



PROFILE

PERSONAL INFORMATION:

Name	Dr.S.S. JAYABALAKRISHNAN
Designation	ASSISTANT PROFESSOR OF PHYSICS
Department	PHYSICS
E-Mail ID	krishnanphysics@gmail.com

I. Academic Qualification (Undergraduate Onwards):

- **Doctorial Ph.D**
University: - Anna university, Chennai
Title: Effect of temperature on thermodynamic and trasport properties of homologus amino acids and 4-amino butyric acid in aqueous solutions of metformin hydrochloride and salbutamol sulphate.
Year: 2010
- **Master of Philosophy:**
Institution: V.H.N.S.N. College, Viruthunagar
Title:
Year: 2006
- **Master of Education:**
University: Annamalai university, Chidambaram
Year: 2001
- **Bachelor of Education:**
University: Bharathiyar university, Coimbatore
Year: 1994
- **Master of Science:**
University: Annamalai university, Chidambaram
Subject: Physics
Year: 1991
- **Bachelor of Science:**
Institution: G.V.N. College, Kovilpatti
Subject: Physics
Year: 1989

II. TEACHING EXPERIENCE:

Undergraduate : 25 years
Postgraduate : 6 years
Doctorate of Philosophy : 7 years

1999 – 2013 worked as an Assistant Professor in P.S.R. Engineering College, Sivakasi.

2013 – till date working as an Assistant Professor in Mannar Thirumalai Naicker College, Madurai.

Area of Specialization:

- **Ultra Sonics**
- **Solid Electrolytes**
- **Energy Devices**

III. Details of Funds Received / Research Projects :

S.No	Project Title	Name of Applicant(s)	Status	Amount	Agency	Year
1	“Synthesis And Characterization Of Eu ³⁺ Activated Ba ₂ -Xv ₂ O ₇ :Eu ³⁺ Phosphor By Hydrothermal Method”	S.S.Jayabalakrishnan	Submitted	20000	Institution Sponsored Seed Money Project	2020
2	UBA-Under MHRD	S.S.Jayabalakrishnan	Submitted	50,000	UB A MHRD	2020
3	“Volumetric, ultrasonic speed, and viscometric studies of Hydroxychloroquine Sulphate in aqueous methanol solution at different temperatures”	S.S.Jayabalakrishnan	Submitted	25000	Institution Sponsored Seed Money Project	2021
4	UBA-Under MHRD	S.S.Jayabalakrishnan	Under going	1,00,000	UB A MHRD	2023

IV. Orientation Programmes / Refresher Courses / Short Term Courses attended :

- **UGC – Sponsored online Refresher Course, on Physics & Nanotechnology, at Bharathiar University, Sep 2021.**
- **UGC Sponsored Refresher, on Teacher Education, at Bharathiar University,**

Jan 2020.

- **UGC Sponsored Refresher Course, on Interdisciplinary Avenues For Advancement in Basic Sciences, at Madurai Kamaraj University, Nov 2016.**
- **UGC Sponsored Orientation programme at Madurai Kamaraj University, Feb 2015.**
- **Empanelled Training for National Service Scheme, at Avinashilingam University, Dec 2014.**
- **Faculty Development Programme on Mental Healthfirst Aid, RGNIYD MSCIMHR, Madurai, Mar 2017.**
- **In-Service Teacher Training Programme in “Physical Sciences”, at Sri Meenakshi Government Arts College for Women, Madurai, 05th & 6th May 2022.**

V. Books/Reports/Chapters/General articles etc:

Books Published:

- **Gemology, Shanlax Publications, Madurai, 978-93-90082-15-5, June 2020.**
- **LASER AND ITS APPLICATIONS, Shanlax Publications, Madurai, 978-93-93737-23-6, Jan 2022.**
- **Physics Appliances in Everyday Life, Shanlax Publications, Madurai, 978-93-94899-63-6, Jul 2022.**

Chapters in Books:

