



Dr. K. K. Rajan

Dr. K. K. Rajan graduated in Electrical Engineering from National Institute of Technology, Calicut, IN 1980. He joined the 24th batch of Bhabha Atomic Research Centre (BARC) Training school in the year 1980 and successfully completed one year training in all areas of Nuclear Engineering. He was posted to Indira Gandhi Centre for Atomic Research (IGCAR) Kalpakkam in 1981 and was responsible for design, development and testing of critical Components of Fast Breeder Nuclear Reactors. He had made significant contribution to the commissioning and successful operation Fast Breeder Test Reactor at Kalpakkam.

He was responsible for the design, construction, commissioning and operation of major sodium and water test facilities along with testing of critical components of Prototype Fast Breeder Reactor (PFBR) at IGCAR. He has also contributed substantially during testing of PFBR instrumentation items. As Director, Fast Reactor Technology Group, he led different R & D activities for future FBRs. He was Co-convener of the taskforce responsible for the receipt and transfer of 1700 tonnes sodium required for PFBR to storage capacities. Considering his knowledge, experience and excellent coordination ability he was given the additional responsibility of Director, Engineering Services Group in IGCAR. He represented India in many international meetings related to Nuclear Energy such as

- IAEA theme meetings at Vienna, International Conference on Nuclear Engineering, ICON-17 at Brussels Belgium,
- technical collaboration review meeting with CEA at Cadarache France, Fast Reactor and Fuel Cycle Technology Conference (FR-13),
- Co-ordination committee meeting at IAEA, Vienna and International Technical Review Meeting of Fast Reactor Designs in Korea at Daejeon, Korea.

He is recipient of Excellence in Science, Engineering and Technology group achievement award in 2009, as leader for Design, Construction, Commissioning and Operation SADHANA Loop which was for the Demonstration of Natural Convection in SGDHR Circuit of PFBR. He was also a member of the team, which received the above award again for excellent team work in successfully accomplishing the activity titled Sodium Materials Testing Facility in IGCAR Kalpakkam in 2010.

Homi Bhabha National Institute (HBNI) Mumbai had awarded Ph.D. to him on his thesis "Compact Electromagnetic Flow Meters with Enhanced Sensitivity for Flow Measurement in Sodium Circuits". He was in the grade of **Distinguished Scientist** at the time of his retirement on superannuation, on 30th April 2016.

After retirement from service, Appointments Committee of the Cabinet (ACC) had initially appointed him as Independent Director of Nuclear Power Corporation of India Ltd for three years from January 2017. Based on his performance he was reappointed for another three year term, till January 2023. He is a member of various NPCIL Board Subcommittees and Chairman of the Board Subcommittee, empowered for monitoring the progress of all ongoing projects of NPCIL.

He was working in Viswajyothi College of Engineering and Technology, Muvattupuzha, since Ma 2016 as Professor, Department of EEE. Additionally, he was holding the responsibilities of

- Nodal officer, Innovation and Entrepreneurship Development Centre ,
- Chief Executive Officer Viswajyothi Incubation centre
- Dean, Industry Institute Interaction.
- And Focal point United nations Academic Impact, VJCET Chapter

He was the Principal Investigator of the Research project entitled "Development of Level Sensor for Lead Lithium Loop system", under Board of Research in Nuclear Sciences (BRNS) carried out at VJCET. Total amount sanctioned was 33.085 lakhs and the project was completed successfully in association with Institute for Plasma Research Ahmadabad.

As a part of International Industry institute interaction along with a team from VJCET he visited Hannover Messe Germany, European Universities, Industries and institutions and initiated international collaboration. He Initiated collaborative research with Bhabha Atomic Research Centre for shelf life extension pineapple fruit. He was the main coordinator of

- National Conference on Recent Trends in Power system technologies NCPRS 2016, organized on 22 and 23, June 2017,
- Nuclear Energy Awareness Seminar Organized on 30th September and 1st October 2016,
- BARC Outreach Programme on the theme Atomic Energy for Brighter Future at Viswajyothi College of Engineering and Technology, organized on 1st February 2018
- National conference on Emerging Trends In Power, Instrumentation Control And Computing Technologies(PICCT-2019) was conducted on 7th -9th August 2019.

