

BIO DATA

I General

- a) Name : Dr. Jose Prakash M,
b) Date of Birth : 29.08.1962
c) Qualification with year of passing

Degree	Institute/University	Specialization	Year of passing
Ph.D in Engineering	Indian Institute of Science, Bangalore	Cryogenics	2000
PG in Engineering (M.Tech)	College of Engineering, Trivandrum	Propulsion Engineering	1990
UG (B.Tech)	TKM College of Engineering, Kollam	Mechanical Engineering	1985

- d) Field of Specialization : Mechanical Engineering
e) Total Experience
Number of years of Industrial/ : Nil
R & D Experience : 22 years
Number of years of Teaching
Experience UG : 33 years
PG : 22 years

Curricular Activities

1. List of courses taught during last five years

- i) at UG level : Thermodynamics, Propulsion Engineering, Heat and Mass Transfer
ii) at PG level : Space Cryogenics, Cryogenic Heat Transfer, Advanced Fluid Mechanics and Heat Transfer, Computational Fluid Dynamics

2. Projects guided .

- i) No. of Industry based projects guided : **4**
ii) No. of U.G. projects guided : **32** (Published papers in International journals, one of the projects got TCS best project award)
iii) No. of P.G. projects guided : **19**

iv) PhD guidance

: 6

3. Contribution towards student development.

- Introduced innovation in teaching learning process, introduced new learning strategies.
- Engaged students in research: a three tier system, UG students, PG students and Research scholars
- Gave B.Tech and M.Tech projects on real life problems
- Trained the students to use state-of-the-art tools and techniques
- Instrumental in getting internship for students at University of Twente, Netherlands and Karlsruhe Institute of Technology, Germany

4. Efforts made in preparation of course material

- Prepared course material for the subjects Thermodynamics, Thermal Engineering laboratory and Computational Fluid Dynamics laboratory.
- Prepared curriculum and syllabus for B.Tech and M.Tech Programmes

5. Efforts made to give practical training for students (field visits, study tour etc.)

- Accompanied students in their study tour and industrial visits.
- As part of learning content beyond syllabus experts talks were arranged. The experts include senior scientists from ISRO, KMML, Professors from IITs and IISc.
- Arranged visits for students to NIIST, Brahmos Aerospace etc..
- Internship to students at University of Twente, Netherlands and Karlsruhe Institute of Technology, Germany

6. Development of experiments/equipment for better instruction/ demonstration of engineering principles

- Used CFD tools to demonstrate heat and fluid flow problems while teaching heat transfer
- Designed a new experimental set up to determine the thermal conductivity of liquids
- Developed a set up to demonstrate the use of Data Acquisition System(DAQ) using Labview. The parameters include temperature, strain, Pressure
- As part of demonstration of the application of first law of thermodynamics, sessions were arranged to familiarize the various types of thermometers including, thermocouple, thermistor, platinum resistance thermometer etc.. Experiments were given on calibration of thermocouple using constant temperature bath.
- As part of demonstration of application of first and second law of thermodynamics students were asked to do experiments on air compressor and formulate a steady state steady flow problem.

7. Student Motivation & Career Guidance

- Used to share my career journey and my experience as a faculty at TKM College of Engineering and as a research scholar at Indian Institute of science
- Inspired the students to study the subjects content beyond syllabus
- Used to discuss relevance of the subject and gave real life problems
- Gave project works on real life engineering problems.
- Directed them to useful career resources.
- Arranged talks by former students, eminent scientists, top officials from industries.
- Organized career development programmes

Academic Leadership & Administration

1. Contribution towards development of institution

- Obtained projects worth 75 lakhs from various agencies for the development of the department/college
- Set up two new laboratories namely Computational Fluid Dynamics(CFD) centre and nanofluid research laboratory
- Instrumental in signing **three MoUs** with Liquid Propulsion System Centre,ISRO
- Instrumental in signing **MoU** with University of Twente, Netherlands
- During my tenure as Head of the Department all the three programmes(2 UG+1 PG) run by the department got **NBA accreditation**, BTech Mechanical programme got prestigious **6 year accreditation**
- During my tenure as Head of the Department the Institution got NAAC accreditation with **A grade**

2. Contribution towards development of new courses/ revision of syllabus and Curriculum

- Served as curriculum committee chairman, BTech Mechanical Engineering programme (First batch,2015 scheme), APJ Abdul Kalam Technological University
- Served as curriculum committee chairman, BTech Mechanical Engineering programme (2013 scheme), University of Kerala
- Served as curriculum committee chairman, MTech Mechanical Engineering programme (First batch,2015 scheme), APJ Abdul Kalam Technological University, Kollam Cluster
- Developed syllabus for the course MTech in nanotechnology, APJ Abdul Kalam Technological University
- Served as member, Board of studies UG and PG, University of Kerala
- Served as member, Faculty of Engineering and Technology, University of Kerala
- Introduced new courses in the curriculum of B.Tech and M,Tech programmes

