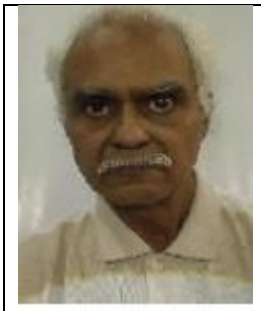
BIO-DATA



Recent Photograph

1.	**Name**	RAMNATH P R C AIYAR
2.	**Designation**	Professor (Contract)
3.	**Residential Address**	C-102, Pooja CHS, Opp. IIT maingate, Powai Mumbai 400076
4.	**Date of birth**	17-09-1954
5.	**Total Experience**	33
i.	**Teaching**	33
ii.	**Industrial**	-
6.	**Qualifications**	

Exam Passed	Year	Institution/ University	Branch/Specialization	Percentage/CGPI
B.Sc	1974	University of Poona	PCM	78.4%
M.Sc	1976	IIT Bombay	Physics	64.75%
Ph.D	1982	IIT Bombay	Physics	

Additional Qualification:

7. Employment Record

Institution	Year (From To)	Designation

8. Undergraduate / Postgraduate Teaching Experience and Subjects Taught

Subjects Taught at UG level

Sr.No.	Name of Subject	Semester

Subjects Taught at PG level

Sr.No.	Name of Subject	Semester
1	Introduction to nanotechnology (IITB)	2008(FH) to 2013(FH)
2	Research Methodology (part of course)	2017(SH)
3	RF and Microwave engineering	2018(FH)

9. Research Experience

10. Research Funding / Consultancy Services:

Sr.No.	Name of the Company	Address	Product	Consulting Service	Consulting Fees	Period

Research Grants:

Serial No.	Name of Funding Organization	Amount of grant (Rs.)	Period	Co-investigators if, any	Name of Research Project
1	CEL, Sahibabad	4.00 lakhs	Jun 1983 to Nov. 1985	Prof. C.M. Srivastava	Development of microwave characterisation facilities
2	DTSR/ DRDO	18.19 lakhs	Oct. 1985 to	Prof. C.M. Srivastava	Studies on microwave absorbing paints

				May 1989		
	3	ADA, Bangalore	9.77 lakhs	July 1988 to June 1993	Prof. C.M. Srivastava	Radar absorbing materials- design, development and evaluation
	4	DTSR	14.56 lakhs	Feb 1990 to Dec. 1994	Prof. C.M. Srivastava	Development of materials for magnetostatic wave applications
	5	BRNS	5.70 lakhs	Jun 1992 to Jan 1996	-	Design and development of microwave resonators and filters based on high Tc superconductors
	6	DTSR	7.33 lakhs	Jun 1993 to March 1996	Dr. N. Venkataramani and Prof. Shiva Prasad	Thin film ferrite materials for mm wave applications
	7	DST/ IDP	9.72 lakhs	Nov. 1993 to March 1997	Dr. N. Venkataramani	Design and fabrication of a low cost vibrating sample magnetometer
	8	Motorola	USD 90,000	Jun 1996 to 2003	Prof. Shiva Prasad and Dr. N. Venkataramani	High frequency properties of magnetic thin films
	9	DTSR	12.88 lakhs	April 1998 to March 2001	Dr. N. Venkataramani and Prof. Shiva Prasad	Study of GMR and microwave GMR $LaMnO_3$
	10	DTSR	17.48 lakhs	April 1998 to March 2001	Dr. N. Venkataramani and Prof. Shiva Prasad	Spin valves multilayers for sensor applications
	11	NMRL	3.22 lakhs	March 1999 to March 2000	Dr. N. Venkataramani	Studies of dielectric and magnetic properties of composites at microwave frequencies
	12	DTSR	16.56 lakhs	Jun 2000 - Jun 2002	Dr. S.N. Merchant	The finite difference time domain method for solving electromagnetic field problems
	13	DTSR	22.94 lakhs	Aug. 2000- Aug. 2003	Dr. N. Venkataramani and Prof. Shiva Prasad	Study of nanocrystalline spinel ferrites prepared by the rf sputtering technique