All the above programmers were fully funded by BRNS and NPCIL. As part of Industry, Institute Interaction, he took initiative and signed MOU with 22 industries.

He is a member of

- Indian Nuclear Society,
- Instrument Society of India,
- The Indian Society for Technical Education (ISTE) and a Fellow of Institution of Engineers (India).

He has more than 95 publications in national and international journals and 129 national and international conference proceedings.

Dr K K Rajan is appointed as principal of Viswajothi College of Engineering and technology with effect from 16.06.2020.

Profile of Dr. K.K. Rajan

PERSONAL DETAILS

Full Name	Kavumchira Kumaran Rajan
Name	K K Rajan
Fathers Name	K A Kumaran
Date of birth	20.04.1956
Nationality	Indian
Place of birth	Arakuzha Village, Muvattupuzha Taluk, Ernakulum dist, Kerala
Language proficiency	Malayalam, English, Hindi, Tamil
Address for communication	Perumballoor P O, Muvattupuzha, Ernakulum Dist, Kerala, PIN -6886673.
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EDUCATION

Qualification	University/ Institution	Month and Year	Percentage/ class
B Sc (Engg), Electrical Engg. Branch	National Institute of Technology, Calicut. Calicut University, 1980	May 1980	72%, First class, Honours
24th Batch of BARC Training school. (One year Theoretical Orientation Course in Nuclear Technology)	Bhabha Atomic Research Centre, Mumbai, 1981	August, 1981	73%,
Ph D, Topic: Compact Electromagnetic Flow Meters with Enhanced Sensitivity for	Homi Bhabha National institute, Mumbai, April, 2015	April, 2015	-----

Flow Measurement in Sodium Circuits			
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EXPERIENCE

Sl. No.	Period	Organization / Institution	Position Held
1	35	Indira Gandhi Centre for Atomic Research Kalpakkam, Department of Atomic Energy, Government of India	Distinguished Scientist and Group Director
2	4 Years 2 months	Viswajyothi College of Engineering and Technology	Dean Industry Institute Interaction Cell and Professor EEE
3	4 months	Viswajyothi College of Engineering and Technology	Viswajyothi College of Engineering and Technology

PRESENT POSITIONS

Sl. No.	Period	Organization / Institution	Position Held
1	Jan 2017 to till date	Nuclear Power Corporation of India (NPCIL), Mumbai, Department of Atomic Energy, Government of India	Independent Director and member Board of Directors
2	June 2020 to till date	Viswajyothi College of Engineering and Technology	Principal

RESPONSIBILITIES AT THE TIME OF RETIREMENT FROM DAE

Name of institution in Which last worked	Indira Gandhi Centre for Atomic research, Kalpakkam Department of Atomic energy Govt of India
Date of Joining	01.08.1981
Date of retirement	30.04.2016
Number of years of service	35
Grade at the time of retirement	Distinguished Scientist

Basic pay	Rs. 80,000/-
Total emoluments	Rs. 1,80,000+ 30 % incentives
Position at the time of retirement	Director, Fast Reactor technology Group
Nature of job	Research and Development in the area of Fast Reactor Technology which includes design development of electromagnetic devices, instrumentation system, Fast reactor control drive mechanisms and fuel handling machines.

