

## Curriculum Vitae

**Dr.S.Moorthy Babu**

Professor  
Crystal Growth Centre  
Anna University  
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### Academic Performance

Sl.No.	Degree	University	Year of Passing	Subjects	Class / Grade Obtained
1	Ph.D.	Anna University	1993	Crystal Growth	Thesis on Growth, Kinetics and Characterization of some semiconducting materials developed by Electrocrystallization
2	M.Phil.	Anna University	1987	<b>Physics</b> [Chemical Physics]	First Class
3	M.Sc.	Madras University	1986	<b>Physics</b> Spl: Electronics	First Class <b>UNIVERSITY I RANK GOLD MEDAL</b>
4	B.Sc.	Madras University	1984	Main: <b>Physics</b> Mathematics Chemistry	First Class

## Professional Career

Sl.No	Designation & Office address	Period		Nature of duties/responsibilities	Reasons for leaving
		From	To		
1	<b>Professor</b> Crystal Growth Centre Anna University Chennai – 600 025	29-09-2008	Till date	Teaching and Research	Not Applicable
2	<b>Assistant Professor</b> Crystal Growth Centre Anna University Chennai – 600 025	29-09-2000	28-09-2008	Teaching and Research	Promoted as Professor
3	<b>Lecturer (Senior Grade)</b> Crystal Growth Centre Anna University Chennai – 600 025	26-09-1996	28-09-2000	Teaching and Research	Promoted as Assistant Professor
4	<b>Lecturer</b> Crystal Growth Centre Anna University Chennai – 600 025	26-09-1991	25-09-1996	Teaching and Research	Promoted as Lecturer (Senior Grade)

### Prizes, Medals, Awards, other Honours received.

First in the university level during M.Sc.

- \* JAGIRDAR OF ARNI MEDAL I 1986
- \* PROF.P.E.SUBRAMANI AYYAR COMMEMORATION MEDAL 1986
- \* **DR.K.S.KRISHNAN GOLD MEDAL 1986**
- \* DR.K.S.KRISHNAN MEMORIAL PRIZE 1986
- \* **JAWAHARLAL NEHRU MEMORIAL AWARD 1986**

YOUNG AUTHOR ATTRACTIVE PAPER, ICCG-9, 1989, JAPAN

YOUNG PHYSICIST AWARD 1991 (INDIAN PHYSICAL SOCIETY)

**STA FELLOWSHIP, JAPAN 1997-1999**

**ALEXANDER VON HUMBOLDT FELLOWSHIP, GERMANY, 2001**

IACG Prof.P.RAMASAMY AWARD, 2009

**ERASMUS MUNDUS ACADEMIC EXCHANGE FELLOWSHIP, ITALY,2010**

VISITING PROFESSOR, SHIZUOKA UNIVERSITY, JAPAN, 2011

ACTIVE RESEARCHER AWARD, ANNA UNIVERSITY, INDIA, 2012

**ERASMUS MUNDUS ACADEMIC EXCHANGE FELLOWSHIP, ITALY, 2013**

	All	Since 2009
Citations	<b>956</b>	<b>532</b>
h-index	<b>15</b>	<b>13</b>
i10-index	<b>29</b>	<b>17</b>

### List of Publications

1. Electrodeposition Kinetics of Gallium Arsenide  
S.Moorthy Babu, L.Durai, R.Dhanasekaran and P.Ramasamy  
Bull. Mater. Sci., 13 (1990) 41
2. Thin Film Deposition and Characterization of CuInSe<sub>2</sub>  
S.Moorthy Babu, R.Dhanasekaran and P.Ramasamy  
Thin Solid Films, 198 (1991) 269
3. Electrodeposition of CdSe by ASWP Technique  
S.Moorthy Babu, R.Dhanasekaran and P.Ramasamy  
Bull. Electrochem., 6 (1990) 732
4. Electrodeposition of CdTe by Potentiostatic and Periodic Pulse Technique  
S.Moorthy Babu, R.Dhanasekaran and P.Ramasamy  
Thin Solid Films, 202 (1991) 67
5. Electrodeposition of CdSe<sub>x</sub>Te<sub>1-x</sub> by Periodic Pulse Technique  
S.Moorthy Babu, T.Rajalakshmi, R.Dhanasekaran and P.Ramasamy  
J.Crystal Growth, 110 (1991) 423
6. New Materials for Optoelectronic Applications  
S.Moorthy Babu, R.Dhanasekaran and P.Ramasamy  
Physics Teacher 13 (1992) 41
7. Electrocrystallisation from an aqueous Solution  
S.Moorthy Babu and P.Ramasamy,  
Recent Trends in Crystal Growth, Vol.2 Ed.P.Ramasamy, Anna  
University, 1992.