- **Chapter - Budding Undergraduate Science Teaching During the Corona Virus Pandemic :Use of Digital Technologies, New Approaches in Education, published by L ORDINE NUOVO Publication, 978-93-92995-18-7, Jan 2022.**
- **Physics Courses: Teaching-Learning Experience of a Support Teacher and a Student with Low Vision and Blindness, Essentials of Techno Pedagogy, Shanlax Publications, Madurai, 978-93-93737-85-4, Feb 2022.**

VI. RESEARCH EXPERIENCE:

Research Guidance: Recognized as a Supervisor to Guide

Ph.D - No:1636 Madurai Kamaraj University

S.No.	Research Level	Guiding	Submitted	Awarded
1	Ph.D	CO- GUIDE	-	Awarded-1
2	M.Phil	1	Submitted	Awarded
3	Ph.D	3	PURSUING	-

VII. Publications (*List of papers published, in year wise descending order*):

- Development and characterization of biopolymer electrolyte based on gellan gum for the fabrication of solid-state sodium ion battery. M.Kani Ajay Babu, **S.S.Jayabalakrishnan**. et.al. Ionics. Volume 29, pages 5249–5265, (2023)
- Mg²⁺ ion-conducting ceramic solid electrolytes based on Moringa oleifera seed and magnesium nitrate for secondary magnesium battery applications, Vignesh, N.M., **Jayabalakrishnan, S.S.**, Selvasekarapandian, S. et al. Ionics, 0947-7047, Dec 2023.
- Synthesis and luminescence investigation of Ba₂V₂O₇-co-doped Dy³⁺/Eu³⁺ phosphor for white light-emitting diode applications, N.Venkatesh Bharathi, P. Kavitha, S.Ramaswamy, S.S.Jayabalakrishnan,, K. Sakthipandi, Indian Journal of Physics, 0973-1458, Jan 2023.
- Proton conducting Moringa Oleifera seed-based biomaterial electrolyte for electrochemical application, Muniraj @ Vignesh N Jayabalakrishnan S.S, Selvasekarapandian S, Aafrin Hazaana S, Kavitha P, Venkadesh Krishna M, Oct 2022, Volume 29, Issue 1.
- Turning of luminescence properties of Ba₂V₂O₇ phosphors by co-doping Eu³⁺/Dy³⁺ ions, N.Venkatesh Bharathi, P. Kavitha, S.Ramaswamy, S.S.Jayabalakrishnan, K. Sakthipandi, Bulletin Materials Science, Sep 2022, Volume 45.
- Synthesis and characterization of a novel Ba_{2-x}V₂O₇:xDy³⁺ phosphor by hydrothermal method for WLED applications, N. Venkatesh Bharathi, T. Jeyakumaran, S. Ramaswamy, S.S. Jayabalakrishnan, AIP Conference Proceedings, Aug 2021, Volume 2352, Issue 1.
- Synthesis and characterization of a Eu³⁺-activated Ba_{2-x}V₂O₇:xEu³⁺ phosphor using a hydrothermal method: a potential material for near-UV-WLED applications, N. Venkatesh Bharathi, T. Jeyakumaran, S. Ramaswamy, S.S. Jayabalakrishnan, Luminescence: The journal of biological and chemical luminescence, Feb 2021, Volume 36, Issue 4.
- Synthesis and characterization of self-activated Ba₂V₂O₇ nanophosphor: A Potential Material for W-LED, S.S.Jayabalakrishnan, B.Venkatesh Bharathi, S.Ramasamy, Materials Research Express, Nov 2019, Volume 6, Issue 10.
- Volumetric Properties of L- Phenylalanine in Aqueous solutions of Salbutamol Sulphate in the Temperature Range 298.15 to 318.15K, Mohamed Roshan, Jenifer Raja Ruby and Jayabalakrishnan.S.S. Sadakath: A Research Bulletin, Jan 2019.
- A comparative study of attitude of final year under- Graduate students of colleges of rural and urban areas of Madurai district towards Environment

Education, **S.S.Jayabalakrishnan**, V.Ramachandran, Shanlax International Journal of Arts, Science and Humanities, 2017, Volume 5.

