Curriculum Vitae

1. Name and full correspondence address

Dr. B. Sundarakannan
Professor
Department of Physics
Manonmaniam Sundaranar University
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3. Institution

Manonmaniam Sundaranar University

4. Date of Birth

15.05.1971

5. Gender (M/F/T)

M

6. Category Gen/SC/ST/OBC

OBC

7. Whether differently abled (Yes/No)

No

8. Academic Qualification (Undergraduate Onwards)

S.No.	Degree	Year	Subject	University/Institution	% of marks
1	B.Sc.	1991	Physics	Bharathidasan	62
2	M.Sc.	1993	Physics	Bharathidasan	72

9. Ph.D. thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Thesis Title: Phase Transition and Defect Studies on BaFCl
Guide's Name: Dr. R. Kesavamoorthy, Materials Science Division, Indira Gandhi Centre for Atomic Research, Kalpakkam
University: University of Madras
Year of Award: 2001

10. Work experience (in chronological order).

S.No.	Positions held	Name of the Institute	From	To
1	Postdoctoral Fellow	Center for Interdisciplinary Research Tohoku University, Sendai, Japan.	January 2001	August 2001
2	JSPS Fellow	Nagoya Institute of Technology, Nagoya, Japan.	September 2001	January 2004
3	Postdoctoral Fellow	Department of Physics, University of Puerto Rico, San Juan, Puerto Rico, USA.	February 2004	January 2006
4	Guest Lecturer	Bharathidasan Institute of Technology Thiruchirappalli.	June 2006	September 2007
5	Lecturer	Department of Physics Manonmaniam Sundaranar University, Tirunelveli	September 2007	October 2010
6	Reader	Department of Physics Manonmaniam Sundaranar University, Tirunelveli	October 2010	October 2013
7	Associate Professor	Department of Physics, Manonmaniam Sundaranar University, Tirunelveli	October 2013	October 2016
8	Professor	Department of Physics, Manonmaniam Sundaranar University, Tirunelveli	October 2016	till date

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

S. No.	Name of Award	Awarding Agency	Year
1	DAE JRF & SRF	IGCAR, Kalpakkam	1995
2	JSPS Fellowship	Japan Society for Promotion Science, Tokyo	2001

12. Details of Projects completed during the last 5 years

S. No.	**Title**	**Cost in Rs**	**Duration**	**Role as PI/Co-PI**	**Agency**
1	Electric field control of magnetization in FM/FE hybrid structures	Rs.7,26,749/-	March 2012-March 2016	PI	UGC DAE CSR
2	Development of Lead Free Piezoelectric ceramics	Rs.12,48,394/-	August 2012-November 2015	PI	CSIR, New Delhi
3	Development of Magnetoelectric laminated composites for magnetic field sensors and microwave devices	Rs.9,77,038/-	February 2011 - January 2014	PI	UGC, New Delhi
4	Fabrication of titania nanotubes arrays with polyoxometalates and their photo electrochemical hydrogen generation properties	Rs.31,35,960/-	2012-2015	Co-PI	DST, New Delhi
5	Electric Field Induced Magnetisation reversal in FM/FE thin film heterostructures	Rs.26,51,000/-	2020-2024	PI	DST SERB

13. Publications *(List of papers published in SCI Journals, in year wise descending order).*

S. No.	Author	Title	Name of Journal	Volume	Page	Year
1	G. C. Ancy. P. M. Priya Dharsini, Raja Nadarajan, **Sundarakannan, Balasubramanian**	Structural phase coexistence enhances the energy storage density of (Bi0.5Na0.5)0.8Ba0.2Ti1-ySnyO3 lead-free ceramics	Physica B: Condensed Matter	683	415919	2024
2	P. M. Priya Dharsini, Bhadra PriyaK, Nandakumar, **Sundarakannan, Balasubramanian**	Leveraging the strain transfer at the interface between self-composite CoFe 2 O 4 embedded in pre-sintered Na 0.5 Bi 0.5 TiO 3 ceramics matrix for the enhancement of magnetoelectric voltage coefficient	Physica Scripta	5	99	2024
3	L. Venkidu, N. Raja, D. E. Jain Ruth, A. Rashid, N. V. Giridharan, **B. Sundarakannan**	Fe3+- and Nb5+-Substituted Na0.5Bi0.5TiO3: A Route toward Enhanced Ferroelectric Photovoltaic Response in Al/NBFNT/Ag Solar Cell through Reduced Bandgap and Controlled Oxygen Vacancy	Energy Technology	11		2023
4	P.M.Priya Dharsini , G.C. Ancy, Amritesh Kumar, A. Arockiarajan, **B. Sundarakannan**	Ferrimagnetic-ferroelastic novel particulate composites: Absorption of positive magnetostriction of CoFe2O4 by LaCoO3 and enhanced strain sensitivity at low field	Journal of Alloys and Compounds	968	171984	2023
5	A. Ashok Kumar, O. Annalakshmi, **B. Sundarakannan**	Thermoluminescence properties of quartz a natural dosimeter from beach sand.	Journal of Radioanalytical and Nuclear Chemistry	332	3957	2023
6	A. Ashok Kumar, O. Annalakshmi, M.G. Komathi,**B. Sundarakannan**	Thermoluminescence dosimetric characteristics of natural zircon .	Nuclear and particle physics proceedings	339	33	2023

