



FACULTY PROFILE

Personal Details

Name : **Dr Lakshmi Vijayan**
Department : Physics
Designation : Assistant Professor (Grade-III)
Educational Qualification : Ph.D.
Area of Specialisation : Material Science- Ac conductivity studies and Ion relaxation studies using impedance spectroscopy, Conducting Polymers
Email : lakshmivijayan@gmail.com
Phone number : 9446478300

Academic Identity

Employee ID : 716885
VIDWAN ID : 677228
Orcid ID : 0009-0008-6036-6879

Research Parameters

Google scholar citations : 418
H index : 12
i10 index : 14

Education

Sl. No.	Degree	Institution/University	Year
1	Ph.D.	Pondicherry Central University, Pondicherry	2012
2	M.Sc.	SPAP, M. G. University, Kottayam	2004
3	B.Sc.	BCM College, Kottayam	2001
4	Pre-Degree	KG College, Pampady	1998

Career Profile

Sl. No.	Institution/Organization	Designation	Period
1	St. Aloysius College, Edathua	Assistant Professor (Grade-III)	2012 onwards

Positions Held or Holding, if any

Sl. No.	Position	Period
1	Research Advisory Committee, Coordinator, St. Aloysius College, Edathua	2023 to 2025
2	Member, IQAC	2023 to 2025
3	Chairperson, Grievances Redressal Committee for College Union Election 2023-2024	2023
4	Member, College Staff council	2023 to 2025
5	Coordinator, Internal exam cell	2023 to 2025
6	Member, Anti-Narcotic cell	2023 to 2025
7	Member, Mobile squad Committee	2023 to 2025
8	Head of the Department of Physics	November 2023 onwards
9	Member, Women Cell	2017 to 2022
10	Coordinator, Nature and Energy Club	2023 -2025
11	Presiding Officer, Lok Sabha and Panchayat Election	2019, 2024
12	Member, Staff Council Executive	2019-2021
13	Secretary, Diamond Dual, Alumni Association, Department of Physics	2020-2023