8. Nucleation Phenomena during Electrochemical Phase Formation  
S.Moorthy Babu, R.Dhanasekaran and P.Ramasamy  
in "Nucleation and Atmospheric Aerosols" Ed. N.Fukuta and  
P.E.Wagner, Deepak Publishing Co., USA, 1992.
9. Electrocrystallization and characterisation of  $\text{CuInSe}_2$  thin film  
G.Sasikala, S.Moorthy Babu and R.Dhanasekaran  
Materials Chemistry and Physics, 42 (1995) 210
10. Photoconductivity studies of  $\text{CdSe}_x\text{Te}_{1-x}$  thin films as a function of doping  
concentration  
D.Ravichandran, F.P.Xavier, G.Sasikala and S.Moorthy Babu  
Bulletin of Materials Science 19 (1996) 437
11. Some aspects on the growth of lead molybdate single crystals and their  
characterisation  
N.Senguttuvan, S.Moorthy Babu and R.Dhanasekaran (Impact. 1.657)  
Materials Chemistry and Physics, 49 (1997) 120
12. Synthesis, crystal growth and mechanical properties of lead molybdate  
N.Senguttuvan, S.Moorthy Babu and C.Subramanian  
Materials Science and Engineering B, 47 (1997) 269
13. Etching and microhardness studies on lead molybdate single crystals  
N.Senguttuvan, S.Moorthy Babu and C.Subramanian  
J.Materials Science Letters, 16 (1997) 1274
14. Crystal growth and characterization of sucrose single crystals,  
R. Kumaresan and S. Moorthy Babu  
Materials Chemistry and Physics, Volume 49, (1997), 83-86
15. Czochralski growth and characterisation of lead tungstate single crystals  
N.Senguttuvan, Premila Mohan, S.Moorthy Babu and C.Subramanian  
J.Crystal Growth, 183 (1998) 391-397
16. A study of the optical and mechanical properties of  $\text{PbWO}_4$  single crystals  
N.Senguttuvan, Premila Mohan, S.Moorthy Babu and P.Ramasamy  
J.Crystal Growth, 191 (1998) 130-134
17. Bulk growth of InSb crystals for infrared device applications  
Premila Mohan, N.Senguttuvan, S.Moorthy Babu, P.Santhanaraghavan and  
P.Ramasamy  
J.Crystal Growth, 200 (1999) 96-100
18. Investigations on electrochemical growth and properties of mercury cadmium telluride  
semiconductor thin films for device fabrication  
R.Kumaresan, S.Moorthy Babu and P.Ramasamy  
J.Crystal Growth, 198-199 (1999) 1165-1169
19. Morphological studies on electrodeposited mercury telluride thin films  
R.Kumaresan, S.Moorthy Babu and P.Ramasamy  
Materials Chemistry and Physics, 59 (1999) 1-7