7	G. C. Ancy, L. Venkidu, P. M. Priya Dharsini, D. Dayanithi, N. V. Giridharan and **B. Sundarakannan**	Temperature-dependent energy storage performance of the ceramics in MPB region identified from the 1−(x + y) (Bi0.5Na0.5)TiO3-xBaTiO3-yBaZrO3 ternary ceramics	Journal of Materials Science: Materials in Electronics	34	1373	2023
8	L. Venkidu, N. Raja, and **B. Sundarakannan**	Impact of charge-compensated Fe and Nb co-substitution on BaTiO3: Bandgap and grain size reduction and enhanced bulk photovoltaic power of Al/BFNT/Ag solar cell	Solar Energy	257	34-44	2023
9	L. Venkidu, D. E. Jain Ruth, M. Veera Gajendra Babu, P. Esther Rubavathi, D. Dhayanithi, N. V. Giridharan and **B. Sundarakannan**	Suppression of intermediate antiferroelectric phase in sub-micron grain size Na0.5Bi0.5TiO3 ceramics	Journal of Materials Science: Materials in Electronics	33	25006-25024	2022
10	P.M. Priya Dharsini, L. Venkidu, G.C. Ancy, M.T. Rahul, K. Nandakumar, D.Dayanithi, N.V. Giridharan and B. Sundarakannan	Enhanced magnetoelectric coefficients in Na0.5Bi0.5TiO3–CoFe2O4 particulate composites prepared from pre‑sintered constituents	Applied Physics A	128	423	2022
11	L. Venkidu, Anish Babu Athanas, K. Swarnalatha and **B.Sundarakannan**	Fabrication of DSSCs using ferroelectric photoanodes of co-substituted *(1 - x)BiFeO$_3$-(x)BaFe$_{1/2}$Nb$_{1/2}$O$_3$:* Structural correlation to bandgap reduction and its impact on power conversion efficiency	Materials Letters	311	131473	2022
12	P. Esther Rubavathi, D. Dayanithi, N.V. Giridharan, M.T. Rahul, Nandakumar Kalarikkal, Gobinda Das Adhikary and **B.Sundarakannan**	Origin of magnetic, magnetoelectric effect and the influence of reentrant ferroelectric phase on the structural and multiferroic properties of Dy^{3+}-Fe^{3+} co-substituted BaTiO3 ceramics	Journal of Magnetism and Magnetic Materials	538	168260	2021
13	P. Esther Rubavathi, M.T. Rahul, Nandakumar Kalarikkal, Gobinda Das Adhikary and **B.Sundarakannan**	Enrichment of magnetoelectric effect in the hexagonal $BaTi_{1-x}Co_xO_3$ artificial type-II multiferroics by defects	Journal of Magnetism and Magnetic Materials	529	167927	2021
14	P. Esther Rubavathi, Santhi Maria Benoy, K. Baskar, L.Venkidu; M. Veera Gajendra Babu, D. Dayanithi, N.V. Giridharan and **B.Sundarakannan**	Impact of non-magnetic BaTiO3 substitution on structure, magnetic, thermal and ferroelectric properties of BiFeO3 ceramics at morphotropic phase boundary	Materials Chemistry and Physics	255	123560	2020
15	P. Esther Rubavathi; L.Venkidu; MVG.Babu; R. Venkat Raman; B. Bagyalakshmi; S. M. Abdul Kader; K Baskar; M. Muneeswaran; N.V. Giridharan; **B.Sundarakannan**	Structure, morphology and magnetodielectric investigations of $BaTi_{1-x}Fe_xO_{3-\delta}$ ceramics	Journal of Materials Science: Materials in Electronics	30	5706-5717	2019
16	P.Esther Rubavathi, M.Veera Gajendra Babu, B.Bagyalakshmi, L.Venkidu, D.Dhayanithi, .V.Giridharan, **B.Sundarakannan**	Impact of Ba/Ti ratio on the magnetic properties of $BaTiO_3$ ceramics	Vacuum	159	374-378	2019