3. Efforts made in continuing education/ short term courses in the last five years

- Conducted a Faculty Development Programme on Micro and Nanoscale Heat Transfer, December 16-18, 2014
- Gave talks in Faculty Development Programmes conducted in-house and other institutions
- As TEQIP-II academic nodal officer efforts I was successful in sending all the technical staff of TKM college of engineering for training to reputed training centres.
- As TEQIP-II academic nodal officer efforts I was successful in sending 90 percentage of faculty for Faculty Development Programmes in other reputed institutions.
- As research nodal officer, 18 seed money projects were sanctioned to faculty members

4. Involvement in administration duties

- Head of the Department from 28.12.2015 to 08.07.2018
- Lead the Department in NBA and NAAC accreditation
- During my tenure as Head of the Department all the three programmes (2 UG+1 PG) run by the department got **NBA accreditation**
- B.Tech Mechanical programme got prestigious **6 year** accreditation
- During my tenure as Head of the Department the Institution got NAAC accreditation with **A grade**
- Professor in charge of Postgraduate programmes
- Academic Nodal officer, TEQIP-II, TKMCE
- Research Nodal Officer, TEQIP-II, TKMCE
- Department level NBA accreditation coordinator in 2003.
- Laboratory in charge
- College union staff advisor

Academic/ Research Achievements

1. Research projects/Research grants obtained with year, agency and outlay.

SI No	Title of project	Funding agency	Year	Amount (lakhs)
1	Development of energy efficient thermal systems using nanofluids	AICTE	2012	14.5
2	Modernizing the Computing Facility for Post Graduate Students and Research Scholars	AICTE	2013	16

3	Modernization of Heat Transfer Laboratory	AICTE	2008	10
4	Modernization of Thermal Engineering Laboratory	AICTE	2003	7

2. Research papers both in conference and journals published.
- i) No. of Publications in SCI, Scopus indexed International Journals: **25**
 - ii) No. of Publications in SCI, Scopus indexed National Journals: **1**
 - iii) No. of Publications in International Symposium/ Meeting/
Conference: **20**
 - iv) No. of Publications in National Symposium/Conference: **2**
 - v) Total publications: **45**
 - v) Total number of citations: **667**
 - vi) h-index: **15**

Serving as Reviewer

1. Energy Conversion and Management, Elsevier
2. International Journal of Refrigeration, Elsevier
3. Journal of Molecular Liquids, Elsevier
4. Journal of Cleaner Production, Elsevier
5. Powder Technology, Elsevier
6. International Journal of Engineering Science & Technology,
7. National/International conference proceedings of international journals

3. Number of Ph.Ds successfully supervised

Sl No	Title of thesis	University	Name of student	Status
1	Investigations on the heat transfer characteristics of nanofluids	University of Kerala	T.S.Krishnakumar	Degree awarded
2	Investigations on heat transfer and fluid flow of jet impingement cooling for high power electronics	University of Kerala	Leena.R	Degree awarded
3	Investigations on heat transfer and fluid flow in a film cooled rocket thrust chamber	University of Kerala	Arun M	Degree awarded
4	Effect of Nanoparticles on Flow Boiling Heat Transfer	University of Kerala	Sanukrishna S.S.	Degree awarded

	Characteristics of Refrigerants and Anti-Wear Properties of Lubricants			
5	Numerical and experimental investigations on heat and fluid flow characteristics in helical coil heat exchangers	University of Kerala	Sheeba.A	Degree awarded
6	Investigation on the Fine Tuning of Different Performance Parameters of Superconductors.	APJ Abdul Kalam Kerala Technological University	Ashok KB.	Preparation of thesis

4. Consultancy projects handled:

Sl No	Title of project	Funding agency	Year	Amount (lakhs)
1	Analysis on film cooling in liquid propellant rocket engine including the effect of chemical reaction	Liquid Propulsion System Centre(LPSC) Indian Space Research Organization(ISRO)	2009	9.35
2	Numerical studies Regenerative cooling of a semi cryogenic rocket engine	Liquid Propulsion System Centre(LPSC) Indian Space Research Organization(ISRO)	2012	9.48
3	Numerical studies on the pre-burner of a semicryogenic rocket engine	Liquid Propulsion System Centre(LPSC) Indian Space Research Organization(ISRO)	2016	6.38

The above consultancy projects are related to the development of a new engine to be used in Reusable Launch Vehicle(RLV) of ISRO. The propellants used are kerosene and liquid oxygen. The research team from TKM College of Engineering consisted of Myself, research scholars and postgraduate students. The performance of the team was well appreciated by the LPSC authorities.