PROFESSIONAL PROFILE

- Design, development, manufacture and testing of Electromagnetic devices for liquid metal applications
- Design, analysis, development and testing of sensors based on electromagnetic principle for in sodium applications
- Design of innovative Electrical heating system components for sodium facilities
- Specification, procurement, installation and commissioning of conventional Electrical system for various facilities in IGCAR
- Expertise in sodium cooled Fast Breeder Reactor technology
- Management and coordination of research projects of Department of Atomic Energy
- Leading a large team of multi disciplinary Engineers and work force
- Faculty member of Homi Bhabha National Institute towards Human Resource Development

POSITIONS HELD

Position	Period
Engineer -in-charge Electromagnetic flow meter calibration	1981-1985
Group leader, Rig Services Section	1985-1996
Head, Rig Operations Section	1996-2016
Head, Sodium Facilities Division	2006-2010
Associate Director, Sodium Technology Group	2010-2011
Director, Engineering Services Group	2013-2015
Chairman -Technicians, Selection Committee	1993-2009
Chairman, Scientific officer (Engineering) Selection Committee	2009-2014
Director , Fast Reactor Technology Group	2011-till retirement
Member, IGCAR Council	2011-till retirement
Member , IGCAR Director's Advisory Committee	2010-till retirement
Member, IGCAR Scientific Committee	2008-till retirement
Member, IGCAR Safety Review Committee	2011-till retirement

Member, Department of Atomic energy Specialist Group on Advance Reactor Technology Projects Review	2008-till retirement
Co- Chairman IGCAR Stores and Purchase committee	2011-till retirement
Co -chairman, IGCAR Tender committee	2013-till retirement
Chairman, IGCAR staff council	2013-till retirement
Chairman, Price Negotiation Committee of IGCAR Tenders	2013-till retirement
Chairman, Time Extension Committee for IGCAR work orders	2013-till retirement

MAJOR CONTRIBUTIONS AND ACHIEVEMENTS

Electromagnetic devices

- Sodium Calibration of Electro magnetic type flow meters of Fast Breeder Test Reactor (FBTR).
- Development of Permanent magnet flow meters for sodium flow measurement in fast breeder reactor sodium circuits.
- The innovative design of magnetic circuit for these flow meters using Alnico-V permanent magnet blocks
- 75 Alnico V based flow meters required for PFBR was designed, developed manufactured calibrated and delivered for installation.
- Compact permanent magnet flow meters with samarium cobalt magnet assembly is designed, analysed, manufactured and tested in an existing sodium loop and the feasibility is established.
- Side wall flow meter, with Alnico-V magnet block and two pairs of electrodes has been designed, analyzed and manufactured. This flow meter has been modelled using COMSOL software and sensitivity is predicted at different flow rates and temperatures.
- Design, development, manufacturing and testing of different type of hermetically sealed electro magnetic pumps were carried out.

Sensors based on Electromagnetic principle

- Development of special Electro magnetic sensors such as mutual inductance type continuous and discontinuous sodium level sensors.
- Development of Eddy current type flow meters for in core flow measurement for FBRs.
- Development and deployment of mutual inductance and conductive type sodium leak detectors.
- Development, testing and supply of ultrasonic scanner for under sodium viewing in FBRs.

Electrical heating system components for sodium facilities

- Development, testing and qualification of expanded cold region type surface heaters for heating pipe lines and components of FBRs and immersion heaters for direct liquid sodium as per IEEE standard was carried out with the support of Indian industry.

- Development and testing of 20 kW capacity, high power density immersion U heaters.
- Indigenisation of high power density rod type sodium immersion heaters.
- Solid state relay based heater control system was designed and integrated to a heater control panel. Many such panels were manufactured and deployed in sodium system preheating in reactor and experimental facilities.

Conventional Electrical system

- Involved in the distribution of different class of power supply for nuclear facilities in IGCAR.
- Specification, procurement, installation and commissioning of various power system components and equipments such as transformers, MV panels, LT panels, HV motors, LV motors, speed drives, Diesel generator sets, EOT cranes, UPS units, batter banks, cables etc., were carried out.
- Many up gradation activities were initiated and completed which has increased the power supply reliability of the centre.