Research Publications

SI. No.	Research Publications
1.	Ion dynamics and structure of Lithium-Rich nanocrystalline $\text{Li}_2\text{NiZrO}_4$ R Cheruku, MVH Rao, A Srivastava, P Aruna, CM Joseph, Surya Bhaskaram, Lakshmi Vijayan Journal of Electroceramics, (2026) 1-8
2.	Rajesh Cheruku, D. Surya Bhaskaram, G. Govindaraj, Lakshmi Vijayan Nanocrystalline Li_2MoO_4 : Synthesis and electrical studies Journal of Alloys and Compounds 788(2019) 779-786
3.	Rajesh Cheruku, G. Govindaraj, Lakshmi Vijayan Electrical relaxation, optical and magnetic studies of nanocrystalline lithium ferrite synthesized by different chemical routes Mater. Res. Express 4 (2017) 125008
4.	Rajesh Cheruku, G. Kruthika, G. Govindaraj, Lakshmi Vijayan Electrical relaxation studies of olivine type nanocrystalline LiMPO_4 (M=Ni, Mn and Co) materials Journal of Physics and Chemistry of Solids 86 (2015) 27
5.	Rajesh Cheruku, G. Govindaraj, Lakshmi Vijayan Super-linear frequency dependence of ac conductivity in nanocrystalline lithium ferrite Materials Chemistry and Physics 146 (2014) 389
6.	Lakshmi Vijayan , Rajesh Cheruku, G. Govindaraj Electrical, Optical and Magnetic investigations on LiNiPO_4 based Olivines Synthesised by Solution Combustion Technique Materials Research Bulletin 50 (2014) 341
7	Rajesh Cheruku, G. Govindaraj, Lakshmi Vijayan Ion dynamics in sol-gel synthesized $\text{Li}_2\text{Ni}_{1-x}\text{Mg}_x\text{TiO}_4$ nanocrystallites Materials Chemistry and Physics 141 (2013) 620
8	Viswarupa Mohanty, Rajesh Cheruku, G. Govindaraj, Lakshmi Vijayan Ce-substituted Lithium Ferrite: Preparation and electrical relaxation studies Journal of Material Science & Technology (2013) 1
9	Viswarupa Mohanty, Rajesh Cheruku, G. Govindaraj, Lakshmi Vijayan Synthesis, structure and electrical conductivity studies of inverse spinel $\text{Li}_{0.5}\text{Fe}_{2.5}\text{O}_4$ Indian Journal of Pure and Applied Physics 51 (2013) 381
10	Rajesh Cheruku, G. Govindaraj, Lakshmi Vijayan Structural and electrical conductivity studies of nanocrystalline $\text{Li}_2\text{NiTiO}_4$ material Indian Journal of Pure and Applied Physics 51 (2013) 343
11	Lakshmi Vijayan , Rajesh Cheruku, G. Govindaraj Structural and ac electrical properties of LiCoPO_4 synthesised by template free hydrothermal approach AIP Conf. Proc. 1512 (2013) 428, ISBN 978-0-7354-1133-3
12	Rajesh Cheruku, G. Govindaraj, Lakshmi Vijayan Electrical and magnetic properties of sol-gel synthesized nanocrystalline $\text{Li}_2\text{Ni}_{1-x}\text{Mg}_x\text{TiO}_4$ materials AIP Conf. Proc. 1512 (2013) 330, ISBN 978-0-7354-1133
13	Rajesh Cheruku, Lakshmi Vijayan , G. Govindaraj Ac conductivity studies of Solution Combustion Synthesized Nanocrystalline $\text{Li}_2\text{MgZrO}_4$ material AIP Conf. Proc. 1447 (2012) 345, ISBN 978-0-7354-1045-9
14	Lakshmi Vijayan , Rajesh Cheruku, G. Govindaraj Structure and Ion Transport in $\text{Li}_3\text{Fe}_2(\text{PO}_4)_3$ Synthesized by Solution Combustion Technique Journal of Applied Physics 111 (2012) 064905
15	Lakshmi Vijayan , Rajesh Cheruku, G. Govindaraj and S. Rajagopan Physical and electrical properties of combustion synthesized NASICON type $\text{Na}_3\text{Cr}_2(\text{PO}_4)_3$

	crystallites: Effect of Glycine molar ratios Materials Chemistry and Physics 130 (2011) 862-869.
16	Rajesh Cheruku, Lakshmi Vijayan , G.Govindaraj Electrical Conductivity Studies of Solution Combustion Synthesized Nanocrystalline $\text{Li}_2\text{NiZrO}_4$ material AIP Conf. Proc. 1349 (2011) 1013-1014
17	Lakshmi Vijayan , and G. Govindaraj Structural and electrical properties of high-energy ball milled NASICON type $\text{Li}_{1.3}\text{Ti}_{1.7}\text{Al}_{0.3}(\text{PO}_4)_{2.9}(\text{VO}_4)_{0.1}$ ceramics Journal of Physics and Chemistry of Solids 72 (2011) 613-619.
18	Lakshmi Vijayan , Rajesh Cheruku, G. Govindaraj and S. Rajagopan Ion dynamics in combustion synthesized $\text{Na}_3\text{Cr}_2(\text{PO}_4)_3$ crystallites Materials Chemistry and Physics 125 (2011) 184–190.
19	Lakshmi Vijayan and G. Govindaraj Impedance spectroscopic studies of planetary ball-milled lithium titanium phosphate material Physica B: Physics of Condensed Matter 404 (2009) 3539–3543.