20. Defect distribution and morphology development of SiGe layers grown on Si(100) substrate by LPE  
A.M.Sembian, M.Konuma, I.Silier, A.Gutjahr, N.Rollbuhler, F.Banhart, S.Moorthy Babu and P.Ramasamy  
Thin Solid Films, 336 (1998) 116-119
21. Influence of cooling rate on the dislocations and related luminescence in the LPE SiGe layers grown on Si(100) substrates  
A. M. Sembian, F. Banhart, M. Konuma, J. Weber, S. Moorthy Babu and P. Ramasamy  
Thin Solid Films 372 (2000) 1-5
22. Interband transitions in BGO with different [M]/Bi ratio  
S.Moorthy Babu, K.Kitamura, S.Takegawa, H.Okushi, T.Shimizu and I.Baggio  
J.Optical Society of America B., 16 (1999) 1234-1239
23. X-ray photoelectron spectroscopic studies of electrochemically grown Mercury Cadmium Telluride semiconductor thin films  
R.Kumaresan, R.Gopalakrishnan, S.Moorthy Babu and P.Ramasamy  
Journal of Physics and Chemistry of solids, 61 (2000), 765-771
24. Quality assessment of Bridgman grown CdTe single crystals using double crystal X-ray Diffractometry (DCD) and Synchrotron radiation  
R.Kumaresan, R.Gopalakrishnan, S.Moorthy Babu, P.Ramasamy, Peter Zaumseil and Masaya Ichimura  
Journal of Crystal Growth, 210 (2000) 193-197
25. Growth of inclusion free InSb crystals by vertical bridgman method  
Premila Mohan, N.Senguttuvan, S.Moorthy Babu and P.Ramasamy  
J.Crystal Growth, 211 (2000) 207-210
26. Growth, phase analysis and mechanical properties of InSb<sub>1-x</sub>Bi<sub>x</sub> crystals,  
Premila Mohan, S. Moorthy Babu, P. Santhanaraghavan and P. Ramasamy  
Materials Chemistry and Physics, Volume 66, (2000), 17-21
27. Growth and characterization of Bi<sub>12</sub>SiO<sub>20</sub> and Bi<sub>12</sub>GeO<sub>20</sub> crystals  
S.Kumaragurubaran, S.Moorthy Babu, C.Subramanian and P.Ramasamy  
Indian Journal of Engineering and Materials Sciences Vol.7, No.5-6 (2000) 331
28. Defect analysis in Czochralski grown Bi<sub>12</sub>SiO<sub>20</sub> crystals  
S.Kumaragurubaran, S.Moorthy Babu, K.Kitamura, S.Takegawa, C.Subramanian and P.Ramasamy  
Journal of Crystal Growth Vol. 229 (2001) 233
29. Studies on Vertical Bridgman Grown InSb for Sensor Applications  
M.Haris, S.Moorthy Babu and R.Dhanasekaran  
Sensor Technology, 1 (2002) 301 – 304
30. Formation of an Interfacial MoSe<sub>2</sub> Layer in CVD grown CuGaSe<sub>2</sub> Based Thin film Solar cells  
R.Wurz, D.Fuertes Marron, A.Meeder, A.Rumberg, S.Moorthy Babu, Th.Shedel-Niedrig, U.Bloeck, P.Schubert Bischoff and M.Ch.Lux-Steiner  
Thin Solid Films, 431- 432 (2003) 398-402

31. Microstructural properties of CVD grown CuGaSe<sub>2</sub> based thin film solar cells  
D.Fuertes Marron, A.Meeder, U.Bloeck, P.Schubert Bischoff, N.Pfander, R.Wurz, S.Moorthy Babu, Th.Schedel-Niedrig and M.Ch.Lux-Steiner  
Thin Solid Films 431-432 (2003) 237-241
32. Surface and Bulk Properties of CuGaSe<sub>2</sub> Thin Films  
A.Meeder, D.Fuertes Marron, R.Wurz, S.M.Babu, T.Schedel-Niedrig, M.Ch.Lux Steiner, L.Weinhardt, R.Stresing, C.Heske and E.Umbach  
J.Phys. and Chem. Of Solids, 64 (2003) 1553–1557
33. Optimisation of the CBD CdS Deposition Parameters for ZnO/CdS/CuGaSe<sub>2</sub>/Mo Solar Cells  
M. Rusu, A. Rumberg, S. Schuler, S. Nishiwaki, R. Würz, S. M. Babu, M. Dziejzina, C. Kelch, S. Siebentritt, R. Klenk, Th. Schedel-Niedrig and M. Ch. Lux-Steiner  
J. Physics and Chemistry of solids, 64 (2003) 1849–1853
34. Stoichiometry and doping induced modifications in the properties of Bi<sub>12</sub>SiO<sub>20</sub> single crystals  
S.Moorthy Babu, K.Kitamura and S.Takekawa  
J.Crystal Growth, 275 (2005) 681-686
35. Thermal stability and environmental effect on CuGaSe<sub>2</sub> thin film solar cells  
S.Moorthy Babu, A.Meeder, D. Fuertes Marro´n, T. Schedel-Niedrig and M.Ch. Lux-Steiner  
J.Crystal Growth, 275 (2005) 1235 – 1240
36. Composition and growth procedure dependent properties of electrodeposited CuInSe<sub>2</sub> thin films  
S.Moorthy Babu, A.Ennaoui, and M.Ch. Lux-Steiner  
J.Crystal Growth, 275 (2005) 1241 – 1246
37. Growth and Characterisation of pure and doped KY(WO<sub>4</sub>)<sub>2</sub> crystals  
A.Senthil Kumaran, A.Lakshmi Chandru, S.Moorthy Babu and M.Ichimura  
J.Crystal Growth, 275 (2005) 1901 – 1905
38. Crystal Growth of Pure and Doped KGd (WO<sub>4</sub>)<sub>2</sub> and their Characterization for Laser Applications  
A.Senthil Kumaran, A.Lakshmi Chandru, S.Moorthy Babu, I.Bhaumik, S.Ganesamoorthy, A.K.Karnal and V.K.Wadhawan  
J.Crystal Growth, 275 (2005) 2117 – 2121
39. Influence of ultrasonification in CdS thin film deposition in PCD technique  
S. Soundeswaran, O. Senthil Kumar, S. Moorthy Babu, P. Ramasamy and R. Dhanasekaran  
Materials Letters, 59 (2005) 1785
40. Structural Investigations on Lithium Niobate Grown by Czochralski Technique  
A. Claude, V. Vaithianathan, S. Moorthy Babu and P. Ramasamy.  
Journal of Applied Sciences 5(10): (2005) 1744-1748,
41. Habit modification and improvement in properties of potassium hydrogen phthalate (KAP) crystals doped with metal ions  
S.K.Geetha, R.Perumal, S.Moorthy Babu and P.M.Anbarasan  
Crystal Research and Technology 41 (2006) 221-224