High Temperature Experimental Sodium Facilities

- Design, construction, commissioning of Large Component Test Rig for testing the full scale components of PFBR such as shut down mechanisms and fuel handling machines of PFBR.
- Design, construction, commissioning and operation of sodium system, high pressure steam water system and the oil fired sodium heater of PFBR steam generator test facility (SGTF).
- Played a key role in the sustained operation of SGTF and in conducting the heat transfer performance test and endurance test of model SG at rated temperature and pressure conditions.
- As the convener of the task force, involved in the design, fabrication, erection and commissioning of SADHANA loop, the 1/22 model loop of PFBR Safety Grade Decay Heat Removal system, (SGDHR). This facility was commissioned and operated for more than 3000 hours and the feasibility of passive decay heat removal was experimentally demonstrated.
- A first of its kind facility to study the effect of cold thermal shock on electro magnet (EM) of the PFBR, DSRDM was commissioned to simulate cold thermal shock experienced by the EM of the DSRDM during a reactor SCRAM and more than 1000 shock cycles were completed.

Management and Coordination of Research Projects

- XIth and XIIth five year plan projects of fast reactor technology group amounting to 200 cores was coordinated and executed.

Leading a large team of multi disciplinary engineers

- Heading Fast Reactor Technology group for different R & D activities related to Sodium cooled fast bred reactor.
- Around 100 engineers belonging to different disciplines and 150 technical staff members are in the group

Faculty member of Homi Bhabha National Institute

- Taught different subjects to graduate engineering trainees and research scholars in HBNI from 2007 to 2016.

NATIONAL AND INTERNATIONAL COLLABORATIVE PROJECTS

- International Collaboration between CEA France and IGCAR on fast reactor safety.
- Collaborative projects are taken up with leading academic institutions such as IIT-Chennai, IISc., Bangalore, Institute of Chemical Technology- Mumbai, Fluid Control Research Institute- Palakkad and many other academic institutions in the country.
- International Conference on Nuclear Engineering-17 (ICONE-17), at Brussels, Belgium.
- Specialist Meeting on sodium cleaning and decontamination organised by International Atomic energy Agency (IAEA) at Cadarache, France.
- Fast Reactor and Fuel Cycle Technology Conference (FR-13), Co-ordination committee meeting at IAEA, Vienna.
- International Technical Review Meeting of Fast Reactor Designs in Korea at Daejeon, Korea.

ACHIEVEMENTS IN VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY

S. No.	Description	Year	Particulars
1	• A research project on “Development of Level Sensor For Lead Lithium Loop System” was obtained from Board of Research in Nuclear Sciences(BRNS), Department of Atomic Energy, Government of India	2017 to 2017	Research project worth Rs 34 lakhs sanctioned in August 2017, Research Project Work is in progress in collaboration with Institute for Plasma Research, Ahmadabad
2.	• Another research project titled “Development of Lead - Lithium to Helium Heat Exchanger and Circulation Type Electrical heater for Heat exchanger Test Facility (Phase-1)” was formulated, got clearance from Institute for Plasma Research, Ahmadabad and submitted to BRNS for final review.	2018	As co PI the Rs.30 lakhs worth Research project proposal formulated and submitted to BRNS

3.	• Industry Institute Interaction Cell started functioning effectively and MOU signed with more than 22 Industries	2016-2018	MOU signed and interaction initiated with 22 industries and many others
4.	• Innovation and Entrepreneurship Development Centre (IEDC) activities initiated. More than 100 project ideas were formulated by students and participated in the all Kerala Idea contest	2016-2018	Around 15 ideas were selected for the final round and they are under evaluation
5.	• International Industry Institute Interaction cell formed. As a member of a team visited Hannover messe Germany, European Universities, Industries and institutions and initiated international collaboration.	2018	International collaborations visits, etc are planned.
6.	• Initiated collaborative research with Bhabha Atomic Research Centre for shelf life if extension pineapple fruit.	2017	Discussion meet with merchants famers and BARC Scientists were organized Project for shelf life extension of pineapple fruit is in progress at BARC and is being followed up
7.	• United Nations Academic Impact (UNAI) VJCET chapter formed with self as focal point	2017	Effectively functioning in the last one year