Research Projects

S. No.	Title of the Project	Funding Agency	Amount	Period
1.	Minor Research project Title: Investigations on Electrical, Magnetic, Electrochemical behaviour of NASICON and Olivine Materials.	UGC	Rs. 200000/-	2014

Seminar/ Workshops Organized

S. No.	Title of the Seminar/ Workshop	Funding Agency	Amount	Date
1.	EUREKA CORAL 2016: Workshop for School students	KSCSTE funded	Rs. 20,000/-	10th -11th November 2016
2.	Coordinator of Women Cell Inauguration of by Hon. Dist. Collector, Ms. Anupama IAS	KSWDC funded	Rs. 25,000/-	19 December 2017.
3	Coordinator of Women cell training programme on Fabric painting			3 rd March 2018.
4	Coordinator of Celebration of International Women's Day: Invited talk by Dr. Ancy Joseph			8 March 2018.
5	Coordinator of Dr. Varghese Mathew Endowment Elocution competition,	Nil	-----	14 th February 2019.
6	Coordinator of the poster designing competition	ICDS cell-Alappuzha district	-----	7 th February 2019.
7	Coordinator of Celebration of International Women's Day	KSWDC funded	Rs. 10,000/-	21 st March 2019.

8	Coordinator of talk on Violence against Women: Laws and Latches to Justice by Adv. Raji P Joy	KSWDC	Rs. 10,000/-	19 th December 2019.
9	Coordinator of Celebration of International Women's Day by Mrs. Manju Nair, SI, Mavelikara			6 th March 2020
10	Coordinator of a National webinar series on the topic "Gender Bias and Gender Equality" by Divya. K and Dr. Amruthraj R M			17 th -18 th September 2020.
11	Coordinator of Invited talk on Global Environmental Pollutants by Dr. Mahesh Mohan organised by Nature and Energy Club and Department of Physics.	Nil	----	9 th January 2020
12	Coordinator of Sabu Jacob Memorial all Kerala Intercollegiate Quiz Competition	Nil	----	24 th January 2020
13	Coordinator of Environmental Day celebrations: International Webinar on Ecosystem Restoration, organised by Nature and Energy Club and Department of Physics	Nil	----	5 th June 2021.
14	NATIONAL TEACHERS' DAY CELEBRATION	Nil		6 th September 2021
15	National Energy Conservation Day	Nil		14 th December 2021
16	Diamond DUAL 2021, Alumni meet			13 th February 2021
17	Coordinator of Commemoration of great scientists, student presentation series-I	Nil		12.8.2021, 06.01.2022 04.02.2022
18	Coordinator - word space week celebrations	Nil		5 th to 8 th October 2021.
19	Coordinator - APT-Talent Search Examination	Nil		2022
20	Coordinator - NATIONAL SCIENCE DAY CELEBRATIONS 2022	APT, Kerala		26 th February 2022
21	Coordinator -DIAMOND DUAL 2022	Nil		23.04.2022
22	Coordinator- Two-day Workshop on Experiments utilizing ExpEYES	APT	Rs. 5000	21 st - 22 nd February 2024

23	Coordinator- National Energy Conservation Day-Energy Conservation Awareness Campaign and Survey	Nil		18 th December 2023,
24	Coordinator- 10 th Dr. Varghese Mathew Endowment Elocution Competition	Nil		14 th February 2024

Research Projects

Sl. No.	Title of the Project	Funding Agency	Amount	Period
1	Investigations on Electrical, Magnetic, Electrochemical behaviour of NASICON and Olivine Materials Role	UGC	Amount: 200000	Year: 2014-2016