- Ultrasonic studies of 4 – aminobutyric acid in aqueous metformin hydrochloride solutions at different temperatures, Rajagopal K. Jayabalakrishnan S.S., International Journal of Thermophysics, Nov 2010, Volume 31, Issue 11 -12.
- Volumetric and viscometric studies of 4 – aminobutyric acid in aqueous solutions of metformin hydrochloride at 308.15, 313.15, Rajagopal K. Jayabalakrishnan S.S., Serb.Chem.Soci. Jan 2011, Volume 76, Issue 1.
- Ultrasonic studies of 4 –aminobutyric acid in aqueous solutions of salbutamol sulphate at different temperatures, Rajagopal K. Jayabalakrishnan S.S., Chinese Journal of Chemical Engineering, Aug 2010, Volume 18, Issue 4.
- Effect of temperature on volumetric and viscometric properties of homologous amino acids in aqueous solutions of Metformin Hydrochloride at different temperatures, Rajagopal K. Jayabalakrishnan S.S., Chinese Journal of Chemical Engineering, Sep 2009, Volume 18, Issue 3.
- Volumetric, ultrasonic speed and viscometric studies of salbutamol sulphate in aqueous methanol solution at different temperatures, Rajagopal K. Jayabalakrishnan S.S., Journal of Chemical Thermodynamics, Aug 2010, Volume 42.
- Volumetric and viscometric studies of 4 – aminobutyric acid in aqueous solutions of salbutamol sulphate at 308.15, 313.15, Rajagopal K. Jayabalakrishnan S.S., Chinese Journal of Chemical Engineering, Oct 2009, Volume 17, Issue 5.
- Viscometric, volumetric and acoustical studies of metformin hydrochloride in both aqueous and non- aqueous media at 303.15 K, Rajagopal K. Jayabalakrishnan S.S., J. Pure and Applied Ultrasonics, Feb 2006, Volume 28.

Research Articles Published in Proceedings:

- Apparent molal volume, apparent molal compressibility and viscosity B – Coefficient of Metformin hydrochloride Water and Methanol at different temperature, Rajagopal K. and Jayabalakrishnan S.S., World Congress on Engineering Technology, **Shanghai, China**, 363 – 6, IEEE press, Oct 28 – November 2, 2011.
- Voices for Barrier – Free Environment in India, S.S.Jayabalakrishnan, National Congress on “Disability, Barrier – Free Campus and Higher Education in India”, National/SDRS, New Delhi in Dravidian University, Kuppam, 25th and 26th March 2013.
- Providing Barrier Free Environment to the Disabled Students, S.S.Jayabalakrishnan, National Congress on “Disability, Barrier – Free Campus and Higher Education in India”, National/SDRS, New Delhi in Dravidian University, Kuppam, 25th and 26th March 2013.
- Electrostriction Effect of an Aqueous Metformin Hydrochloride with Glycine, Recent Trends in Ultrasonic Applications of Medical Physics, Rajagopal K. and Jayabalakrishnan S.S., 2015.
- Thermal Performance of Evaluation and Economics of Industrial Solar Water Heating System, S.S.Jayabalakrishnan, 1st International Conference on “Energy, Environment and Engineering” ICEEE-2016, Coimbatore

Institute of Technology, 29th Feb to 2nd March, 2016.