5. No. of International / National Symposium/ Conference organized:

1. **Organising Secretary and editor** conference proceedings, International Conference on Aerospace and Mechanical Engineering(ICAME'15), TKM College of Engineering, Kollam-5, December 14-16,2015, sponsored by VSSC and TEQIP-II
2. **Convener**, National conference for Mechanical Engineering students in the years 2002, and 2005

3. **Editor**, Conference proceedings published by Institute of Physics: International Conference on Aerospace and Mechanical Engineering(ICAME'15), TKM College of Engineering, Kollam-5, December 14-16,2015, sponsored by VSSC and TEQIP-II

Personal Achievements

1. Awards/ Distinctions/ Honours:

- Best project award instituted by TCS for B.Tech students(under my guidance)
- Best paper award in the international conference.
- Out standing contribution in reviewing: International Journal of Refrigeration
- Out standing contribution in reviewing: Energy conversion and Management
- During my tenure as HOD, the department received the best department award of the institution(Research and Projects)
- Certificate of appreciation from TKM College of Engineering Management
- International Travel grant/registration fee received from AICTE/DST

2. Countries/Universities visited

Sl. No.	Country	Conference University/organisation	Year	Contribution/ outcome
1.	Atlanta, Georgia, United state of America	48 th AIAA joint propulsion conference and exhibit, July 29- August 1,	2012	Presented a paper
2.	Netherlands	University of Twente	2014	<ul style="list-style-type: none"> • Joint research and publications • Internship to students • Four M.Tech students have already undergone internship(with scholarship) at University of Twente
3	Germany	Karlsruhe Institute of Technology	2014	<ul style="list-style-type: none"> • Joint research and publications • Internship to students • One M.Tech student has already undergone internship(with scholarship) at Karlsruhe Institute of Technology

4	Switzerland	CERN	2014	<ul style="list-style-type: none"> • Internship to students • Expert talks
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3. Text books / Book chapters published:

1. Laboratory manual, Thermal Engineering laboratory
2. Editor, International Conference proceedings, McGraw-Hill publishers
3. Editor, International Conference proceedings, Institute of Physics

4. Membership of Professional bodies and involvement in their activities.

N o.	Name of Professional Body	Involvement
1	Indian Society for Heat and Mass Transfer (ISHMT)	President, ISHMT- Regional Chapter, Thiruvanthapuram Presented papers in conferences organised by ISHMT Formerly vice president
2	American Institute of Aeronautics and Astronautics (AIAA)	Member Presented a paper in the 48 th AIAA JPC Conference, Atlanta, Georgia, USA
3	Indian Society for Technical Education (ISTE)	Member and involved activities of ISTE Participated in ISTE National and state level meetings Organised 3 Faculty development programmes supported by ISTE
4	ISME	Member and presented papers in the conferences organized by ISME
5	Energy conservation society	Member, involved in the activities at the college level

Selected publications in SCI indexed International Journals

Sl No.	Title	Journal
1	Sheeba, R. Akhil, M. Jose Prakash Heat transfer and flow characteristics of a conical coil heat exchanger doi.org/10.1016/j.ijrefrig.2019.10.006	International Journal of Refrigeration, Elsevier Vol. 110, 2020,268-276 Impact factor:3.328
	S. S. Sanukrishna, Muhammed Shafi, Maneesh Murukan,	Powder Technology,