Awards/Achievements

Sl. No.	Details	Year
1.	STANDARD REFERENCES XRD pattern in two publications: (1) <i>Materials Chemistry and Physics</i> 130 (2011) 862-869 (2) <i>Journal of Physics and Chemistry of Solids</i> 72 (2011) 613-619 have been selected as standard references in powder diffraction file of International Centre for Diffraction Data (ICDD).	2011
2.	Editor 1. Proceedings of UGC sponsored National Seminar 3 rd UGC sponsored National Seminar on “Recent Trends in Nano and other Materials for Energy Efficient Devices” Department of Physics, July 20-22, 2017. The national seminar was co-sponsored by Kerala State Council for Science, Technology and Environment, Thiruvananthapuram. 2. Eureka – Manual of Experiments of a two-day workshop “EUREKA” 10th -11th November 2016 3. Book entitled” Multi-Disciplinary Journal of St. Aloysius College” published on January 2024 ISBN: 978-93-6013-092-3	2017, 2016, 2024
3	Journal Reviewer Journal of Luminescence (2017)	

SI. No.	Book Details
1.	Book chapter entitled “Synthesis and Characterization of Lithium Ferrite Nanoparticles” Lakshmi vijayan , Cincila T Joy, Akshaya Sali Multi-Disciplinary Journal of St. Aloysius College, Chapter 8, 39-44, January 2024 ISBN: 978-93-6013-092-3
2.	Book chapter entitled “NASICON Materials: Structure and Electrical properties” Lakshmi Vijayan , G. Govindaraj Polycrystalline Materials, Chapter 4, p. 77-106, ISBN: 978-953-307-934-9 .
3.	Book chapter entitled “ <i>Electron Microscopic Studies on the Lithium Ion Conducting Materials</i> ” Rajesh Cheruku, Lakshmi Vijayan , G.Govindaraj Current Microscopy Contributions to Advances in Science and Technology (A. Méndez-Vilas, Ed.), Formatex Research Center, Vol. 2, p. 1312-1323, December 2012., ISBN (13): 978-84-939843-6-6

Invited Lectures/ Paper Presentations in Conferences

SI. No.	Conference & Presentation Details
1.	Presented a paper (oral) in International Conference on Recent Advances in Materials Science and Computational Techniques (RAMSACT-2025), December 18–20, 2025, Manipal University Jaipur Polypyrole Thin Film- Structural, Optical and Electrical Study Lakshmi Vijayan, Lincy K Alex, Anusree M Nathan and Rajesh Cheruku
2	68 th DAE-Solid State Physics Symposium, December 18 - 22, 2024, at BARC, Mumbai. Nanocrystalline $Na_{0.5}Fe_{2.5}O_4$: A Study of Optical, Magnetic, and Impedance Spectroscopy Rajesh Cheruku, Lakshmi Vijayan Electronic and Optical Characterization of Polypyrrrole Thin Films: A UV -Visible Absorption Study Lincy K Alex & Lakshmi Vijayan
3	37 th Kerala Science Congress, 07-10 February 2025, Kerala Agricultural University, Thrissur Study on the effect of Oxidant to Monomer ratio on optical and electrical properties of Polypyrole thin films
4	Kerala Science Congress, Govt. Brennen College, Thalasserry, 28 th -30 th Jan, 2018 Lakshmi Vijayan, Srijitha Menon, Krishnaveni M. Hydrothermal Synthesis of $LiMnPO_4$
5	59 th DAE Solid State Physics Symposium, 16 th -20 th December, 2014, VIT, Vellore Electrical conductivity of Graphene Wrapped nanocrystalline $LiMnPO_4$ Rajesh Cheruku, G.Govindaraj, D. Surya Bhaskaram, Lakshmi Vijayan