VISWAJYOTHI COLLEGE OF ENGINEERING ACTIVITIES

List of subjects handled	<ul style="list-style-type: none"> • Industrial instrumentation, • Power Generation and Distribution , • Measurement and measuring instruments, • Electrical Machine Design • Electrical Machines lab,
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Academic achievements	<ul style="list-style-type: none"> • Excellent Result In University Examinations for the subjects handled • Excellent feed back from students for all the subjects handled
List of additional responsibility handled	<ul style="list-style-type: none"> • Independent Director and member Board of Directors of Nuclear Power Cooperation of India Ltd. (NPCIL) • Chairman NPCIL Board sub committee for monitoring progress of ongoing projects • Member NPCIL Board Audit sub committee • Member NPCIL Board Subcommittee for Nomination and Remuneration • Chairman of NPCIL committee for Project
Details of Training undergone	<ul style="list-style-type: none"> • Two days Energy Conservation Building Code for Electrical Engineers, a training organized by Training and Research Centre, Moolamattom from 3rd and 4th May 2017
FDP Organized	<ul style="list-style-type: none"> • Application of Power Electronics in Modern Power Systems an FDP organized by EEE department VJCET., Vazhakulam,, 3rd – 7th January, 2017 . • Advancements in Electrical Machines and Industrial Automation , June 25 to 30, 2018, at VJCET Vazhakulam
Involvement in R&D activity	<ul style="list-style-type: none"> • A Research project titled Development of level sensor of lead lithium loop system sanctioned by Board of Research in nuclear science of Department of Atomic energy for 2 years at the project cost of Rs. 34 lakhs with self as Principle investigator • As Co –Principle Investigator a research project titled “Development of Lead - Lithium to Helium Heat Exchanger and Circulation Type Electrical heater for Heat exchanger Test Facility (Phase-1) and costing Rs. 30 lakhs was formulated and preliminary approval obtained from Institute for Plasma Research Ahamadabd
Funds raised	<ul style="list-style-type: none"> • Rs. 34 lakhs received as BRNS project fund
Additional courses organized	<ul style="list-style-type: none"> • IIRS - ISRO Course on remote sensing organized at VJCET. and More that 15 faculty members attended.

Details of Seminars /workshops organized	<ul style="list-style-type: none"> Organized one day discussion meet in association with Food Technology Division BARC on Extension shelf life of pineapple by application of nuclear radiation for farmers and pineapple merchants on 27 to 28 June 2017 at Viswajyothi College of Engineering and Technology,
Details of National/International Seminars organized	<ul style="list-style-type: none"> National Conference Recent Trends in Power system technologies NCPRS 2016, Organized on 22nd and 23rd, June 2017, at Viswajyothi College of Engineering and Technology. Nuclear Energy Awareness Seminar Organized on 30th September and 1st October r 2016 at Viswajyothi College of Engineering and Technology. One day, BARC Outreach Programme was organized on the theme Atomic Energy for Brighter Future at Viswajyothi College of Engineering and Technology, on 1st February 2018 One day Seminar on the topic “Use of Electricity: Safety and Energy Efficiency” was organized exclusively for house wives on 6.07.2018 at Viswajyothi College of Engineering and Technology,
Contribution to Institute activity	<ul style="list-style-type: none"> Dean, Industry Institute Interaction Cell Nodal Officer IEDC Convener IQAC Training and Documentation Committee Focal Point United Nations Academic Impact Faculty Coordinator ASPIRE , UNAI
Contribution to EEE department activity	<ul style="list-style-type: none"> Industrial Visit Arranged To Koodanakulam Nuclear Power Projects (KKNPP) for students and faculty Organized social commitment activities such as Electrical Renovation works for Assisi Snehaveedu , Madakkathanam and organized one day seminar on electrical safety and energy efficiency exclusively for housewives Industrial visit to organized to M/s TELK Angamaly Industrial visit organized to Edamalyar Hydro Electric power station Industry visit organized for faculty members to M/s KEL Mamala Visit organized for faculty members to nuclear projects at Kalpakkam

PROFESSIONAL BODIES

- Life Member of Indian Nuclear Society
- Fellow of Institution of Engineers (India).
- Life Member of Instruments society of India.