17	D.E. Jain Ruth, R.AU Rahman, **B.Sundarakanan** and Murugan Ramaswamy.	Room temperature multiferroicity and magnetoelectric coupling in Na-deficient sodium bismuth titanate	Applied Physics Letters	114	062902	2019
18	B. Bagyalakshmi, N.Lakshminarasimhan, and **B. Sundarakannan**.	Temperature-induced strain mediated magnetization changes in $NiFe_2O_4/BaTiO_3$ heterostructure	Ceramics International	44	15099-15103	2018
19	M. Veera Gajendra Babu, B. Bagyalakshmi, N. V. Giridharan, D. Dhayanithi, and **B. Sundarakannan**	Coexistence of ferroelectric phases and electric filed induced structural transformation in sodium potassium bismuth titanate ceramics	Journal of Applied Physics	123	234101	2018
20	L. Venkidu, MVG. Babu, P. Esther Rubavathi, B. Bagyalakshmi**, B.Sundarakannan**	Structure, microstructure, magnetic and magnetodielectric investigations on $BaTi_{(1-x-y)}$ $Fe_xNb_yO_3$ ceramics.	Ceramics International	44	8161-8165	2018
21	DE Jain Ruth, L. Venkidu, and **B.Sundarakannan.**	Structure–property relation to enhance the piezoelectric and ferroelectric properties in $(Na_{0.5}$ $Bi_{0.5})TiO_3$-based non-MPB lead-free piezoelectric ceramics	Journal of Materials Science: Materials in Electronics	29	5433-5438	2018
22	M. Veera Gajendra Babu; B.Bagyalakshmi; **B.Sundarakannan**,	Impact of K-compensation on phase fraction, dielectric permittivity, remnant polarization and piezoelectric constant of sodium potassium bismuth titanate ceramics	Journal of Materials Science: Materials in Electronics	28	18620-18629	2017
23	S.M.Abdul Kader; D. E. Jain Ruth; M. Veera Gajendra Babu; M.Muneeswaran; N.V.Giridharan; **B.Sundarakannan**	Investigations on the effect of Ba and Zr co-doping on the structural, thermal, electrical and magnetic properties of $BiFeO_3$ multiferroics	Ceramics International	43	15544-15550	2017
24	M. Veera Gajendra Babu; B.Bagyalakshmi; D. Pathinettam Padiyan; Y.Ren; **B.Sundarakannan**	Grain size induced monoclinic (Cm) to rhombohedral (R3c) transformation in sodium potassium bismuth titanate ceramics	Scripta Materialia	141	67-71	2017
25	D. E. Jain Ruth; **B.Sundarakannan**	A correlative study on strain and variation of coercive field in lead-free $(Na_{0.5}Bi_{0.5})TiO_3$-$Bi(Mg_{0.5}Zr_{0.5})O_3$-$Bi(Mg_{0.5}Ti_{0.5})O_3$ ternary system	Journal of Materials Science: Materials in Electronics	28	15907-15914	2017
26	M. Veera Gajendra Babu; B.Bagyalakshmi; L.Venkidu; **B.Sundarakannan**	Grain size effect on structure and electrical properties of lead-free $Na_{0.4}K_{0.1}Bi_{0.5}TiO_3$ ceramics	Ceramics International	43	12599-12604	2017
27	S. M. Abdul Kader; D. E. Jain Ruth; M. Veera Gajendra Babu; B.Bagyalakshmi; **B.Sundarakannan,**	Significant enhancement in magnetization value of the K-doped 0.75 $BiFeO_3$-0.25$BaTiO_3$ lead-free multiferroics	Materials Letters	190	270-272	2017
28	D. E. Jain Ruth; M.Muneeswaran; N.V.Giridharan; **B.Sundarakannan,**	Structural and electrical properties of bismuth magnesium titanate substituted lead-free sodium bismuth titanate ceramics	Journal of Materials Science: Materials in Electronics	7	7018-7023	2016
29	D. E. Jain Ruth; M.Muneeswaran; N.V.Giridharan; **B.Sundarakannan,**	Enhanced electrical properties in Rb-substituted sodium bismuth titanate ceramics	Applied physics A-Materials Science & Processing	122	502	2016
30	D. E. Jain Ruth; **B.Sundarakannan**,	Role of strain and lattice distortion on ferroelectric and piezoelectric properties of bismuth magnesium zirconate substituted sodium bismuth titanate ceramics	Journal of Materials Science: Materials in Electronics	27	3250-3257	2016