- Advanced Topics in Interdisciplinary research in chemistry and Physics, S.S.Jayabalakrishnan Meditational Chemistry in Nano Drugs, SRNM College, Sattur, 2nd Mar 2019.
- Disability Inclusive Disaster Risk Management in India, S.S.Jayabalakrishnan, Economic Impact of National Disaster, SDRS, New Delhi & Seismological Research Institute, Gandhinagar, Gujarat, 11th July, 2019.
- Climate Change, Intellectual Property & The Scope of Cultivating Microbes in Indian Agricultural Soil Field, S.S.Jayabalakrishnan, Contemporary and Upcoming Issues in the field of Intellectual Property Rights, PG and Research Department of Commerce, MTNC, 28th Mar 2022.
- Comparison of a Few Mathematical Applications in Advanced Level Physics, S.S.Jayabalakrishnan, Present Scenario in Mathematical Research-PSMR 2022, PG and Research Department of Mathematics, MTNC, 22nd Apr 2022.
- Study of Biomaterial Withania Somnifera based membrane electrolyte for Mg battery, S.S.Jayabalakrishnan, DAE – BRNS 9th Interdisciplinary Symposium on Materials Chemistry, BARC Mumbai, 7th Dec 2022.
- Development of Biomaterial Electrolyte for Solid State Magnesium-ion Battery, S.S.Jayabalakrishnan, DAE – BRNS 9th Interdisciplinary Symposium on Materials Chemistry, BARC Mumbai, 7th Dec 2022.
- Preparation of Moringa Oleifera Seed Based Solid Membrane Electrolyte for Rechargeable Li⁺ Ion Conducting Battery Applications, S.S.Jayabalakrishnan, INTERNATIONAL CONFERENCE ON WOMEN IN ELECTROCHEMISTRY, ICWEC – 2023, Bangalore IISc, 7th Apr 2023.
- Fabrication of Primary Sodium-Ion Battery by using Biopolymer Electrolyte based on Gellan Gum/NaI, S.S.Jayabalakrishnan, INTERNATIONAL CONFERENCE ON WOMEN IN ELECTROCHEMISTRY, ICWEC – 2023, Bangalore IISc, 7th Apr 2023.

Papers presented in seminars:

- Thermodynamic studies of metformin hydrochloride in non-aqueous media at different, 18th National Symposium on Ultrasonics held at National Physical Laboratory, National Physical Laboratory, New Delhi, Dec 2009.
- A comparative study on the attitude of the final year undergraduate students of colleges in rural and urban areas of Virudhunagar district towards environment education, NAAC sponsored National Seminar on 'Quality Enhancement and Sustenance in the Institutions of Higher Education with Rural and Semi Urban Background, G.V.N. College, Kovilpatti, 7th and 8th October 2010.
- An innovative activity breaking a big concept down into small parts, UGC sponsored Regional Seminar on Science Education, Gandhigram Rural University, 15th and 16th December 2010.
- Evolution of Science Curriculum through Ages, UGC sponsored National Seminar on Emerging Perspectives in, Peet Memorial Training College, Mavelikara, Kerala, 1st and 2nd March 2012.
- Developing Teacher Competencies in Using Technologies: Role of Teacher

Education, UGC sponsored National Seminar on Trends in Teacher Education, Dravidian University, Kuppam, Andhra Pradesh, 25th and 26th September, 2012.

- Enabling the Disabled in Farming Activities, National Symposium on Disability Management in Agriculture and Farming, SDRS, in New Delhi, 1st to 4th Feb, 2013.
- Economic Impact of Natural Disasters, National workshop on Disability Inclusive Disaster Risk Management in India, Institute of Seismological Research, Gujarat, 11th & 12th July, 2019.
- Science and Technology in Tamil Folklore, International Conference on Tamil Folklore, Mannar Thirumalai Naicker College, 31st March 2022.
- Science Facts in Tamil Literature, Multidisciplinary Documents in Tamil Grammar and Literature, Mannar Thirumalai Naicker College, 08th February 2023.
- PAN: PVP based on solid electrolytes for Li⁺ ion battery application, 18th Asian Conference on Solid State Ionics, 2024, Meenakshi College for Women, Chennai-24, 19th-22nd February 2024.

VIII. Honours And Recognition Awards And Rewards:

- Best young scientist award, Novel research, academy, 2019-2020.
- Best teacher award, Madurai Tamil folklore research foundation, 2021-2022.
- Best researcher award, Institutional, 2022-2023.
- Best researcher award, Institutional, 2023-2024.