PUBLICATIONS

JOURNAL PUBLICATIONS	
1.	K K Rajan and B Aruna, Viswajyothi College of Engineering and Technology, Vazhakulam, Muvattupuzha, Kerala, India, PIN-686670 , Performance evaluation of a 200 kWp grid tied solar power plant, First International conference of Electrical Energy and power engineering 2020, (ICEEPE 2020), 27-28 October 2020, Penang, Malasia
2.	K K Rajan , A study on sodium - the fast breeder reactor coolant, Viswajyothi College of Engineering and Technology,Vazhakulam, Muvattupuzha, Kerala, India,PIN-686670, First International conference of Electrical Energy and power engineering 2020, (ICEEPE 2020), 27-28 October 2020, Penang, Malasia
3.	K.K Rajan ¹ , B.Aruna ¹ , S. Anju ¹ , S. Verma ² , P. R. Pedada ² , R. Bhattacharyay ² , 1 Viswajyothi College of Engineering and Technology, Vazhakulam, Kerala, India- 686670 , 2 Institute for Plasma Research, Gandhinagar, Gujarat, India-382428 Development of Level Sensor for Lead – Lithium Loop System, Proceedings of 2019 3rd IEEE International Conference on Electrical, Computer and Communication Technologies, ICECCT 2019, 2019, 8869441
4.	Dr. K.K.Rajan and Dr B Aruna, Department of .Electrical and Electronics Engineering Viswajyothi College of Engineering and Technology, Vazhakulam, Muvattupuzha, Kerala India, Review on Flow Measurement in Sodium Cooled Fast Reactor Circuits, , Proceedings of 2019 3rd IEEE International Conference on Electrical, Computer and Communication Technologies, ICECCT 2019, 2019, 8869337
5.	G. Vijayakumar, S Chandramouli, Nashine B K , P Selvavraj K K Rajan ; “Leak Experiments in LEENA Facility with modified Leak Detector Layout Large Pipelines”; Annals of Nuclear Energy, ISSN No. 0306-4549, No. 102 , May, 2017 pp. 326–333.
6.	K.K.Rajan , “A Review of Recent Advancements in Nuclear Power Generation” Prof. Electrical and Electronics Engineering Department Viswajyothi College of Engineering and Technology, Vazhakulam, Muvattupuzha, Independent Director, Nuclear Power Corporation of India Ltd, Mumbai, March 23 and 24 , 2018, Vimal Jyothi Engineering College, State Highway 59, Jyothi Nagar, Kannur District, Chemperi-670632, Kerala, India, International Conference on Control, Power, Communication and Computing Technologies, ICCPCCT 2018,

