 2014 <u>Batch 2:</u> June 2-5, 2014 <u>Batch 3:</u> June 9-12, 2014 <u>Batch 4:</u> June 16- 19, 2014 <u>Batch 5:</u> June 23-26, 2014 <u>Batch 6:</u> Aug 18-21, 2014 <u>Batch 7:</u> Aug 25-28, 2014
9	Short term Training course on CFD using ANSYS Fluent	AU-FRG Institute for CAD/CAM, Anna University	20.06.2016 to 02.07.2016
10	One day workshop on “ Opportunities and Challenges in Energy Storage systems for Building, Solar & Wind Sectors ”	IES, Anna University	04-03-2017
11	Short term Training course on CFD using ANSYS Fluent	AU-FRG Institute for CAD/CAM, Anna University	18-11-2017 to 01-12-2017
12	Short term Training course on CFD using ANSYS Fluent	AU-FRG Institute for CAD/CAM, Anna University	04-12-2017 to 16-12-2017

XII. Membership in Professional Bodies

- ◆ Indian Society of Heating , Refrigerating, and Air-conditioning Engineers
- ◆ Indian Society of Heat and Mass Transfer
- ◆ The Institution of Engineers (India)

XIII Anna University - EDUSAT/ WEB Course Conducted

- 1) Gas Dynamics and Jet Propulsion – EDUSAT
- 2) Gas Dynamics and Jet Propulsion – Web Course

XIV. Awards / Honors Received

- 1) Recipient of Special Prize for the guidance of “**Best Student Innovative Project**” in the year 2018 supported by CTDT, Anna University.

- 2) Recipient of “**Excellence in Reviewing Award**” from Journal of Scientific Research and Reports
- 3) Served as Session Chair in the “**3rd Int. Conference of Renewable Energy Technologies (ICRET 2017)**” held at Thammasat University, Thailand.
- 4) Served as Session Chair in the “**3rd Int. Conference for Phoenixes on Emerging Current Trends in Materials, Manufacturing, Management Practices and Construction Technologies 2020**” held at Panimalar Engg. College, Chennai.

XV. Academic & Administrative Responsibilities

- Served as **Documentation Committee member** for TEQIP (2009) and **Infrastructure & Ambience Committee member** for NBA (2009)
- **Assessment Coordinator** for B.E. (Mech. Engg., - FT) during July-Nov 2011
- Served as **GATE work load Coordinator** for the period of 2009-2012
- **Chief Superintendent of PG examination** of Dept. of Mechanical Engineering, during Apr / May 2012
- **Faculty-in-Charge** of B.E. Mechanical Engg. (PT) Programme (Since May 2013)
- **Ph.D. /M.S. (By Research) Coordinator** for Department of Mechanical Engineering (Since May 2013)
- **NRI / CIWGC / FN Students Counsellor** (2012-15)
- Ph.D./M.S. (By Research) theses **Scrutiny Committee member** (2014-15)
- Served as **Project Coordinator** of Project Work Phase I and II of M.E. (Solar Energy & Energy Engg) for several years
- Served as **Inspection committee member** for various Affiliated Engg. Colleges and Industries

XVI. Other Responsibilities

- Member of Board of Studies for Mechanical Engg. Stream, Murugappa Polytechnic college, Avadi, Chennai
- Expert committee member for State Council of Educational Research and Training, Tamil Nadu
- Member of Performance Advisory Committee for the Dept. of Mechanical Engg., Chennai Institute of Technology, Chennai
- Acting as reviewer for various refereed journals (Elsevier, Tayler & Francis etc)

XVII. Courses Taught at CEG, Anna University

- Heat and Mass Transfer
- Computational Fluid Dynamics
- Design of Heat Exchanger
- Solar Energy Systems
- Gas Turbines/Turbomachines
- Gas Dynamics and Jet Propulsion

- Thermal Engineering
- Thermodynamics
- Hydraulics and Pneumatics
- Fluid Mechanics and Heat Transfer
- Advanced Engineering Fluid Mechanics

G. KUMARESAN