
Curriculum Vitae



Name : **Prof. (Dr.) Jayaraju Madhavan**

Address

Official : **PRINCIPAL, College of Engineering Munnar,
County Hills (P.O), Munnar Pin: 685612**

Residence : **Thamburu, Mundayil, Varkala (P.O), Pin- 695141,
Thiruvananthapuram, Kerals, India.**

Phone : **+91 470 2604334 (R) , +914865 230606/232989 (O)**

Mobile : **+91 9447109478 (M)**

E-mail : **jayarajum@gmail.com
jayarajumadhavan@yahoo.in**

Personal Details:Nationality : **Indian****Educational Qualifications***(In chronological order commencing from Bachelor's Degree)*

Sl. No	Exam Passed	University/ Institution	Year of Passing	Main Subjects	Division or Equivalent
1	B.Tech	University of Kerala	1985	EEE	First Rank with Distinction
2	ME	Indian Institute of Science, Bangalore	1994	EE	First Class with Gold Medal for Best M.TECH Project
3	Ph.D	University of Kerala	2005	EE	Sree Chithra Prize for Best Research Publication

Administrative Experience:

- Principal, MES Engineering College, Chathannoor (P.O), Kollam *(June 2012- January 2013, July 2014- continuing)*
- Director, ANERT, Dept of Power, Govt. of Kerala *(January 2013- June 2014)*

Teaching Experience: More than 35 years in Engineering Education and Research

Dept of Electrical & Electronics Engg, T.K.M College of Engineering, Kollam

Professor *(January 2009 – May 2012)*

Associate Professor *(January 2006 –Dec.2008)*

Lecturer (Selection Grade) *(May 2000 –Dec. 2005)*

Lecturer (Senior Grade) *(May1995– Dec. 2000)*

Lecturer *(November 1987– May1995)*

Research Experience

- Ph.D Thesis: “*Performance of High Voltage Insulation systems with Non- Standard Switching Surges*” done at Indian Institute of Science, Bangalore during 1998- 2004.
- Continuing research as an approved research supervisor under the faculty of Engineering & Technology in the
 1. University of Kerala.
 2. APJ Abdulkalam Technological University, Kerala.
 3. University of Petroleum & Energy studies, Dehradun.
 4. Hindustan University, Chennai.

Research works of eleven scholars are progressing.

Responsibilities at University Level

- **Member Faculty** of Engineering & Technology, University of Kerala.
- **Member Board of Studies**, Engineering & Technology, University of Kerala.
- **Member Board of Studies**, Engineering & Technology, Calicut University.
- **Chief Superintendent** University Examinations, University of Kerala.
- **Chief Examiner** B.Tech & M.Tech University Examinations.
- **Question Paper Setter** for B.Tech & M.Tech Examinations.

Membership of Professional Bodies

- Institution of Electrical and Electronics Engineers (IEEE), USA
- Fellow, Institution of Engineers (India)
- Fellow, Institution of Technical Arbitrator

- Fellow, Institution of Valuers
- Fellow, Indian Society of Lighting Engineers.
- Indian Society for Technical Education
- Power Engineers Society (India)
- System Society of India
- Instrument Society of India
- Energy Conservation Society of India
- Computer Society of India
- Chartered Engineer

Books Authored

1. **“Electrical Engineering Material Science”**, *Phasor Books, Kollam, 2005*
2. **“Superconductivity and Applications”**, *Phasor Books, Kollam, 2011*
3. **“Energy conservation and Management”** (*In Press*)

Professional Accreditations

- i) Energy Consultant
- ii) Consultant and Trainer for Handling Training Programmes in India and other parts of the World, in the field of Electrical Safety (OSHA, NFPA & EN Standards etc), Energy Conservation and Management, Renewable Energy Sources, Environmental Protection, Sustainable development, and Waste Management.