IX. Membership in Academic/Professional Bodies:

S.No	Name of the Body	Capacity
1	Acoustical society of india	Life Member
2	Ultrasonic society of india	Life Member
3	ISTE	Life Member

X. Positions held at our college (MTNC):

S.No	Name of position	From	To
1	NSS PROGRAMME OFFICER	06-12-2013	30-06-2017
2	ADDITIONAL EXAM COORDINATOR	01-07-2014	01-07-2017
3	DEAN OF SCIENCE	22-09-2017	22-09-2020
4	UNNATH BHARATH ABHIYAN	04-07-2023	Till Date

XI. FDP/Workshop Attended (other than MTNC):

S. No	International/ National / State Level	Title of the Programme/ Course	Name of the Institution/ University	Dt/MM/YR
1	National	14th National Level Symposium on “Acoustics”	Bundlekhand University, Jhansi	16th February 2006
2	National	one day workshop on “Environmental Pollution”	SSN College, Chennai	5th June 2006
3	National	Seminar on “Recent Trends in Medical Instruments”	Government Engg. College. Tirunelveli	29-03-2007
4	National	3 day seminar on “Nano Technology	KSR institute of technology,	11th and 12th January 2009
5	National	two day workshop on “Nano Materials”	KSR institute of technology, Tiruchencode	11th and 12th January 2007
6	National	one day workshop on “Recent Trends in Drugs”	Manomaniam Sundaranar University, Tirunelveli	30th January 2008
7	International	two day international conference on “Value Based Education”	Annamalai University	6th and 7th November 2004
8	State Level	State level Workshop on Reforms in Curriculum Design & Evaluation Based on OBE	The Standard Fireworks Rajaratnam College for Women, Sivakasi	27-07-2019
9	National	National Workshop on Synthesis of Nanofibres	The Standard Fireworks Rajaratnam College for Women, Sivakasi	30-09-2019
10	National	Recent Trends in Energy Technologies	The American College, Madurai	14-08-2015
11	State Level	Chennai Science Festival-2017	Science City, Chennai	9th to 12th Feb, 2017
12	National	Atom to Star-AIR series 2014- 2015	Vigyan Prasara, AIR, TNSF	15-08-2015
13	National	National Seminar on Nuclear Power-an Economical Source of	NPCIL, Kudankulam & MEP CO, Sivakasi	19th Aug, 2016

14	National	Protection of Heritage Monuments Against Vandalism	Centre for Entrepreneurship Development,Tamilnadu	16th Dec,2014
15	National	Online National Faculty Enrichment Programme	IQAC, Mannar Thirumalai Naicker College	13-05-2020 To 19-05-2020
16	National	Online Faculty Development Programme-Unlocking the Potential-Role of UBA	Kalasalingam Academy of Research and Education	14-05-2020
17	National	National Level Workshop on Flipped Classroom learning tools	A.P.A.College of Arts and Culture,Palani	15-05-2020 and 16-05-2020
18	National	Webinar on How to Overpower COVID-19 Challenges	P.S.R.Engineering College,Sivakasi	20-05-2020
19	National	Webinar on Bio Diversity	Mannar Thirumalai Naicker College	22-05-2020
20	National	Webinar for Mentee Institutions Under UGC PARAMASH-SSR Preparation	The Standard Fireworks Rajaratnam College for Women, Sivakasi	25-05-2020 To 29-05-2020
21	National	Webinar on Prevention and Protection from COVID-19	K.L.N.College of Engineering,Madurai	26-05-2020
22	International	Webinar series on Cosmology and Nanotechnology	NGM Collge,Pollachi	27-05-2020 To 29-05-2020
23	International	Webinar on Recent Trends in Applied Sciences	VHNSN College,Virudhunagar	15-05-2020 and 16-05-2020
24	National	Webinar on NAAC Accreditation Management System Demo	InPods Ed-tech	29-05-2020
25	International	International Webinar on Intellectual Property Rights-A 360 View	SB Arts and KCP Science College,Vijayapur	29-05-2020
26	National	Webinar for Mentee Institutions Under UGC PARAMASH-NAAC	The Standard Fireworks Rajaratnam College for Women, Sivakasi	29-05-2020