	14	DRDO	15.80 lakhs	Nov 2009 – Jun 2011	Dr. N Venkataramani	Physics Based Approach for Modeling of Electromagnetic Wave Absorbers
	15	DST	30.75 lakhs	Oct 2010 – Oct 2013	Dr. N. Venkataramani and Prof. Shiva Prasad	The study of microwave losses in ferrite thin films for applications in meta materials
	16	DRDO	28.73 lakhs	Feb 2011 – Feb 2014	Dr. N. Venkataramani and Prof. Shiva Prasad	High density tape cast ferrite thick films for microwave applications
	17	DST-RFBR	23.07 lakhs	Dec 2012 – Dec 2014	Prof. Shiva Prasad and Dr. N. Venkataramani	Development and Study of UHF ferrite thin films for high speed information processing

Technical Collaboration / Lab Funding with Industries

Sr.No.	Name of the Funding Organization	Type of Support	Amount (Rs.)	Year

11. Professional Societies Fellowship / Membership **NIL**

12. Achievements / Awards / Position -

13. Projects guided in UG/PG level **(All at IITB or other college)**

S. No	Name of the student/ research scholar	Title of Thesis	Doctorate or Master's level	Year of completion	Other guides, if any
1	S. M Gulwadi	Microwave absorbing paints	Master's-Materials Science	1987	Prof. C.M. Srivastava
2	S. Uma	Microwave absorbing paints	Master's-Materials Science	1988	Prof. C. M Srivastava
3	S. Uma	Electromagnetic wave absorption in substituted barium hexaferrites	Doctorate-Metallurgical Engineering and Materials Science	1994	Prof. C.M Srivastava and Prof. M.J. Patni (Late)

	4	P. Divekar	Fabrication and evaluation of 1-2-3 superconductors based cylindrical cavity	Masters-Metallurgical Engineering and Materials Science	1994	Prof. Om Prakash	
	5	Akhtar Uz Zaman	Synthesis of fine hexaferrite powder for high energy product magnet application	Masters-Metallurgical Engineering and Materials Science	1996	Prof. D. Bahadur and M.J. Patni (late)	Prof
	6	A. Bhattacharya	Levitation studies in 1-2-3 cuprate superconductors	Masters-Metallurgical Engineering and Materials Science	1996	Prof. Om Prakash	
	7	S. M Abbas	Synthesis and evaluation of microwave absorbing paint	Masters-Metallurgical Engineering and Materials Science	1997	Prof. Om Prakash	
	8	T.K. Chongdar	Microwave response of particulate materials	Doctorate-Metallurgical Engineering and Materials Science	1998	Prof. M.J. Patni (late)	
	9	V. Sreedevi	Fabrication and evaluation of microwave absorbing tiles	Masters-Metallurgical Engineering and Materials Science	1999	Prof. Om Prakash	
	10	Ajay K Samantaray	Processing of dielectric behaviour of the titanate based ceramcs	Masters-Metallurgical Engineering and Materials Science	2001	Prof. A.R. Kulkarni	

	11	Santosh Kumar Mohapatra	Synthesis and dielectric behaviour of Barium Titanyl oxide	Masters-Metallurgical Engineering and Materials Science	2003	Prof. A.R. Kulkarni	
	12	Pradip Kumar Mandal	Synthesis and study of sintered ferrites for rf absorption tiles	Masters-Metallurgical Engineering and Materials Science	2005	Prof. Om Prakash	
	13	V R K Bhagavatula	Boundary element modeling and validation of cathodic perotection systems	Masters-Corrosion Science and Engineering	2005	Prof. V S Raja	
	14	P Thirupathi Reddy	Optimization of anode locations in cathodic protection	Masters-Corrosion Science and Engineering	2009	Prof. V S Raja	
	15	Avradeep Pal	Substrates for metamaterials	Masters-Metallurgical Engineering and Materials Science	2010	Prof. N Venkataramani	
	16	H B Maheshwari	Tape casting of fine grain garnets	Masters-Metallurgical Engineering and Materials Science	2010	Prof. N Venkataramani	
	17	Shrikant Meshram	High density tape cast yttrium iron garnet	Masters-Metallurgical Engineering and Materials Science	2011	Prof. N Venkataramani	