Proficiency awards from various bodies for excellent performances

1	Shishagourav Puraskar -2016	CERG, New Delhi
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2	TKM Alumni Achievement Award - 2014	TKM Alumni Association, Kerala
3	Regional Excellency Award,2013	Lions Club International, Kerala
4	R. Prakasam Memorial Endowment Award, 2013	Sree Krishna Natya Academy, Kerala
5	Rajiv Gandhi Shiromany Award, 2012	New Delhi
6	LEADING ENGINEERS of the WORLD 2007	IBC, Cambridge, England
7	SRI CHITHRA PRIZE 2006	University of Kerala
8	TKM Alumni Association Award 1986	TKMCE, Kollam
9	GOLD MEDAL for Best M.Tech Project , 1994	Indian Institute of Science, India
10	TKM Over all achievements in Science &Technology, 2006	Staff Club, T. K. M.C.E, Kollam

International Achievements

- i) Biography is included in the 23rd edition of *MARQUIS Who's Who in the World*, the most comprehensive biographical directory of outstanding men and women in a wide range of professions and geographic locations.
- ii) Biography is also listed in the *First edition (2006) of Who's Who in Asia and in the 2007 edition Who's Who in Science and Engineering*.
- iii) *VISITING PROFESSOR in the School of Electrical Systems, University Malaysia Perlis, Malaysia.*

Research Publications

Technical Paper Published (International)

- i) M.Jayaraju, B R Prabhakar, "Generation of uni-directional and bi-directional Oscillatory switching impulse voltage", Proc., 9th International Symposium on high voltage engineering, Vol 4, 4505-08, Austria 1995.
- ii) M.Jayaraju, B R Prabhakar , "Breakdown characteristics of rod-plane gap in air with oscillatory switching impulse voltages", Proc., 9th International symposium on high voltage engineering, vol. 2, pp. 2506-09., Austria, 1995.

- iii) M.Jayaraju, B R Prabhakar, "*Oscillatory Switching impulse voltage generator*", special issue, Instrument Society of India Journal, Vol 26, No.3, pp 189-192, 1996.
- iv) M.Jayaraju, B R Prabhakar , "*Dielectric strength of oil filled transformer insulation against oscillatory impulse voltage*", special issue, Instrument Society of India Journal, vol 26, No.3, pp 207-210, 1996.
- v) M.Jayaraju, B R Prabhakar, "*Dielectric strength of oil filled transformer oil under oscillatory switching impulse voltages*", Proc., International conference on EHV Technology, PP 56-59, India, 1996.
- vi) M.Jayaraju, B R Prabhakar, "*Modeling of impulse voltage generator using SIMULINK*", Proc. IEEE power engineering society winter meeting 2000, Westin Hotel, Raffles City Convention Centre, Singapore, 2000.
- vii) M.Jayaraju, B R Prabhakar, "*Breakdown characteristics of insulation Assembly under oscillatory switching impulse voltages*", Proc. International Conference on Communication Control and Signal Processing pp 327-330, Bangalore 2000.
- viii) M.Jayaraju, B R Prabhakar, "*Oscillatory switching impulse flashover characteristics of insulator strings under normal weather conditions*", Electric power components and systems Journal, 31: 171-188, 2003.
- ix) M.Jayaraju ,I.Daut, "*Impulse voltage generator modeling using MATLAB*", World Journal of Modeling and simulation, Vol. 4 (2008) No.1 pp 57 - 63 February
- x) R.sheeba , M.Jayaraju , K. Sundareswaran, "Identification of Optimal location of SVC through Biologically Inspired Soft Computing Techniques" IEEE, TKM College of Engg, Kollam, Kerala INDIA, December 2011.
- xi) R.sheeba, M.Jayaraju, K. Sundareswaran, "*Simulation of Impulse Voltage Generator and Impulse Testing of Insulator using MATLAB Simulink*", World Journal of Modeling and Simulation, Vol. 8 (2012) No. 4, pp. 302-309 -- 81.

- xii) R.sheeba,M.Jayaraju, K.Sundareswaran, “*Bees Colony Intelligence in Optimization - An application to PSS Design*”, International Review on Modeling and Simulation (IREMOS), October 2012.
- xiii) R.sheeba , M.Jayaraju , K. Sundareswaran, “*Design of PSS Using BEES Colony Intelligence*”, IJARET, Volume 4, Issue 5, July – August 2013, pp. 24-34
- xiv) R.sheeba, M.Jayaraju, K. Sundareswaran, “*Performance Enhancement of PSS through Colony of Foraging Ants*”, Electric Power Components and Systems, Taylor and Francis, accepted for publication in online on June 2014.
- xv) Beena V, M.Jayaraju “*Fuzzy logic based Maximum power point Tracker for a PV system*” IEEE international conference,-EPSCICON 2012.
- xvi) Kamaladevi, M.Jayaraju,”*Performance analysis of PV fed single phase Z-source inverter*”, International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering, Vol. 2, Issue 2, February 2014 ,pp 1069-1075.
- xvii) Kamaladevi, M.Jayaraju, “*Modeling and Analysis of MPPT Techniques for Grid Connected PV Systems*”, International Journal of Innovative ,Research in Electrical, Electronics, Instrumentation and Control Engineering Vol. 2, Issue 2, February 2014, pp 1031-1037