6	58 th DAE Solid State Physics Symposium, 17 th -21 st December, 2013, Thapar University, Patiala. Template Free Hydrothermal Synthesis of LiMnPO ₄ Lakshmi Vijayan, Rajesh Cheruku, G.Govindaraj
7.	57 th DAE Solid State Physics Symposium, 03 rd – 07 th December, 2012, IIT Bombay, Powai, Mumbai. (a) Electrical and Magnetic Properties of Sol-Gel synthesised Nanocrystalline Li ₂ Ni _{1-x} Mg _x TiO ₄ materials Rajesh Cheruku, Lakshmi Vijayan, G.Govindaraj (b) Structural and AC electrical Properties of LiCoPO ₄ synthesised by Template Free Hydrothermal Approach Lakshmi Vijayan, Rajesh Cheruku, G.Govindaraj
8	56 th DAE Solid State Physics Symposium, December, 2011 Ac conductivity studies of solution combustion synthesized nanocrystalline Li ₂ MgZrO ₄ material Rajesh Cheruku, Lakshmi Vijayan, G. Govindaraj
9	11 th Asian Conference of Solid State Ionics An alternate approach for Jonscher's power law: Complex impedance spectra analysis of glassy materials G. Govindaraj, Lakshmi Vijayan New Materials for Pollution Free Energy Devices, 2008, p. 395-400 (Eds. B. V. R. Chowdari <i>et. al.</i>), ISBN: 023-063-567-9.
10	5 th Asian Conference on Electrochemical Power Sources, Singapore, 17th-20th September, 2010 Electrical relaxation studies of nano-crystalline Li ₃ Fe _{2-x} Mg _x (PO ₄) ₃ synthesised by solution combustion synthesis Lakshmi Vijayan, G.Govindaraj, S. Rajagopan
11	12 th Asian Conference of Solid State Ionics, (a) Anomalous relaxation and ac conductivity in ion conducting solids Fundamental Researches and Technological Applications, 2010, p. 357-363 (Eds. B. V. R. Chowdari <i>et. al.</i>), ISBN: 978-7-5629-3159-1 G. Govindaraj, Lakshmi Vijayan, Odile Bohnke (b) Electrical relaxation studies of nano-crystalline Na ₃ Cr ₂ (PO ₄) ₃ prepared by solution combustion Lakshmi Vijayan, Rajesh Cheruku, G. Govindaraj, S. Rajagopan Fundamental Researches and Technological Applications, 2010, p. 112-119
12	6 th Asian Conference on Electrochemical Power Sources, Chennai, January, 2012 (a) Ac Electrical Relaxation and Electrochemical Studies in LiNiPO ₄ based Olivine Systems Synthesized by Solution Combustion Technique Lakshmi Vijayan, Rajesh Cheruku, G.Govindaraj, C. Nithya, S. Gopukumar (b) Electrical and Electrochemical studies of Solution Combustion Synthesized Nanocrystalline Li ₂ NiZrO ₄ material Rajesh Cheruku, Lakshmi Vijayan, G.Govindaraj, C. Nithya, S. Gopukumar
13	7 th National Conference on Solid State Ionics Analysis of LiPO ₃ glassy system with Jonscher's universal power law and recently proposed non-Debye dielectric relaxation function G. Govindaraj, Lakshmi Vijayan Proceedings of 7th National Conference on Solid State Ionics, Solid State Ionics and

	Its Applications, 2006, p. 96, ISBN: 13:978-1403-93024-8
14	51 st DAE Solid State Physics Symposium Non-power law approach to study ac conduction and analysis of LiPO ₃ glassy system G. Govindaraj, Lakshmi Vijayan
15	52 nd DAE Solid State Physics Symposium Hopping ion dynamics and relaxation process in NASICON type glassy system Lakshmi Vijayan, G. Govindaraj
16	53 rd DAE Solid State Physics Symposium, 2008 DC and AC conductivity duality in ion conducting solids G. Govindaraj, Odile Bohnke, Lakshmi Vijayan
17	54th DAE Solid State Physics Symposium, 2009 Solution combustion synthesis of Na ₃ Cr ₂ (PO ₄) ₃ material Lakshmi Vijayan, Rajesh Cheruku, G. Govindaraj, S. Rajagopan
18	9 th National Conference on Solid State Ionics, December, 2011 Structural and electrical conductivity studies of nanocrystalline Li ₂ NiTiO ₄ material Rajesh Cheruku, Lakshmi Vijayan, G. Govindaraj