	18	Abhishek Rathi	Metamaterials at microwave frequencies	Masters-Metallurgical Engineering and Materials Science	2012	Prof N Venkataramani	
	19	Shriraj Khalane	Application of FDTD techniques to computational electromagnetics	Masters-Aerospace engineering	2012	Prof G R Shevare	
	20	Hoshedhar Sidhwa		Doctorate Electrical Engineering	2017	Prof. S V Kulkarni	
	21	Ritu Rashmi	Reconfigurable Metamaterial Antenna on Silicon Substrate	Doctorate Electrical Engineering	2017	Prof S P Duttagupta	
	22	B Bhoi	Growth and characterization of YIG based thin films for metamaterial and magneto-optical application.	Doctorate-CRNTS	2017	Prof. N Venkataramani, Prof. . Shivaprasad	
	23	M Maoyafikuddin	Studies on nanodielectrics with improved dielectric and electrical characteristics	Doctorate-CRNTS	ongoing	Prof. S V Kulkarni	
	24	Jai Gaitonde	Study of OPFET photodetector	Masters-ECE from Goa college of Engineering	2010	Prof Rajesh Lohani, GCE	
	25	Prathamesh Bhatt	Effect of Capacitive loading on slot loaded Dual Band Microstrip antenna	Masters-ECE from Goa college of Engineering	2011	Prof Rajesh Lohani, GCE	

	26	Awij Alam Ramjan Sheikh	Performance Enhancement of Rectangular Microstrip Patch Antenna Using Metamaterial Structure	Masters-ECE from Goa college of Engineering	2012	Prof Rajesh Lohani, GCE	
	27	Vrushali Kelkar	Characteristaion of optically controlled Field effect transistor	Masters-ECE from Goa college of Engineering	2012	Prof Rajesh Lohani, GCE	
	28	Shrinivas Joshi	Study of modulation doped field effect Transistor	Masters-ECE from Goa college of Engineering	2012	Prof Rajesh Lohani, GCE	

14. Short Term Training Programmes attended
STTP/Workshop/Seminars/Conferences attended:

15

- **List of Journal Papers Published (list in IEEE format)**

Refereed Journals

1 C.M.Srivastava, Om Prakash and R.Aiyar: Permeability spectrum of garnets, Mater. Sci. Bull. (India), 1, 49 (1979)
2 Om Prakash, C.M Srivastava and R. Aiyar: Dependence of permeability spectrum on microstructure, Jour. Magn.and Magn Mater. 15-18, 1521 (1980)
3 C.M.Srivastava, C.Srinivasan and R.. Aiyar: Exchange constants in ferrimagnetic garnets, Mater Sci. Bull. (India), 2, 187 (1980)
4 G.Srinivasan, Om Prakash and R.Aiyar: Domain rotation and wall displacement contribution to permeability in YIG, Phys. Stat. Solidi(a), 59, 301 (1980)
5 C.M.Srivastava, Om Prakash And R.Aiyar: Magnetic relaxation in polycrystalline garnets, Phys. Stat. Solidi(a), 64, 787 (1981)
6 C.M.Srivastava, C.Srinivasan and R.. Aiyar: Exchange constants in ferrimagnetic garnets, Jour. Appl. Phys. 53, 781 (1982)
7 N.Venkataramani, R.Aiyar, P.S. Sekhar and C.M. Srivastava: Dependence of microstructure on process variables in Mn-Zn ferrites, Bull. Mater. Sci. (India), 6, 65 (1984)
8 C.M.Srivastava, C.Srinivasan and R.Aiyar: Influence of spin-orbit coupling and lanthanide contraction on exchange in rare earth garnets, Bull. Mater. Sci. (India), 6 1069 (1984)
9 C.M.Srivastava and R.. Aiyar: Spin wave stiffness in ferrimagnetic garnets, Jour. Phys. C(Solid State), 20, 1119 (1987)
10 Om Prakash, N.Venkataramani, S.N. Bhatia, R.Aiyar, R. Walia and C.M. Srivastava: Phase dependent superconductivity in the Y-Ba-Cu-O system, Pramana Jour. Phys. 29, 1103 (1987)
11 K.D.Patil, S.K. Maiti, S. Mahapatra and R.Aiyar: Use of infinite elements for potential problems, Jour. IETE 38, 299 (1992)
12 A Bhattacharya, R. Aiyar and Om Prakash: Levitation studies on 1-2-3- cuprate superconductors: Asian Journal of Physics 6, 196(1997)
13 S.M. Abbas, R. Aiyar and Om Prakash: Synthesis and microwave absorption studies of ferrite paint: Bull. Mater. Sci. 21, 263 (1998)