- xviii) Aparna A Nair,.S.K Sudheer, Dr. M Jayaraju, “*Analysis of Optical Characteristics for Photonic Crystal Fiber at Small Core Diameters*” ,International Journal of Engineering and Advanced Technology (IJEAT), Vol.3, Issue-4, pp. 377-380, April2014.
- xix) S. Zaheer, Jayaraju and T. Gulrez, “*A Trajectory Learner for Sonar based LEGO NXT Differential Drive Robot*”, Proc. International Electrical Engineering congress- iEECON-2014, Pattaya, Thailand, March, 2014.
- xx) Reshma, M.Jayaraju, ”*Indian Sign Language Recognition System*”, Proc. International Conference on Signal & Speech Processing- ICSSP-14, Kollam, Elsevier Science and Technology Publications, pp 346-350, August 2014.
- xxi) R.Sheeba, M. Jayaraju, K. Sundareswaran, “*Small-Signal Stability Enhancement of Multi-machine Systems Using PSO Tuned Power System Stabilizer*”, Proc. International Conference on Emerging Trends in Electrical Engineering- ICETREE-14, Kollam, Elsevier, pp 41-47, August 2014.
- xxii) Aparna A. Nair, S.K. Sudheer, M.Jayaraju, “*Optical Properties of Octagonal Photonic Crystal Fibre Under Varying Air Hole Size and Structure: A Study*”, Proc. International Conference on Signal & Speech Processing- ICSSP-14, Kollam, Elsevier Science and Technology Publications, pp 247-251, August 2014.

Technical Paper Published (National)

- i) M.Jayaraju, B R Prabhakar," *HV and EHV bushing Design, selection, quality control, maintenance and diagnostic testing With case studies*", Proc. National Seminar on Transmission Technology, PP 39-56, Trivandrum, 1995.
- ii) M.Jayaraju, B R Prabhakar, "*Testing of Transformer Insulation against oscillatory impulse voltages*", Proc. National seminar on Modern trends in power Engineering and development, PP 145-152, Trivandrum, 1996.
- iii) M.Jayaraju, B R Prabhakar, "*Measurement of parasitic capacitance using a scale model of an impulse generator*", Proc. 22nd National system conference, pp 295-299, Calicut, 1998.
- iv) “M.Jayaraju, B R Prabhakar,”*Breakdown characteristics of non-uniform gaps with oscillatory switching impulse voltages*”, Proc. 11th Kerala Science Congress, pp.400-403, 1999.

Professional Training Programs Attended

Sl.No.	Name of the course	Conducted by	Period
i)	<i>Biomedical Engineering</i>	<i>TKM College of Engg</i>	<i>May 1987</i>
ii)	<i>Thyristor Drives</i>	<i>Anna University, Madras.</i>	<i>Dec 1988</i>
iii)	<i>Design selection installation and maintenance aspects of electrical equipment for fertilizer and petrochemical industries</i>	<i>GSFC Training Institute, Baroda</i>	<i>May 1990</i>
iv)	<i>HVDC and EHVAC system</i>	<i>KREC Surathkal</i>	<i>Dec 1990</i>
v)	<i>Programming in C</i>	<i>College of Engineering, Trivandrum</i>	<i>May 1991</i>
vi)	<i>C, Unix and Unify</i>	<i>Thiyagarajar College of Engg. Madurai.</i>	<i>Jun 1991</i>
vii)	<i>Laboratory practice in Electronics</i>	<i>College of Engg., Trivandrum</i>	<i>Dec 1991</i>
viii)	<i>Application of Microprocessors and Computer to power system analysis, protection and control</i>	<i>KREC Surathkal</i>	<i>Dec 1992</i>
ix)	<i>Solid insulating materials for electrical application and their performance</i>	<i>KREC Surathkal</i>	<i>Dec 1994</i>
x)	<i>Recent advances in power electronics and its industrial application</i>	<i>KREC Surathkal</i>	<i>Mar 1990</i>
xi)	<i>Embedded controllers and applications</i>	<i>Indian Institute of Science, Bangalore,</i>	<i>Oct 1996</i>
xii)	<i>Analysis of failures of insulation systems</i>	<i>IIT, Madras</i>	<i>May 1998</i>
xiii)	<i>Recent advances in power electronics</i>	<i>Indian Institute of Science Bangalore</i>	<i>Aug 1998</i>
xiv)	<i>Power system modeling and simulation</i>	<i>Sir. MVIT, Bangalore</i>	<i>Sep 1999</i>
xv)	<i>Dynamic system simulation</i>	<i>Govt. College of Engg. Kannur</i>	<i>July 2000</i>