31	B.Bagyalakshmi; M. Veera Gajendra Babu; **B.Sundarakannan**; S.Kalavathi; V.Sridharan; G.Amarendra,	Converse magnetoelectric effect in $NiFe_2O_4/BaTiO_3$ heterostructure by electric field induced inter-ferroelectric phase transition	Materials Letters	170	48-52	2016
32	D. E. Jain Ruth; **B.Sundarakannan**	Structural and Raman spectroscopic studies of poled lead-free piezoelectric sodium bismuth titanate ceramics	Ceramics International	42	4775-4778	2016
33	D. E. Jain Ruth; S. M. Abdul Kader; M.Muneeswaran; N.V.Giridharan; D. Pathinettam Padiyan; **B.Sundarakannan**	Substitutional effect of bismuth ferrite on the electrical properties of sodium bismuth titanate ceramics	Journal of Materials Science: Materials in Electronics	27	407-413	2016
34	D. E. Jain Ruth;S. M. Abdul Kader; M.Muneeswaran; N.V.Giridharan; D. Pathinettam Padiyan; **B.Sundarakannan**	Structural and electrical properties of $(1-x)(Na_{0.5}Bi_{0.5})TiO_3$-$xBi(Mg_{0.5}Zr_{0.5})O_3$ lead-free piezoelectric ceramics	Ceramics International	42	3330-3337	2016
35	M.Muthuramalingam; D. E. Jain Ruth; M. Veera Gajendra Babu; N.Ponpandian; D.Mangalaraj; **B.Sundarakannan**	Isothermal grain growth and effect of grain size on piezoelectric constant of $Na_{0.5}Bi_{0.5}TiO_3$ ceramics	Scripta Materialia	112	58-61	2016
36	D. E. Jain Ruth;M. Veera Gajendra Babu; S. M. Abdul Kader; B.Bagyalakshmi; D. Pathinettam Padiyan; **B.Sundarakannan**	Role of rubidium cation substitution in the A-site of sodium bismuth titanate ceramics	Journal of Materials Science: Materials in Electronics	26	6757-6761	2015
37	M.Sharmila;S. M. Abdul Kader; D. E. Jain Ruth;M. Veera Gajendra Babu; B.Bagyalakshmi; R. T. Ananth Kumar; D. Pathinettam Padiyan; **B.Sundarakannan**	Effect of cobalt substitution on the optical properties of bismuth ferrite thin films	Materials Science in Semiconductor Processing	34	109-113	2105
38	M. Veera Gajendra Babu; S. M. Abdul Kader; M.Muneeswaran; N.V.Giridharan; D. Pathinettam Padiyan, **B.Sundarakannan**	Enhanced piezoelectric constant and remnant polarisation in K-compensated sodium potassium bismuth titanate	Materials Letters	34	6757-6761	2015
39	S.T.Nishanthi, **B.Sundarakannan**; E.Subramanian; D. Pathinettam Padiyan,	Enhancement in hydrogen generation using bamboo like TiO_2 nanotubes fabricated by a modified two-step anodization technique	Renewable Energy	146	109-113	2015
40	S.T.Nishanthi; S.Iyyapushpam; **B.Sundarakannan**, E.Subramanian; D. Pathinettam Padiyan,	Plasmonic silver nanoparticles loaded titania nanotube arrays exhibiting enhanced photoelectrochemical and photocatalytic activities	Journal of Power Sources	77	81-83	2015
41	S.T.Nishanthi; E.Subramanian; **B.Sundarakannan**; D. Pathinettam Padiyan,	An insight into the influence of morphology on the photoelectrochemical activity of TiO_2 nanotube arrays	Solar Energy Materials and Solar cells	274	300-307	2015
42	S.T.Nishanthi,; S.Iyyapushpam; **B.Sundarakannan**; E.Subramanian; D. Pathinettam Padiyan,	Significance of crystallinity on the photoelectrochemical and photocatalytic activity of TiO_2 nanotube arrays	Applied Surface Science	132	885-893	2015