	14	R.P.R.C Aiyar: Microwave absorbers based on hexaferrites: Microwave and Optical Technology Letters, 23(5), 321, (1999)
	15	J. Dash, R.P.R.C. Aiyar, Shiva Prasad, N. Venkataramani, S.K. Date, S.D. Kulkarni, Pran Kishan and Nitendra Kumar: The effect of Zn on the defects in sputter deposited Li-Zn ferrite films: Jour. Magn and Magn. Mater. 226-230, 1636 (2001)
	16	Sandeep Butee, Ajit Kulkarni, Om Prakash, R P.R.C. Aiyar, Sumesh George and Mailadi Sebastian: High Q Microwave Dielectric Ceramics in (Ni1-x Znx)Nb2O6 System, J. Am. Ceram. Soc., 92 [5] 1047–1053 (2009)
	17	Sandeep Butee, Ajit R. Kulkarni, Om Prakash, R.P.R.C. Aiyar, K. Sudhindran, K.C. Raju James: R.F. and Microwave Dielectric Properties of (Zn0.95M0.05)2TiO4, (M = Mn2+,Co2+, Ni2+ or Cu2+) Ceramics Materials Science and Engineering B,168, 151 (2010)
	18	Sandeep Butee, Ajit Kulkarni, Om Prakash, R.P.R.C. Aiyar, K. Sudhindran, K.C. James Raju: Effect of Lanthanide Ion Substitution on R.F. and Microwave Dielectric Properties of BiNbO4 Ceramics, Journal of Alloys and Compounds 492, 351 (2010)
	19	Sandeep Butee, Ajit R. Kulkarni, Om Prakash, R.P.R.C. Aiyar, Ishan Wattamwar, Durgesh Bais, K. Sudheendran, K.C. James Raju, Materials Science and Engineering: B 176(7), 567,(2011)
	20	Prathamesh Bhat, R.B. Lohani, R.P.R.C. Aiyar, Effect of Capacitive loading on slot loaded Dual Band Microstrip antenna, International Journal of Scientific and Research Publications, 2, (2012)- published online
	21	B Bhoi, N Venkataramani, R.P.R.C. Aiyar, Shiva Prasad:, FMR studies on polycrystalline YIG thin films deposited using pulsed laser, IEEE Trans. MAG-49,Mar 2013, 990
	22	B Bhoi, T Cliff, I S Maksymov, M Kostylev, R Aiyar, N Venkataramani, S Prasad and R L Stamps, Study of photon-magnon coupling in a YIG film split ring resonant system, J Appl. Phys. 116, 243906, 2014
	23	B Bhoi, B Sahu, R Aiyar, N Venkataramani and S Prasad, IEEE Trans. MAG (accepted for publication)
	24	H H Sidhwa, R P and S R C Aiyar V Kulkarni, Electromagnetic Cloaking of Arbitrarily Shaped Bodies in Three Dimensions using Coordinate Transformation: Physics Letters A – Accepted for publication
	25	H H Sidhwa, R P Aiyar and S V Kulkarni Electromagnetic cloaking in convex and concave media with surface modeled as a parameterised function, Opt. Express 23(12), 15641-15656 (2015)
	26	H H Sidhwa, R P and S R C Aiyar V Kulkarni, Electromagnetic Cloaking in higher order spherical cloaks:: Appl. Phys. B,123,(Jun 2017)
	27	B Bhoi, N Venkataramani, R Aiyar, S Prasad, M Kostylev: Observation of high nehgative uniaxial anisotropy in pulsed laser ablated yttrium iron garnet thin films, Manuscript under preparation
	28	B Bhoi, T cliff, I S Maksymov, M Kostylev, R Aiyar, N Venkataramani, S Prasad and R L Stamps, Effects ofoxygen partial pressure on magnetic properties of YIG thin films prepared by PLD, Manuscript under preparation
	29	R. Rashmi, S. P. Duttagupta, R.P.R.C. Aiyar, M. N. Gandhi and K. P. Ray, "A Novel Dual Band High Bandwidth Antenna with ground plane of radius smaller than λ/4", Manuscript under preparation
	30	R. Rashmi, G. Rana, S. P. Duttagupta, R.P.R.C. Aiyar, M. N. Gandhi, J. Watve and S. Prabhu, "Silica-PDMS Nanocomposite with Tunable Dielectric Constant for Multiband Frequency Selective Surface-", Manuscript under preparation
	31	Ajit Kulkarni Rajan Singh, R.P.R.C. Aiyar, Induction of Magnetic Properties in $K_{0.5}Na_{0.5}NbO_3$ ceramic due to Manganese doping: communicated to Jour. Mag.Mag Mater
16	**Conferences**	
	1	C.Srinivasan, Om Prakash and R.Aiyar: Susceptibility critical exponents for some mixed garnets, Proc. Nucl.Phys Solid State Phys. Symp. 20C, 418 (1977)