International Conference/Symposiums attended for presenting technical papers

	Name of conference/Symposium	Venue	Year
1.	The 7 th Asian Conference in Electrical Discharges	Xi' an Jiatong University, Xi' an, China.	Oct 1994
2.	The 9 th International Symposium on High voltage Engineering	Convention Centre, Grazer Congress, Austria, Europe.	Aug 1995
3.	International Conference on Instrumentation	JN Tata Auditorium, National Science, Seminar Complex, Bangalore.	Aug 1996

4.	International Conference of EHV Technology	Indian Institute of Science, Bangalore.	March 1999
5.	IEEE/PES 2000 Winter Meeting	Westin Hotel, Raffles City Convention Centre, Singapore.	Jan 2000
6.	International Conference on Communication Control and Signal Processing.	Hotel Ashok International, Bangalore.	Aug 2000
7	International Conference on Instrumentation(INCON-2004)	Pune Institute of Engineering and Technology , Pune	Dec. 2004
8	International Seminar on Non-Conventional Energy, Renewable, Energy Efficiency and Conservation.	Prithvi 2005: Global Eco Meet at Trivandrum	Feb. 2005

National Conference/Symposium Attended for Presenting Technical Papers

<i>Sl.No</i>	<i>Name of conference/Symposium</i>	<i>Venue</i>	<i>Year</i>
1.	18 th National Symposium on Instrumentation	SV University, Tirupati, India	Jan. 1994
2.	National Power Conference	Himachal Pradesh, India	Apr. 1995
3.	First National Seminar on Transmission Technology	Hotel South Park, Trivandrum	Oct. 1995
4.	Second National Seminar on Modern Trends in Power Engineering and Development	Hotel South Park, Trivandrum	Oct. 1996
5.	22 nd National System Conference	NIT, Calicut	Dec. 1998
6.	11 th Kerala Science Congress	CPCRI, Kasaragod.	Jan .1999
7.	9 th Swadeshi Science Congress	FMN College, Quilon.	Nov. 1999
8.	15 th National Convention of Electrical Engineers	Institution of Engineers Hall, Trivandrum.	Dec .1999
9.	4 th National Seminar on Modern Trends in Power Engineering and Development	Hotel South Park, Trivandrum.	Oct. 2000
10.	11 th National power systems conference	JN Tata Auditorium, National Science, Seminar Complex, Bangalore.	Dec. 2000
11	National Seminar on “Advanced lighting concepts Towards Energy conservation	Manipal Institute of Technology, Karnataka.	March 2001
12	National Seminar on “Strategies for comprehensive electricity development in India	Kollam, Kerala.	April 2001
13	6 th National Seminar on Modern Trends in Power Engineering and Development	Hotel South Park, Trivandrum.	Nov. 2004

14	National Work shop on Energy and Environment	S.N College, Kollam , Kerala .	Feb. 2005
15.	National Seminar on Disaster Management	Institution of Engineers Trivandrum	Nov. 2005
16	National symposium on Green Energy	TKM college of Engineering, Kollam	March 2008
17	Seminar on Graph –fuzzy theory-link and applications in the real world problems	SN College , Kollam	Sept.2008

Industrial and socio-economic development research and consultancy contribution relating to power sector

Consultancy Activities were undertaken in the following areas of

1. Design and testing of High Voltage Electrical Equipments
2. Design of Power systems and High Voltage Laboratories
3. Energy Conservation and Energy Management
4. Industrial Safety, especially in Electrical Systems
5. Energy Audit and Safety Audit