42. High Energy Sn ion implantation induced effects in InSb substrates  
M.Haris, P.Veeramani, P.Jayavel, Y.Hayakawa, D.Kanjilal and S.Moorthy Babu  
Nuclear Instruments and Meth. B 244 (2006) 179-182
43. Crystal Growth and Characterization of  $KY(WO_4)_2$  and  $KGd(WO_4)_2$  for laser applications  
A.Senthil Kumaran, S.Moorthy Babu, S.Ganesamoorthy, I.Bhaumik and A.K.Karnal  
J.Crystal Growth, 292 (2006) 368 – 372
44. Investigation of swift heavy ion irradiation effects in CdTe crystals  
P.Veeramani, M.Haris, D.Kanjilal, K.Asokan and S.Moorthy Babu  
J.Phys.D:Appl. Phys, 39 (2006) 2707 - 2710
45. Effect of metal ion and amino acid doping on the optical performance of KDP single crystals  
P. Kumaresan, S. Moorthy Babu, P. M. Anbarasan  
Optoelectronics and Advanced Materials – Rapid Communications, 9 (2007) 65
46. Growth and Characterisation of  $InAs_xSb_{1-x}$  bulk crystals and growth rate measurements  
M. Haris, P. Veeramani, P.Jayavel, Y. Hayakawa and S. Moorthy Babu  
Materials and Manufacturing Processes, 22 (2007) 404 – 408
47. Investigation of  $CdTe_x$  and  $Cd_{1-x}Zn_xTe$  Schottky barrier diode structure based  $\gamma$ -ray detectors  
P.Veeramani, M.Haris and S.Moorthy Babu  
Materials and Manufacturing Processes, 22 (2007) 375 - 378
48. Effect of different metal ions on the structural, thermal, spectroscopic and optical properties of ATCC and ATMC single crystals  
R.Perumal and S.Moorthy Babu  
Crystal Research and Technology, 42 (2007) 838 - 843
49. Growth and Characterisation of metal ions and dye doped KDP single crystals  
P.Kumaresan, S.Moorthy Babu and P.M.Anbarasan  
Optoelectronics and Advanced Materials – Rapid, 9 (2007) 2774
50. Growth and characterization of pure and amino acid (L-Glutamic acid, L-histidine, L-Valine) doped KDP single crystals  
P.Kumaresan, S.Moorthy Babu and P.M.Anbarasan  
Journal of Nonlinear Optical Physics and Materials, 16 (2007) 255 – 268
51. Effect of sodium fluoroborate ( $NaBF_4$ ) doping on the NLO properties of L-Histidine single crystals  
D.Syamala, K.V.Rajendran, R.K.Natarajan and S.Moorthy Babu  
Crystal Growth and Design, 7 (2007) 1695 – 1698
52. Optical Studies on Pure and Amino acids doped KDP crystal  
P.Kumaresan, S.Moorthy Babu and P.M.Anbarasan  
Optoelectronics and Advanced Materials, 9 (2007) 2780
53. Effect of copper thiourea complex on the performance of KDP single crystals  
P.Kumaresan, S.Moorthy Babu and P.M.Anbarasan  
Optoelectronics and Advanced Materials, 9 (2007) 2787