		Accreditation Process-Dos and Don'ts		
27	National	Webinar Series on Knowledge Generation in during COVID-19 Pandemic – Qualitative Research	B.T.T.C, HSNC University & University of Mumbai	01-06-2020 To 06-06-2020
28	National	Webinar on Examination Reforms and Online Assessment Tools	SGTB Khalsa College, University of Delhi	12-07-2020
29	National	National Workshop on Super Ionic Conductors and its Applications to Battery, Fuel Cell and Supercapacitor, NSI CA-2022	Fatima College, Madurai	15&16-12-2022
30	State	State Level Workshop on Outcome Based Assessment and Evaluation	The Standard Fireworks Rajarathnam college for women, Sivakasi	14-02-2022

XII. FDP Attended in MTNC:

S. No	Name of the Professional Development Programme	Date and No. of Days	Name and address of the Institution imparting training
1	Technicalities of writing Research Proposal	29th June 2018	Mannar Thirumalai Naicker College
2	Intellectual Property Rights, Skill development Programmes, Innovations, Patents and Setting up Incubation Centres	22nd January 2019	Mannar Thirumalai Naicker College
3	Promotion of API Score and CAS Filing	2nd March 2019	Mannar Thirumalai Naicker College
4	One Day Training and Production Workshop on prospects of Outcome Based Curriculum	9th March 2019	Mannar Thirumalai Naicker College
5	Outcome Based Education	28th August	Mannar Thirumalai

		2019	Naicker College
6	21st Century Skills	5th March 2020	Mannar Thirumalai Naicker College
7	Quality Assurance and Sustenance in Higher Education	11th March 2020	Mannar Thirumalai Naicker College
8	Enhancing Quality by Unearthing Innovative Practices-EQUIP 2022	18th April to 24th April 2022	18th April to 24th April 2022 IQAC Mannar Thirumalai Naicker College & APV Mahalakshmi college for Women with IQAC Cluster
9	Education 4.0 Sustainable Economic Development	27th April 2022	Mannar Thirumalai Naicker College
10	Dynamics of Research Publications	15th&16th September 2022	Mannar Thirumalai Naicker College
11	Faculty Enhancement Programme on Insights of National Educational Policy	18th March 2023	Mannar Thirumalai Naicker College

XIII. Guest Lecture/ Plenary Talk:

Sl.No	International/ National/ State Level	Title of the Workshop / Conference	Name of the Institution/University	Month and Year
1	State Level	Development in science	Francis Xavier Engineering College, Tirunelveli	23-01-15
2	State Level	Big Bang Theory	Sourashtra College, Madurai	19-02-19
3	Webinar	Awareness Program on National Education Policy - 2020	Unnat Bharat Abhiyan College Adopted Villages	23-09-20
4	Webinar	Awareness Program on National Education Policy - 2020	Unnat Bharat Abhiyan of M.E.T Engineering College	02-10-20
5	Resource Person-Workshop on Household Appliances(DBT -Star College Scheme)	Vivekananda College, Thiruvadakam	Medical Applications of Gemstones	19-03-22
6	Guest Lecture	VVV college For Women	Gemstone Applications in	29-08- 22

			Everyday Life	
7	Induction Program for 1st Year Students	PSR Engineering College, Sivakasi	Applications of Gemstones	16-11-22
8	Science Expo	Idhayam Rajendran Senior Secondary School, Madurai	Time Management	19-11-22
9	Guest Lecture	PSR College of Education	Science and technology- Sustainable development in India	28-02-23
10	Special Address	NSS Camp Students	4 C 's(Concentration, Confidence, Critical Thinking and creativity) and Time Management	13-03-23
11	Resource Person	Scientia'24- Sustainable development of Science and technology in India	SACS MAVMM Engineering College Madurai	12-03 2024