Current Positions

Member, Governing body (2014 onwards)	ANERT, Govt of Kerala
Member, Governing body (2012 onwards)	Energy Management Centre, Govt of Kerala
Member, Governing body (2012 onwards)	SCT College of Engg, Thiruvananthapuram
President (2012 -14)	Energy conservation society
Chairman (2012-14)	Institution of Engineers (India) ,Kollam Centre
State committee member (2006 onwards)	Institution of Engineers (India) ,Kerala state Centre
Reviewer (2007 onwards)	International and national Journals
National Executive Committee Member (2012-2014)	Instrument Society of India
Approval Research Guide (2009 onwards)	Various Universities in India

Positions Held in the Past

Faculty of Engg. & Technology (1997-2000)	University of Kerala
Board of studies Member (1997-2000)	University of Kerala
Curriculum Revision Committee (1997-2012)	University of Kerala
Board of studies Member (1997-1999)	Calicut University
Honorary Secretary (2010-2012)	Institution of Engineers (India) ,Kollam Centre
Vice- President (1997-2012)	Energy Conservation Society
Co- ordinator (2007-2011)	Industry Institute Interaction cell (IIIC), TKMCE
Section Managing Committee Member (1989-2000)	Indian Society for Technical Education, Kerala Section
National E C Member (2000-2003)	Instrument Society of India
Co-ordinator (2005)	Kerala Swadeshi Congress held at FMNC Kollam
Secretary (2007-2009)	Alumni Association, TKMCE
Co-ordinator (1997-2012)	Various National Seminars/ Workshops/ Symposiums by the, IEI,ECS, College etc.
Chief-Editor (2010-2011)	Potentia Magazine, TKMCE
Secretary (2009-2011)	Staff Club, TKMCE
Staff-Advisor (2003-2005)	TKM College of Engineering, Kollam

Foreign assignments

For presenting Technical papers in the international Seminars/Conferences conducted by IEEE, IEE, CIGRE ,also as visiting Faculty and conducting In- House Training programmes.

China, Austria, Bangkok, UK, Singapore, Malaysia, Abu Dhabi, Sultanate of Oman, Thailand, Germany, USA etc...

Educational Achievements

Having an excellent academic career, I have obtained my Ph.D Degree from the University of Kerala, India [A combined research effort with Indian Institute of Science, Bangalore, India] I was awarded Sree Chithra Prize for best research publication in India, for my Ph.D Thesis. For my ME Degree (from Indian Institute of Science, Bangalore, India) I was awarded Gold Medal for best M.Tech

Thesis/Project. I have passed B.Tech Degree from University of Kerala, India with First Rank and Distinction.

I was a Member of Faculty of Engg & Technology and Member Board of studies, University of Kerala (1997-2000) and Member Board of studies, Calicut University (1997-98). During the last ten years (from 2006 onwards) I am Member of the Kerala State committee of Institution of Engineers India (IEI). I was the President of Energy Conservation Society, India, (2011-2013) also Member of the Managing Committee (1989-2000) of Indian Society for Technical Education (ISTE), Member, National Council of Instrument Society of India. (2000-2003), and Honorary Secretary of Institution of Engineers [India] ,Kollam Centre (2010-2012). At present I am the Chairman of Institution of Engineers [India], Kollam Centre (from 2013 onwards).

Leadership Training

I was the coordinator of Industry-Institute Interaction Cell (IIIC) of TKM college of Egg, and in-charge of various students forum like Institution of Electrical and Electronics Engineers Inc. (IEEE), IEI and ISTE student chapters, Electrical Engg Association, Placement and Training Cell, National Service Scheme, Student Advisor, Advisor to College Union, Sports Council, etc. These forums gave me adequate opportunities for student leadership trainings and related programmes.

Social Sensitivity Training

As the Coordinator of the National Service Scheme, IEEE, IEI and ISTE student chapters etc., I have got plenty of opportunities to impart social sensitivity training to students. Also, since 1992 I was one of the active members of the Energy Conservation Society (ECS), a premier non-governmental voluntary organization committed to the cause of promoting Energy conservation, Environmental protection and Sustainable development in India, formed on July 8, 1992. The thrust areas of activities of ECS are:

- i) Non-formal energy and environment education at primary, secondary, and tertiary levels of education.
- ii) Information dissemination on energy, environment and sustainable development.
- iii) Training of technicians and engineers in the field of energy conservation.
- iv) Consultancy and advisory service to educational institutions, industries, commercial establishments, Governmental agencies etc on energy conservation and renewable energy development.