43	S.T.Nishanthi; S.Iyyapushpam; **B.Sundarakannan**; E.Subramanian; D.Pathinettam Padiyan	Inter-relationship between extent of anatase crystalline phase and photocatalytic activity of TiO_2 nanotubes prepared by anodization and annealing method	Separation and Purification Technology	313	204-209	2014
44	R. T. Ananth Kumar; P.Chithra Lekha; **B.Sundarakannan** ; D.Pathinettam Padiyan	Influence of thickness on the optical properties of amorphous $GeSe_2$ thin films: analysis using Raman spectra, Urbach energy and Tauc parameter	Philosophical Magazine	131	449-454	2014
45	P.B. Amama, D. Zemlyanov, **B. Sundarakannan**, R. S. Katiyar and T. Fisher	XPS and Raman Characterisation of Single-Walled Carbon Nanotubes Grown From PretreatedFe_2O_3nanoparticles	Journal of Physics D: Applied Physics	41	165306	2008
46	J. Kennedy, **B. Sundarakannan**, R.S. Katiyar, A. Markwitz, Z. Li, and W. Gao	Raman Scattering investigation of hydrogen and nitrogen ion implanted ZnO thin films	Current Applied Physics	8	291-294	2008
47	S.R. Das, P. Dobal, **B. Sundarakannan**, R.R. Das, and R.S. Katiyar	Raman scattering study of Zr-substituted $Ba_4Ti_3O_{12}$ Ceramics	J. Raman Spectros.	38	1077-1081	2007
48	H.K. Yadav, V. Gupta, K. Sreenivas, S.P. Singh, **B. Sundarakannan** and R.S.Katiyar	Low frequency Raman scattering from acoustic phonons confined in ZnO nanoparticles	Phys. Rev. Lett.	97	085502	2006
49	**B. Sundarakannan**, K. Kakimoto and H. ohsato	Ti and V substitutions in $KNbO_3$ ceramics: Dielectric Study	Ferroelectrics	302	175	2004
50	**B. Sundarakannan**, K. Kakimoto and H. ohsato	Frequency and temperature dependent dielectric and conductivity behavior of $KNbO_3$ ceramics	Journal Applied Physics	94	5182	2003
51	**B.Sundarakannan**, T.R.Ravindran, R.Kesavamoorthy and S.V.M. Satyanarayana	High pressure Raman scattering studies on BaFCl	Solid state communicatio n	124	385	2002
52	**B.Sundarakannan** R.Kesavamoorthy, J.Adelene Nisha, V.Sridharan and T.Sivakumar	Antiferroelectric-to-paraelectric transition in BaFCl.	Physical Review B	57	11632	1998
53	**B. Sundarakkannan** and R. Kesavamoorthy	Anharmonic behaviour of BaFCl using Raman scattering.	European Physical Journal B	3	179	1998
54	R.Kesavamoorthy, G.V.N. Rao, **B.Sundarakkannan**, G.Ghosh and V.S.Sastry	Powder diffraction data of BaFCl.	Powder Diffraction	12	255	1997
55	R.Kesavamoorthy, **B.Sundarakkannan**, G.V.Narasimha Rao, and V.S.Sastry	Thermal effect on BaFCl: High-temperature X-ray diffraction.	Thermochimic a Acta	307	185	1997
56	**B.Sundarakkannan**, R.Kesavamoorthy, N.Dharmarasu and V.S. Sastry	Raman scattering investigation on heat-treated BaFCl	Physica Status Solidi (A)	177	567	2000
57	N.Dharmarasu, **B.Sundarakkannan**, R.Kesavamoorthy, K.G.M.Nair and J. Kumar	Raman scattering studies in H^+ and He^+ implanted n-GaAs	Nuclear Instruments and Methods in Physical Research B	145	395	1998
58	N.Dharmarasu, **B.Sundarakkannan**, R.Kesavamoorthy, K.G.M.Nair and J. Kumar	Investigations on H^+ and He^+ implantation effects in n-InP using Raman scattering	Physica B	262	329	1999

59	K.L.Narayanan, K.P.Vijayakumar, K.G.M.Nair, **B.Sundarakkannan**, G.V.Narasimha Rao and R. Kesavamoorthy	Raman scattering and optical absorption studies on Ar^+ implanted CdS thin films	Nuclear Instruments and Methods in Physical Research B	132	61	1997
60	K.L. Narayanan, K.P. Vijayakumar, K.G.M. Nair, **B. Sundarakannan**, and R. Kesavamoorthy	Raman scattering studies of oxygen implanted CdS thin films prepared by vacuum evaporation	Nuclear Instruments and Methods in Physical Research	160	471	2000
61	M.Udhayasankar, S.Arulkumaran, J.Arokiaraj, P.Santhanaraghavan, **B.Sundarakannan**, J.Kumar, P.Ramasamy, K.G.M. Nair, P.Magudapathy, N.S. Thampi and K. Krishan	Effect of irradiation on the micro hardness of the LEC grown semi-insulating GaAs single crystals	Journal of Nuclear Materials	225	314	1995