54. Influence of swift ions and proton implantation on the formation of optical waveguides in Lithium Niobate  
P.Kumar, S.Moorthy Babu, S.Ganesamoorthy, A.K.Karnal and D.Kanjilal  
J.Appl. Phys, 102 (2007) 084905
55. Growth and characterization of an organometallic nonlinear optical material tri-allylthiourea cadmium chloride (ATCC)  
R.Perumal and S.Moorthy Babu  
Materials Chemistry and Physics, 107 (2008) 23-27
56. Investigation of Swift Heavy Ion Irradiation Effects on Au/CdTe and Au/CdZnTe Schottky Barrier Diode  
P. Veeramani, M. Haris, S. Moorthy Babu, D. Kanjilal and P.Sugathan  
Radiation Measurements, 43 (2008) 56-61
57. Growth and characterization of metal ions and dyes doped KDP single crystals for laser applications  
P. Kumaresan, S. Moorthy Babu and P.M. Anbarasan  
Materials Research Bulletin 43 (2008) 1716-1723
58. Thermal, dielectric studies on pure and amino acid (L-Glutamic acid, L-histidine, L-Valine) doped KDP single crystals  
P.Kumaresan, S.Moorthy Babu and P.M.Anbarasan  
Optical Materials, 30 (2008) 1361-1368.
59. Growth and characterization of an organometallic tri-allylthiourea complex non linear optical crystals  
R.Perumal and S.Moorthy Babu  
J.Crystal Growth 310 (2008) 2050-2057
60. Effect of irradiation of swift heavy ions on dyes doped KDP crystals for laser applications  
P.Kumaresan, S.Moorthy Babu and P.M.Anbarasan  
J.Crystal Growth 310 (2008) 1999 - 2004
61. Growth and Characterization of Ytterbium doped  $\text{KGd}(\text{WO}_4)_2$  single crystal  
P.Samuel and S.Moorthy Babu  
Crystal Research Technology 43 (2008) 1036 - 1040
62. Photovoltaic effect and photoconductivity in Sc-doped near-stoichiometric  $\text{LiNbO}_3$  crystals  
Masaru Nakamura, Shunji Takekawa, Youwen Liu, Somu Kumaragurubaran, S. Moorthy Babu, Hideki Hatano, Kenji Kitamura  
Optical Materials, 31 (2008) 280-283
63. Optical Properties of thiol stabilised CdTe nanoparticles  
M.S.Abd El-Sadek, J.Ramkumar and S.Moorthy Babu  
International Journal of Nanoparticles, 2 (2009) 20-29
64. Potassium Tellurite as Tellurium Source in Mercaptoacetic-Acid-Capped CdTe Nanoparticles  
M.S.Abd El-Sadek, J.Ramkumar and S.Moorthy Babu  
Current Applied Physics 10 (2010) 317-322



65. Recharging process, hillock formation, implanted strain under H<sup>+</sup> ion implantation in titanium doped lithium niobate  
P.Kumar, S.Moorthy Babu  
NIMB 268 (2010) 172-177
66. Growth of two dimensional KGd (WO<sub>4</sub>)<sub>2</sub> nanorods by modified Sol-gel Pechini method  
D.Thangaraju, P.Samuel and S.Moorthy Babu  
Optical Materials 32 (2010) 1321-1324
67. Influence of dopant concentration on the structural and optical characteristics in Ti doped LiNbO<sub>3</sub>  
P. Kumar, S. Moorthy Babu, I. Bhaumik, S. Ganesamoorthy, A. K. Karnal, A. K. Pandey and R. Raman  
Optical Materials 32 (2010) 1364-1367
68. Optical Characterisation of ferroelectric glycinium phosphate single Crystals  
R.Perumal, K.Senthil Kumar, S.Moorthy Babu and G.Bhagavannarayana  
J.Alloys and Compounds, 490 (2010) 342-349
69. Synthesis, Growth and Characterisation of an organometallic complex tri-allylthiourea Cadmium Bromide Single crystals  
R.Perumal and S.Moorthy Babu  
Current Applied Physics, 10 (2010) 858-865
70. Selective Synthesis and Characterization of CdTe@Mn(OH)<sub>2</sub> (Core-Shell) Composite Nanoparticles  
M.S..Abd El-sadek, J.Ram Kumar, S. Moorthy Babu and M.S. El-Hamidy  
J.Alloys and Compounds, 496 (2010) 589-594
71. Aqueous Synthesis and Characterization of CdTe@Co(OH)<sub>2</sub> (core-shell) Composite Nanoparticles  
M.S..Abd El-sadek, J.Ram Kumar, S. Moorthy Babu and M.S. El-Hamidy  
Materials Chemistry and Physics 124 (2010) 592 - 599
72. Growth and optical characterization of colloidal CdTe nanoparticles capped by a bifunctional molecule  
M.S. Abd El-sadek, S. Moorthy Babu  
Physica B: Condensed Matter, 405 (2010) 3279-3283
73. Synthesis, crystal growth, structural, spectral and optical properties of tri-allylthiourea mercury bromide (ATMB) single crystals  
R. Perumal, S. Moorthy Babu  
Physica B: Condensed Matter, 405 (2010) 4303-4306
74. Synthesis, crystal growth and characterization of a metal-organic nonlinear optical tri-allylthiourea mercury chloride single crystals  
R. Perumal, S. Moorthy Babu  
Optics Communications, 283 (2010) 4368 -4371