- v) Energy audit in public building, industrial, commercial establishments and other premises of major energy consumption.

Career development

As the in-charge of Placement and Training Cell, I have conducted a number of personality development programmes and campus interviews for the placement of students to various industrial establishments in India and abroad.

Industrial and field Training

As the part of curriculum, every semester our institution conducts industrial visits and training to different industries like Electrical & Electronics industries, generating stations, substations, various R&D and testing centers etc. all over India. I am the Coordinator and lead Faculty Member of the training programme; I have got plenty of opportunities to visit different industrial and educational establishments in India as part of Students training programmes.

Industry - education integration Programme

For many years I am the coordinator of the Industry Institute Interaction Cell (IIIC), and in that capacity I have conducted a number of Industry-Institute Linkage Programmes. Also as a resource person for education in industry integration programme, I have conducted a large number of industrial training programmes nationally and internationally.

Curriculum Development

I have played a significant role in revising the existing curriculum (in accordance with the latest development taking place in Science, Engineering and Technology) of Engineering and Technology in different universities in India and abroad.

Industrial consultancy (Electrical)

My Ph.D. research work was mainly focused in the field of High voltage power transmission and distribution system. Various results obtained from these studies have wide application in the power system field, especially in the Extra High Voltage (EHV) and Ultra High Voltage (UHV) transmission and in the insulation design of HV electrical equipments. Large numbers of consultancy works with various electrical power industries in India and abroad have already been completed and many are in progress based on my Ph.D research work.

Energy management consultancy to industry

To reduce the cost of production and carbon foot print Energy management approach is the chosen strategy in any area of economic activity. Therefore as a consultant in the area of Energy Management, I have conducted energy conservation promotional programmes in industries. I have also conducted Energy study, Energy audit, Production of visual and audio CD's, promotion of Energy efficient luminaries, Promotion of renewable energy equipment in industries etc.

Electrical safety training and awareness to utility workers and General public

I have conducted many awareness and training programmes to general public and utility workers with help of Municipal Corporations, Municipalities and Panchayats and different utility establishments. Also, I have developed safety handouts, and information booklets, for handling electrical equipments and electrical energy conservation for the benefit of general public and utility workers.

Energy conservation training to general public

To impart knowledge on energy conservation among general public, many awareness and training programmes were conducted. Usually this programme is conducted in different residential areas with the help of resident's association. Public meetings are conducted in the Municipal Corporations, Municipalities and Panchayats area. Energy Conservation Programmes were also conducted for employees of various Govt., Private and public utilities/ Organizations.

Organizing Energy conservation Clubs

On 05-12-1996 the first Energy Conservation Club, in India was started at Kollam district, Kerala, under Energy Conservation Society of India. In 31-03-1997 the Govt. of India approved the programme. Now with the support of various Governmental and non-Governmental agencies there are more than 2000 energy clubs are functioning all over India. These Clubs are functioning in Schools, Colleges, Polytechnic colleges, Industrial Training Institutes and various Professional Colleges in India. These Clubs organize various energy conservation awareness programmes throughout the academic year. I have played a major role in these programmes since it was started on 05-12-1996.

Industrial Energy Audit

A number of orientation programmes and workshops were conducted on Energy audit in small, medium and large scale industrial establishments. Energy auditing in buildings are essential to check and monitor the daily energy consumption pattern. So, now myself and my colleagues are conducting orientation workshops for various levels of industrial personnel and student community for conducting energy audit in their own industries/institutions.

Electrical safety and energy conservation training to utility Executives/Personnel

I am conducting regular electrical safety, energy conservation and renewable energy training programmes to utility executives and other personnel for the last 20 years, within India and other countries.

Energy conservation and electrical safety to house wife's/women

Awareness and training programmes are also been conducted among women and house wives about electrical safety, cooking gas, water and natural resource conservation.

I certify that the information given above is true, complete and correct to the best of my knowledge and belief.



VARKALA
01/08/2018

Dr. JAYARAJU MADHAVAN