2 C.M.Srivastava, C.Srinivasan and R.Aiyar: Exchange constants in Yttrium and gadolinium garnets, Proc. Nucl. Phys Solid State Phys. Symp. 21C, 595 (1978)

3 Om Prakash and R.Aiyar: Correlation between damping constants β and λ in polycrystalline garnets, Proc. Nucl. Phys Solid State Phys. Symp. 22, 546 (1979)

4 C.M.Srivastava, M.J.Patni, R.Aiyar and N.S.H.Rao: Magnetic resonance studies of $Dy_xY_{3-x}Fe5O_{12}$ and $Gd_xY_{3-x}Fe5O_{12}$ below and above Neel temperature, Proc. Nucl.Phys Solid State Phys. Symp.24C, 421 (1981)

5 C.M.Srivastava and R.. Aiyar: Hot pressed magnetic materials, Proc. National Symposium on Instrumentation, Bangalore (1982) L1 - Invited talk

6 N.Venkataramani, R.Aiyar, P.S. Sekhar and C.M. Srivastava: Modified technique of hot pressing Mn-Zn Ferrites for recording head applications, Proc. International Symp. On Ceramics, Bangalore 6.12 (1982)

7 R.Aiyar, N.Venkataramani and C.M.Srivastava: Effective anisotropy in polycrystalline ferrrites, Proc. Solid State Phys. Symp. 28C, 170 (1985)

8 M.J.Patni, N.Venkataramani and R.Aiyar: Clustering of Fe^{2+} ions in high permeability ferrites, Proc. Solid State Phys. Symp. 28C, 277 (1985)

9 N.Venkataramani, R.Aiyar, and C.M. Srivastava: Studies on sintering mechanism and texturisation in hot pressed $(MnZnFe)Fe_2O_4$, Proc. International Conf. Ferrites-4, Advances In Ceramics, 15, 193 (Amer. Ceram. Soc., 1986)

10 N.Venkataramani, R.Aiyar, M.J.Patni and C.M.Srivastava: Processing of controlled microstructure Mn-Zn ferrites for recording head applications, Proc. International conf. On Powder Metallurgy, 225 (IBH 1986)

11 R.S. Parolia and R.Aiyar: Development of YIG material for 4/6 Ghz communication band circulators, Proc. 1st Asia Pacific microwave Conf. (New Delhi 1986), 680 (TMH 1988)