2	M. Jose Prakash Effect of SiO ₂ nanoparticles on the heat transfer characteristics of refrigerant and tribological behaviour of lubricant doi.org/10.1016/j.powtec.2019.07.083	Elsevier; Vol. 356, 2019,39 - 49 Impact factor:3.331
3	<i>Sheeba, C. M. Abhijith, M. Jose Prakash</i> Experimental and Numerical Investigations on the Heat Transfer and Flow Characteristics of a Helical Coil Heat Exchanger doi.org/10.1016/j.ijrefrig.2018.12.002	International Journal of Refrigeration, Elsevier Vol. 99, 2019,490-497 Impact factor:3.328
4	<i>Anvar et.al...Jose Prakash M</i> Bending of CORC® cables and wires: finite element parametric study and experimental validation https://doi.org/10.1088/1361-6668/aadcb9	Superconductor Science and Technology, IOP Science Impact factor: 2.7,2019
5	<i>Krishnakumar T.S., Viswanath S.P., Sajin Mathew Varghese, Jose Prakash M</i> Experimental studies on thermal and rheological properties of Al ₂ O ₃ -ethylene glycol doi.org/10.1016/j.ijrefrig.2018.03.008	International Journal of Refrigeration,Elsevier Vol. 89, 2018,122-130 Impact factor:3.328
6	<i>S. S. Sanukrishna, S. Vishnu, M. Jose Prakash</i> Experimental investigation on thermal and rheological behaviour of PAG lubricant modified with SiO ₂ nanoparticles doi.org/10.1016/j.molliq.2018.04.066	Journal of Molecular Liquids, Elsevier Vol. 261, 2018, 411-422 Impact factor:4.513
7	<i>S. S. Sanukrishna, M. Jose Prakash</i> Experimental studies on thermal and rheological behaviour of TiO ₂ -PAG nanolubricant for refrigeration system doi.org/10.1016/j.ijrefrig.2017.11.014	International Journal of Refrigeration,Elsevier Vol.86, 2018, 356-372 Impact factor:3.328
8	<i>R Leena, G Syamkumar,.Jose Prakash M</i> Experimental and Numerical Analysis of Multiple Jets Impingement Cooling for High Power Electronics DOI: 10.1109/TCPMT.2017.2783629	IEEE Transactions on Components, Packaging and Manufacturing Technology Vol.8(2),2018,210-215 Impact factor:1.66
9	<i>S. S. Sanukrishna, Maneesh Murukan, Jose Prakash M.</i> An overview of experimental studies on nanorefrigerants: Recent research, development and applications doi.org/10.1016/j.ijrefrig.2018.04.006	International Journal of Refrigeration,Elsevier Vol. 88, 2018,552-577 Impact factor:3.328
10	<i>S. S. Sanukrishna, S. Vishnu, T. S. Krishnakumar, M. Jose Prakash</i> Effect of Oxide Nanoparticles on the Thermal, Rheological and Tribological Behaviours of Refrigerant Compressor Oil; An Experimental Investigation doi.org/10.1016/j.ijrefrig.2018.04.006	International Journal of Refrigeration, Elsevier Vol. 90, 2018, 32-45 Impact factor:3.328
11	<i>Sanukrishna S. S. Vishnu A. S., Jose Prakash M.</i> Nanorefrigerants for energy efficient refrigeration systems DOI 10.1007/s12206-017-0746-4	Journal of Mechanical Science and Technology, Springer 31 (8),2017, 3993-4001 Impact factor:1.182

12	<i>M. Arun, M. Jose Prakash</i> Heat transfer deterioration effects of cryogenic Methane in rocket engine cooling channels DOI: 10.5098/hmt.11.9	Frontiers in Heat and Mass Transfer , Vol. 1(9),2018
13	<i>Sanukrishna S S, Nabeel Ajmal, Jose Prakash M</i> Thermophysical and Heat transfer Characteristics of R134a-TiO ₂ Nanorefrigerant: A Numerical Investigation DOI: 10.1088/1742-6596/969/1/012015	Journal of Physics , 969 (2018) 012015,2018
14	<i>S. S. Sanukrishna, M. Jose Prakash</i> Thermal and rheological characteristics of refrigerant compressor oil with alumina nanoparticles—An experimental investigation doi.org/10.1016/j.powtec.2018.08.003	Powder Technology, Elsevier ; Vol. 339, 2018, Pages 119-129 Impact factor:3.331
15	<i>M. Arun, J. Akhil, K. Noufal, Robin Baby, Darshitha Babu, M. Jose Prakash</i> Effect of aspect ratio on supercritical heat transfer of cryogenic methane in rocket engine cooling channels DOI: 10.5098/hmt.8.23	Frontiers in Heat and Mass Transfer , Vol 8(23),2017
16	<i>R Leena, R.V Renjith. Jose Prakash M</i> Experimental and Numerical Investigations on Steady and Unsteady Jet Impingement Cooling for High-Power Electronics. DOI: 10.1109/TCPMT.2015.2420953	IEEE Transactions on Components, Packaging and Manufacturing Technology ,Vol.99, 1,2015,1461-1469 Impact factor:1.66
17	Subramani, M. Jose Prakash Experimental studies on a vapour compression system using nanorefrigerant	International Journal IJEST Multicraft, Vol.3(9), 2012, 95-102
18	Sanukrishna S.S, M. Jose Prakash Improving the effectiveness of a heat exchanger using nanofluids	IJEST Vol.6, 2011, 1247-1259
19	Leena R, M. Jose Prakash Characterization of adsorption compressor used in a charcoal – nitrogen adsorption cryocooler	Indian Journal of Cryogenics, Vol.34, No. 1-4,2009
20	Rajesh Baby, M. Jose Prakash Improving the performance of an active carbon–nitrogen adsorption cryocooler by thermal regeneration	Carbon, Elsevier Vol.43,2005,2338-2343 Impact factor:7.251
21	M. Jose Prakash , A Mattern, K Srinivasan Adsorption parameters of activated charcoal from desorption studies	Carbon, Elsevier Vol.38,2000,1163-1168 Impact factor:7.251
22	M. Jose Prakash , Madhu Prasad, K. Srinivasan Modeling of thermal conductivity of charcoal–nitrogen adsorption beds	Carbon, Elsevier Vol.38,2000,907-913 Impact factor:7.251
23	M. Jose Prakash , Madhu Prasad, K Srinivasan Development of a laboratory model of activated charcoal–nitrogen adsorption cryocooler	Cryogenics, Elsevier Vol.40,2000,481-488 Impact factor:1.5