75. Efficient energy transfer between  $Ce^{3+}$  and  $Nd^{3+}$  in cerium codoped Nd:YAG laser quality transparent ceramics  
P. Samuel, T. Yanagitani, H. Yagi, H.Nakao, Ken Ichi Ueda, S. Moorthy Babu  
Journal of Alloys and Compounds, Vol. 507, 2 (2010) pp. 475-478
76. Crystal growth, structural perfection, phase transition, optical, and etching studies of doped glycine phosphite ferroelectric single crystals  
R. Perumal, S. Moorthy Babu, G. Bhagavannarayana  
Journal of Alloys and Compounds, 505 (2010) 268-272
77. Crystal growth and characterization of Deuterated Glycine Phosphite single crystals  
R. Perumal, S. Moorthy Babu  
Materials Letters, 64 (2010) 2142-2144
78. XPS, HRXRD and Refractive index analyses of Ti ions doped lithium niobate ( $Ti:LiNbO_3$ ) nonlinear optical single crystal  
P. Kumar, S. Moorthy Babu, S. Perero, Indranil Bhaumik, S. Ganesamoorthy, A. K. Karnal  
PRAMANA-Journal of Physics, 75 (2010)1035 -1040
79. Electronic structure of URh<sub>3</sub> up to 40 GPa  
V Kathirvel, Sharat Chandra, N.V.Chandrashekar, P.Ch.Sahu and S.Moorthy Babu  
Journal of Physics: Conference Series 215 (2010) 012115
80. Nano hillock and complex crater formation by low-energy proton implantation with incident angle into lithium niobate single crystal  
P. Kumar and S. Moorthy Babu  
Radiation Effects & Defects in Solids 166 (2011) 258-264
81. Nucleation kinetics and growth aspects of glycine phosphate ferroelectric single crystals  
R.Perumal and S.Moorthy Babu  
Materials Chemistry and Physics, 126 (2011) 381-385
82. Effect of dysprosium active ions on spectral properties of KGW single crystals  
P. Samuel, D.Thangaraju and S. Moorthy Babu  
Journal of Alloys and Compounds, 509 (2011) 177-180
83. Influence of pH and microwave calcinations on the morphology of  $KGd(WO_4)_2$  particles derived by Pecini Sol-Gel method  
D.Thangaraju, S.Moorthy Babu, P.Samuel, A.Durairajan and Y.Hayakawa  
J.Sol-Gel. Sci. Technology, 58 (2011) 419-426
84. A controlled approach for synthesizing CdTe@CrOOH (core-shell) composite nanoparticles  
M.S.Abd El-sadek and S.Moorthy Babu  
Current Applied Physics, 11 (2011) 926-932
85. Growth of homogeneous polycrystalline  $Si_{1-x}Ge_x$  and  $Mg_2Si_{1-x}Ge_x$  for thermoelectric application  
Y.Hayakawa, M.Arivanandhan, Y.Saito, T.Koyama, Y.Momose, H.Ikeda, A.Tanaka, C.Wen, Y.Kubota, T.Nakamura, S.Bhattachary, D.K.Aswal, S.Moorthy Babu, Y.Inatomi and H.Tatsuoka  
Thin Solid Films, 519 (2011) 8532-8537