12 R.Aiyar, N.S.H. Rao, M.J. Patni and C.M.Srivastava: Synthesis of ferrite rods for phase shifter applications: Proc. Seminar cum workshop on Advances in Ceramics, BHU, Varanasi, 29 (1988)

13 N.S.H. Rao, R.Aiyar, M.J. Patni and C.M.Srivastava: Synthesis and characterisation of dielectric materials for microwave applications: Proc. Seminar cum workshop on Advances in Ceramics, BHU, Varanasi, 31 (1988)

14 R.Aiyar, N.S.H. Rao, M.J. Patni and C.M. Srivastava: Development of ferrites and dielectrics for phase shifter applications, Proc. 2nd Asia Pacific Microwave conf. Beijing, 269 (1988)

15 R.Aiyar, N.S.H.Rao, S.A.Rane and C.M. Srivastava: Ba-Co-Ti based ferrite impregnated polyurethane paints as microwave absorbers, Advances in Ferrites, Proc. International Conf. Ferrites - 5, 955 (Oxford-IBH 1989)

16 G.M.Ganu, R.Aiyar and P.D.Prabhavalkar: Growth and characterisation of electrochemically formed thin film ferrite, Advances in Ferrites, Proc. International Conf. Ferrites - 5, 539 (Oxford-IBH 1989)

17 N.S.H.Rao, S.A.Rane and R.Aiyar: Effect of Fe^{2+} ions on magnetic loss in ferrimagnetic garnets, Advances in Ferrites, Proc. International Conf. Ferrites - 5, 1001 (Oxford-IBH 1989)

18 R.Aiyar and N.Venkataramani: Design of coils for vibrating sample magnetometer: Proc. Solid State Phys. Symp. 37C, 527 (1994)

19 N. Venkataramani and R. Aiyar : Results on an indigenous vibrating sample magnetometer, Proc. Solid State Phys. Symp. 40C, 40(1997)

20 R. Aiyar and N. Venkataramani: Optimisation of pickup coils for a vibrating sample magnetometer, Proc. Solid State Phys. Symp. 40C, 119 (1997),

21 Antony Ajan, N. Venkataramani, Shiva Prasad, S. N. Shringi, R. Aiyar, A.K. Nigam and R. Pinto: Proc. Solid State Phys. Symp. 40C, 152 (1997)

22 P. Ilavarasu, V.S. Raja, S.N. Soman, R. Aiyar and N. Venkataramani: Hydrogen content-phase transformation correlation to hydrogen embrittlement behaviour of a high manganese stainless steel: Proc. Annual Technical Meeting of the Indian Institute of Metals, Bangalore, 1998, p –163

23 J. Dash, R.P.R.C. Aiyar, Shiva Prasad, N. Venkataramani, S.K. Date, S.D. Kulkarni, Pran Kishan and Nitendra Kumar: The effect of Zn on the defects in