Participation and presentation of papers in conferences since 2012

Sl. No.	Title of the programme	Institution	Period
1	International Conference on Aerospace and Mechanical Engineering(ICAME'17) December 17-19,2018 Presented papers Editor, proceedings	TKM College of Engineering, Kollam	December 14-16,2015
2.	5 th International Conference on Computational Methods For Thermal Problems,ThermaComp2018 Presented paper Session chair	Indian Institute of Science Bangalore	July 9-11, 2018
3.	ASET-2018 National conference on Future Directions in Propulsion Organising committee member Presented paper	Liquid Propulsion Centre, ISRO, Thiruvananthapuram	May 11-12, 2018,
4.	One day colloquium on advanced heat and mass transfer Participant	Liquid Propulsion Centre, ISRO ISHMT regional chapter	April 17, 2018
5.	Two day workshop on Computational Fluid Dynamics(CFD) Resource person	UKF College of Engineering, Kollam	June 22-23, 2018
6.	National Conference On Computational Heat Transfer, Fluid flow and Energy Systems Invited speaker	SCT College of Engineering, Thiruvanan-thapuram	January 19-20, 2018
7.	7 th Asian Joint Workshop On Thermophysics And Fluid Science, AJWTF7 National advisory committee member	College of Engineering, Thiruvananthapuram	November 21-24 2018
8.	2 nd International ISHMT-ASFTE Heat and Mass transfer conference, December presented paper	BITS-Pilani, Hyderabad campus	December 27-30,2017
9.	1 st National Aerospace Propulsion Conference Presented paper	IIT Kanpur, Kanpur	March 15-17, 2017,
10.	Global colloquium on recent advancement and effectual research in engineering science and technology. Session chair	St. Joseph college of engineering and technology, Pala	April 22-23,2016

11.	National seminar on recent advances in nanotechnology Session chair	Institution of Engineers (India)	October 16-17,2015
12.	International Conference on Aerospace and Mechanical Engineering(ICAME'15) December 14-16,2015 Presented papers Editor, proceedings Organizing secretary	TKM College of Engineering, Kollam	December 14-16,2015
13.	Academic excellence through research Participant	Government engineering college, Barton hill	January 31,2015
14.	Advances in nanotechnology Participant	TKM College of Engineering, Kollam	March 13-128,2015
15.	15 th National conference on technological trends, Session chair Reviewer	College of Engineering, Thiruvananthapuram	August 22-23,2014
16.	2 nd International conference on materials, mechanics and management Presented papers	College of Engineering, Thiruvananthapuram	December 17-19,2014
17.	International conference on energy and environment Presented papers	Rajiv Gandhi Institute of Technology, Kottayam	December 12-14,2013
18.	Recent trends in nanotechnology Participant	TKM College of Engineering, Kollam	October 28- November 01,2013
19.	Finite element method and its applications in engineering Participant	TKM College of Engineering, Kollam	October 17-22,2013
20.	AIAA Asia Australia regional student conference Reviewer	Australian National University Australia	December 27-19,2013
21.	27 th National convention of Aerospace Engineers Presented paper	University of petroleum and energy studies, Dehradun, Uttarkhand	November 9-10,2013
22.	FDP on trends and advancements in aerospace engineering Resource person	SCT College of Engineering Thiruvananthapuram	October 17-30,2013

23.	Timeless leadership Participant	IIM, Kozhikode	November 27-29,2013
24.	48 th AIAA joint propulsion conference and exhibit. Presented a paper	AIAA Atlanta, Georgia	July 29- August 1, 2012