	2018, pp. 107–113, 8574309.
7.	G. Pdmakumar, K. Velusamy , B.V.S.S. Prasad , K.K. Rajan , "Hydraulic characteristics of a fast reactor fuel subassembly: An experimental investigation", Annals of Nuclear Energy ISSN No. 0306-4549, 102, 03 May 2017 , pp 102, 255–267
8.	N. S Shivakumar, Nagaraju Bekkenti, S. Suresh Kumar, N. Ravichandran, V. Vinod, G. Padmakumar, K.K.Rajan , "Evaluation of hydraulic characteristics of Core Flow Monitoring Mechanism for PFBR", Annals of Nuclear Energy, ISSN No. 0306-4549, 101, March 2017, pp 322–329
9.	S.Kishore, F.Beauchamp, ALLOU Alexandre; Chandramouli.S; A.Ashokkumar, K.K.Rajan , "Impingement wastage experiments with 9Cr 1 Mo steel", Nuclear Engineering and Design, ISSN No. 0029 5493, Volume 297, Jan 2017, pp. 104-110.
10.	Mahendra, C., Sai, P.M.S., Babu, C.A., Rajan, K.K. Transport phenomena in the electrodeionization of cesium from AMP-PAN, Separation Science and Technology (Philadelphia), 2017, 52(8), pp. 1468–1476
11.	Lijukrishnan, P., Ramdasu, D., Vinod, V., Padmakumar, G., Rajan, K.K. Numerical simulation and experimental validation of future FBR surge tank hydraulics, Lecture Notes in Mechanical Engineering, 2017, pp. 229–238.
12.	Dhanasekaran, P., Satya Sai, P.M., Anandbabu, C., Rajan, K.K. , Defluoridation of water by chemical impregnated Artocarpus hirsutus sawdust, Water Science and Technology: Water Supply, 2016, 16(5), pp. 1297–1312
13.	V. Prakash, P. Anup Kumar, K.K. Rajan and Krishnan Balasubramanian, "Ultrasonic technique for vibration measurements on PFBR fuel subassemblies", Journal of Vibration Engineering and Technologies, ISSN No.2523-3939, Vol. 4, No. 5, October 2016
14.	Ranga Ramakrishna, S.Kishore, S. Chandramouli, V.A. Sureshkumar, I.B. Noushad, V. Prakash and Dr. K. K. Rajan , "Experimental studies on acoustic leak detection in steam generators of Fast Breeder Reactor", Journal of Maintenance Engineering, ISSN No. 1355-2511. Vol.1, August 2016, pp 254-266.
15.	Muhammad Sabih, S. Sureshkumar, Sudheer Patri, N.S. Shivakumar, N. Ravichandran, C.L. Thakur, Vishal D. Paunekar, R. Vijayashree V.A. Sureshkumar, C. Meikandamurthy, I.B. Noushad, G. Padmakumar, V. Prakash, K.K. Rajan , "Design and performance evaluation of Core flow monitoring

	mechanisms for PFBR”, Annals of Nuclear Energy, ISSN No. 0306-4549, Volume 94, August, 2016, pp 732-741.
16.	B.Babu, M.Sai Baba, B.P.C. Rao, K.K.Rajan , “Numerical simulation of Miniature Mutual inductance type leak detector for FBTR”, IETE Technical Review, ISSN no. 0256-4602, 30, December, 2016, pp 1-8.
17.	V. Vinod, B.K Sreedhar, G. Padmakumar, K.K. Rajan , “Optimization of thermal baffle for liquid metal injection nozzle”, International of Journal of Nuclear Energy science and technology, (IJNEST), <u>ISSN No. 1741-6361, Volume 10, Issue 4</u> , 30, Jun 2016.
18.	Dr K K Rajan , “Power Scenario and Role of Nuclear Power in India , Technology and future” , Journal of Science and Technology, A Biannual Research Journal , Viswajyothi Academic Publication, Research and Publication Division, Volume 3, Number 1, ISSN No. 2454-402152, June, 2016.
19.	S.P. Pathak, V.A. Suresh Kumar, I.B. Noushad, K.K. Rajan , K. Velusamy, C. Balaji; Porous Body Model Based Parametric Study for Sodium to Air Heat Exchanger used in Fast Reactors, Journal of Thermal Science and Engineering Applications, Volume 8, March, 2016
20.	S. Kishore, Francois Beauchamp, Alexandre Allou, A. Ashok Kumar, S. Chandramouli, K.K. Rajan ; Impingement wastage experiments with 9Cr 1Mo steel, Nuclear Engineering and Design , Volume 297, Pages 104-110, January 2016
21.	Sudheer Patri, R. Vijayashree, V. Rajan Babu, S.Suresh Kumar, S. Chandramouli, C. Meikandamurthy, V. Prakash, K.K. Rajan , G.Srinivasan; Experimental Qualification of Mechanical and Electrical Sub-systems of a Complex Mechanism Against Fatigue Failure, Trans Indian Inst.Met (549-554) The Indian Institute of Metals-IIM 2015, 30 December, 2015
22.	S. Sathishkumar, V. Vinod, G. Padmakumar, K.K. Rajan ; Process optimization of a liquid sodium economizer circuit, Elsevier, Progress in Nuclear Energy 86 (2016) 120 -125, October, 2015
23.	N. Sivai Bharasi, M.G.Pujar, et al in MMG, S. Chandramouli & K.K.Rajan , FRTG; Changes in microstructural and mechanical properties of AISI type 316LN stainless steel and modified 9 Cr-1 Mo steel on long term exposure to flowing sodium in a Bi-Metallic sodium loop, The Minerals, Metals & Materials Society and ASM International, September, 2015
24.	K.K. Rajan , T. Jayakumar, P.K. Aggarwal, V. Vinod, “ Sodium flow measurement in large pipelines of sodium cooled fast breeder reactors with