86. Spectroscopic analysis of Eu doped transparent CaF<sub>2</sub> ceramics at different concentration  
P. Samuel, H. Ishizawa, Y. Ezura, Ken Ichi Ueda and S. Moorthy Babu  
Optical Materials 33 (2011) 735-737
87. CdTe@Cu(OH)<sub>2</sub> Nanocomposite: Aqueous Synthesis and Characterization  
M. S. Abd El-sadek and S. Moorthy Babu  
Journal of Solid State Chemistry, 184 (2011) 1135-1140
88. Influence of Different Stabilizer on the Optical and Nonlinear Optical Properties of CdTe Nanoparticles  
M.S.Abd El-sadek, A.Y Nooralden, S. Moorthy Babu and P.K. Palanisamy  
Optics Communication 284 (2011) 2900 - 2904
89. Study of the influence of dopants on the crystalline perfection of ferroelectric glycine phosphate single crystals using high resolution X-ray diffraction analysis  
K.Senthil Kumar, S.Moorthy Babu and G.Bhagavannarayana  
J.Applied Crystallography, 44 (2011) 313 - 318
90. Polymerized Complex Sol-Gel Synthesis, Structural and Optical Properties of Monoclinic Eu<sup>3+</sup> Doped KGd(WO<sub>4</sub>)<sub>2</sub> Crystalline Red Phosphors  
D.Thangaraju, A.Durairajan, S.Moorthy Babu and Y.Hayakawa  
AIP Proceedings 1391 (2011) 54-58
91. Linear and Nonlinear Optical Properties of Mercaptoacetic Acid- Capped CdTe Nanoparticles by Z-scan Technique  
M. S. Abd El-sadek, S. Moorthy Babu, Ahmad Y. Nooralden, and P. K. Palanisamy  
Nanoscience and Nanotechnology Letters 3 (2011) 637-642
92. Paramagnetic Potassium Holmium double Tungstate Nanocrystals: Synthesis and Characterization  
D.Thangaraju, A.Durairajan, S.Moorthy Babu and Y.Hayakawa  
Journal of Alloys and Compounds 509 (2011) 9890 - 9896
93. Efficient Energy Transfer Between Ce<sup>3+</sup>/Cr<sup>3+</sup> and Nd<sup>3+</sup> ions in Transparent Nd/Ce/Cr:YAG ceramics  
P.Samuel, G.A.Kumar, T.Yanagitani, H.Yagi, K.Ueda and S.Moorthy Babu  
Optical Materials 34 (2011) 303-307
94. Development of Co-doped Transparent YAG Ceramics for Efficient Energy Transfer for Solar Pumped Laser Applications  
S.Moorthy Babu, P.Samuel, D.Thangaraju, T.Yanagitani, H.Yagi and K.Ueda  
KIRAN, 22 (2011) 32-35
95. Improvement in Structural, Dielectric, Ferroelectric and Mechanical Properties in Metal Ions Doped Glycine Phosphite Single Crystals  
K.Senthilkumar, S.Moorthy Babu, Binay Kumar and G.Bhagavannarayana  
Ferroelectrics 437 (2012) 126-136
96. Synthesis and Characterization of Pure and Mn doped CdS nanoparticles and thin films  
D.Venkatesan, D.Deepan, J.Ramkumar, S.Moorthy Babu and R.Dhanasekaran  
Journal of Nanomaterials 2012 (2012), Article ID 492573, 8 pages

97. SiO<sub>2</sub>/KGd(WO<sub>4</sub>)<sub>2</sub>:Eu<sup>3+</sup> Composite Luminescent Nanoparticles: Synthesis and Characterization  
D.Thangaraju, A. Durairajan, D. Balaji, S. Moorthy Babu and Y.Hayakawa  
Materials Chemistry and Physics 135 (2012) 1115-1123
98. Synthesis, crystalline perfection, optical and dielectric studies on metal-organic tri-allylthiourea cadmium chloride (ATCC) nonlinear optical single crystal by solution growth technique  
R. Perumal, S. Moorthy Babu  
Journal of Alloys and Compounds, 538 (2012) 131-135
99. Synthesis, Structural and vibrational studies on Mixed Alkali metal Gadolinium Double Tungstate, K<sub>1-x</sub>Na<sub>x</sub>Gd(WO<sub>4</sub>)<sub>2</sub>  
A. Durairajan, D. Thangaraju, and S. Moorthy Babu  
Optical Materials 35 (2013) 735-739
100. Sol-Gel Synthesis and Characterizations of Nano Crystalline NaGd(WO<sub>4</sub>)<sub>2</sub> for Anisotropic Transparent Ceramic Laser Application  
A.Durairajan, D. Thangaraju, D. Balaji and S. Moorthy Babu  
Optical Materials 35 (2013) 740-743
101. Synthesis and characterization of monoclinic KGd(WO<sub>4</sub>)<sub>2</sub> particles for non-cubic transparent ceramics  
D. Thangaraju, A. Durairajan, D. Balaji and S. Moorthy Babu  
Optical Materials 35 (2013) 753-756
102. Structural, Compositional and Optical analysis of InAs<sub>x</sub>Sb<sub>1-x</sub> crystals grown by Vertical Directional Solidification Method  
M.Haris, Y.Hayakawa, F.C.Chou, P.Veeramani and S.Moorthy Babu  
Journal of Alloys and Compounds, 548 (2013) 23-26
103. Novel KGd<sub>1-(x+y)</sub>Eu<sub>x</sub>Bi<sub>y</sub> (W<sub>1-z</sub>Mo<sub>z</sub>O<sub>4</sub>)<sub>2</sub> nanocrystalline red phosphors for tricolor white LEDs  
D.Thangaraju, A. Durairajan, D. Balaji, S. Moorthy Babu and Y.Hayakawa  
Journal of Luminescence, 134 (2013) 244-250
103. Effect of rare earth ions on the properties of Glycine Phosphite single crystals  
K.Senthilkumar, S.Moorthy Babu, Binay Kumar and G.Bhagavannarayana  
Journal of Crystal Growth 362 (2013) 343-348
104. Growth, vibrational and luminescence analysis of monoclinic KGd<sub>(1-x)</sub>Pr<sub>x</sub>(WO<sub>4</sub>)<sub>2</sub> (x=0.5, 2, 5 %) single crystals  
D.Thangaraju, A. Durairajan, P.Samuel and S.Moorthy Babu  
Journal of Crystal Growth 362 (2013) 319-323
105. Synthesis, structural and luminescence analysis of NaGd<sub>1-x</sub>Tb<sub>x</sub>(WO<sub>4</sub>)<sub>2</sub> solid solution for white LED application  
A.Durairajan, D.Thangaraju, D.Balaji and S.Moorthy Babu  
AIP Conf. Proc. 1512 (2013) 1230-1231
106. Synthesis and characterization of Eu<sup>3+</sup>:YAG nanopowder by precipitation method  
D.Balaji, D.Thangaraju, A.Durairajan and S.Moorthy Babu  
AIP Conf. Proc. 1512 (2013) 1234-1235