	sputter deposited Li-Zn ferrite films: Proc. International conference on magnetism -2000, Recife Brazil 24 Prasanna D. Kulkarni, R.P.R.C. Aiyar, Shiva Prasad, N. Venkataramani, R. Krishnan, Wenjie Pang, Ayon Guha, R.C. Woodward and R.L. Stamps: superparamagnetism in nanocrystalline copper ferrite thin films Proc. International Conf. on Materials for Advanced Technology-2005 at Singapore – paper D-10-OR-40 25 R.P.R.C. Aiyar: Improvements in boundary element solutions, Proc. XII International Symposium on electromagnetic fields in mechatronics, electrical and electronic engineering Baiona Spain 15-17 Sept 2005 , p-EE-1.1(6 pages) 26 S.V Kulkarni, R.P.R.C. Aiyar and R.K. Shevgaonkar: Computational Electronagnetics- Issues, Trends and Applications, Proc. XII International Symposium on electromagnetic fields in mechatronics, electrical and electronic engineering Baiona Spain 15-17 Sept 2005 , p-CE-1.4(6 pages) 27 S Kumar, G.B. Kumbhar, S.V Kulkarni, R.P.R.C. Aiyar and S.V Desai: Electromagnetic forming-A case study of coupled magneto-mechanical formulation, Proc. XII International Symposium on electromagnetic fields in mechatronics, electrical and electronic engineering Baiona Spain 15-17 Sept 2005 , p-EE-2.2(6 pages) 28 H H Sidhwa, R P R C Aiyar and S V Kulkarni: Ray tracing of an arbitrary cloak in two dimensions, Proc of PIERS proceedings Stockholm, Aug 2013. Final version of proceedings not published 29 B Bhoi, N Venkataramani, R P R C aiyar, Shiva Prasad, Mikhail Kostylev and R L Stamps, Frequency dependent FMR studies on pulsed laser ablated YIG films deposited on (111) GGG substrate, AIP Conf proceedings 1512, 692, 2013
17.	**Books/Reports/General articles etc.** -
18.	**Invited Lectures in FDP/ STTP** 1 Participated in a short term course entitled " Microwave circulators- materials and devices" for Vintek RF products , Bangalore between Nov. 11-14, 1994 at gave three lectures on Scattering Matrix Analysis of ferrite devices and computer aided design of circulators 2 Participated in School on "Magnetism: Modern methods and materials" organised by The Inter University Consortium for DAE facilities and BARC at Goa University from 13-25 Oct. 1997 at Goa and gave three lectures on Microwave ferrites, microwave characterisation and permanent magnet materials. 3 Participated in a QIP sponsored short term course on Recent developments in Magnetic materials organized by ACRE between Jun. 15-27, 1999 and gave six lectures in magnetic measurements, microwave properties and CAD in magnetic materials 4 Participated in a short term course on "Numerical methods in Electromagnetics: Theory and Applications" organized by Dept. of Electrical Engineering IIT Bombay between 13th to 16th Dec. 2004 and gave four lectures. 5 Participated in a short term course on "Computational Electromagnetics" organized by Dept. of Electrical Engineering IIT Bombay between 21st to 25th Nov. 2005 and gave five lectures. 6 Participated in IETE sponsored CEP on "Computational electromagnetics- Basic and applied" organized by S V University, Tirupati from 23 to 25 Jan 2008 and gave four lectures 7 Participated in a DRDO sponsored CEP on "electromagnetic stealth for combat vehicles, NSTL Vishakapatanam, Nov 10 to 14th 2008 and gave three lectures 8 Participated in worshop on stealth organised by IIT Bombay and gave 5 lectures in Nov 2017 9 Participated in GIAN CEP/QIP course on magetoelectric materials organised by IIT Bombay in April 2018 and gave three lectures Continuing education programmes conducted :

	1. Computational Methods in Electrochemical corrosion, Sep 10 -12, 2008 organized by CEP cell IIT Bombay- coordinator and delivered several lectures 2. Advanced computational electromagnetics-I, Jun 9 – 11, 2010 organized by SAC Ahmedabad- Co-coordinator and delivered several lectures 3. Advanced computational electromagnetics-II, Jun 14 – 16, 2010 organized by SAC Ahmedabad- Co-coordinator and delivered several lectures 4. Numerical methods in electromagnetic theory and applications, organized by CDAC, Bangalore, Jun 14 -16, 2011- Co-coordinator and delivered several lectures 5. Computational electromagnetics and radar cross section, Organized by IIT Bombay and Defence Laboratory Jodhpur, Sponsored by DRDO under ERIPR scheme, Defence Laboratory, Jodhpur, Sep 24 – 28, 2012- overall coordinator and gave several lectures 6. Workshop on ESR Spectroscopy: Techniques and Applications, Feb 4 – 6, 2013 organized by CEP cell IIT Bombay- coordinator and delivered lectures
19.	**International Conference Technical Program Committee Member / Reviewer**
20.	**Patents** R. Rashmi, S. P. Duttagupta, K. P. Ray, P. Gandhi and R.P.R.C. Aiyar, "Three Dimensional Ka-band Lens-antenna using Microstereolithography process", Patent application number 3869/MUM/2013, filed in December 2013 (India).