	bypass type flow meters”, <i>Annals of Nuclear Energy</i> , Volume 87, August 2015, Pages 74-80
25.	K.K.Rajan , Vijay Sharma, G Vijayakumar and T Jayakumar, “Design and Development of Samarium Cobalt Based Permanent Magnet Flow Meter for 100 NB Pipe in Sodium Circuits”, <i>Annals of Nuclear Energy</i> , Volume 76, February 2015, Pages 357–366
26.	K.K.Rajan , Vijay Sharma, G. Vijayakumar, T. Jayakumar; Development of side wall type permanent magnet flowmeter for sodium flow measurement in large pipes of SFRs; Elsevier – Flow Measurement and Instrumentation 42 – Page 69-77 Jan.2015
27.	Sudheer Patri, M. Mohana, K. Kameswari, S. Suresh Kumar, S. Narmadha, R. Vijayashree, C. Meikandamurthy, A. Venkatesan, K. Palanisami, D. Thirugnana Murthy, B. Babu, V. Prakash, K.K.Rajan ; Simplified method for measuring the response time of scram release electromagnet in a nuclear reactor; <i>Nuclear Engineering and Design</i> Vol. 285, Page 150-157, Jan. 2015
28.	K. Kannan, V. Vinod, G. Padmakumar, R. Rudramoorthy, K.K.Rajan , “Effect of geometric factors on performance of a sodium to air heat exchanger in a fast breeder reactor”, <i>Annals of Nuclear Energy</i> pp 428–437, 2015.
29.	V. Vinod, S. Chandramouli, G. Padmakumar, B.K. Nashine, K. K. Rajan. , “Experimental study on the transient response of passive decay heat removal system”, <i>Nuclear Engineering and Design</i> , Volume 280, December 2014, Pages 564–569.
30.	K.K.Rajan , G.Vijayakumar, S. Sureshkumar, “Indigenous development of sodium flow meters for prototype fast breeder reactor”, <i>Journal of Instrument Society of India</i> , Vol. 44, No. 3 (Sept 2014), 153-154.
31.	K.K.Rajan , G.Vijayakumar,” Stabilization of Magnet Assemblies of Permanent Magnet Sodium Flowmeters used in Fast Breeder Reactors”, <i>Nuclear Engineering and Design</i> ,Volume 275, August 2014, 368–374.
32.	V. Vinod, L. S. Sivakumar, V.A. Suresh Kumar, I.B. Noushad, G. Padmakumar, K.K.Rajan. , “Experimental evaluation of the heat transfer performance of sodium heated once through steam generator”, <i>Nuclear Engineering and Design</i> , Volume 273, 1 July 2014, Pages 412-420.
33.	Sudheer Patri, S.P. Ruhela, R. Punniyamoorthy, R. Vijayashree, S. Chandramouli, P. Madan Kumar, R. Rajendraprasad, P. Vijayamohana rao, S. Narmadha, B.K. Sreedhar, K.K.Rajan , " Experimental evaluation of structural integrity of scram release electromagnet", <i>Nuclear Engineering and</i>

	Design 274 (2014) 90–99. July 2014
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