107. Tailoring Sol-Gel synthesis of CsPr(WO<sub>4</sub>)<sub>2</sub> nano sheets for red phosphors  
D. Balaji, D.Thangaraju, A. Durairajan and S. Moorthy Babu  
Materials Science and Engineering B, 178(2013) 762-767
108. Enhanced Light absorption in CdTe nanoparticle/P3HT nanofiber blends  
S.Ananthakumar, J.Ramkumar and S.Moorthy Babu  
AIP Conf. Proc. 1536 (2013) 167-168
109. Properties of Ferroelectric Glycine Phosphite Single Crystals  
K.Senthil Kumar, S.Moorthy Babu, Binay Kumar and G.Bhagavannarayana  
AIP Conf. Proc. 1536 (2013) 901-902
110. Synthesis and vibrational characterization of KLa(WO<sub>4</sub>)<sub>2</sub> crystalline powders by modified Pechini method  
K.Kavi Rasu, A.Durairajan, D.Balaji and S.Moorthy Babu  
AIP Conf. Proc. 1536 (2013) 1147-1148
111. Multi-photon induced photoluminescence in TGA capped CdTe nanoparticles  
J.Jayabalan, S.Ananthakumar, S.Khan, Asha Singh, Puspen Mondal, A.K.Srivastava, S.Moorthy Babu and Rama Chari  
Asian Journal of Chemistry, 25 (2013) S42-S44
112. Influence of Dopants on Vickers Microhardness of Ferroelectric Glycine Phosphite Single Crystals  
K.Senthil Kumar, S.Moorthy Babu and Binay Kumar  
Proc. Indian National Science Academy, 79 (2013) 423-426
113. Analysis of dissolution and growth process of SiGe alloy semiconductor based on penetrated X-ray intensities  
M.Omprakash M.Arivanandhan, R. Arun Kumar, H.Morii , T.Aoki, T.Koyama, Y.Momose, H.Ikeda, H.Tatsuoka, Y.Okano, T.Ozawa, S.Moorthy Babu, Y.Inatomi, Y.Hayakawa  
Journal of Alloys and Compounds 590 (2014) 96-101
114. Sol-gel synthesis and luminescent properties of Eu<sup>3+</sup>:CsGd(WO<sub>4</sub>)<sub>2</sub> red emitting phosphors  
D. Balaji, A. Durairajan, K.Kavi Rasu, S.Moorthy Babu  
Journal of Luminescence 146 (2014) 458-463
115. Size independent peak shift between normal and upconversion photoluminescence in MPA-capped CdTe nanoparticles  
S. Ananthakumar, J. Jayabalan, A. Singh, S. Khan, S. Prajapati, S.Moorthy Babu and R.Chari  
PRAMANA (2014) in press
116. Effect of co-sensitization of CdSe nanoparticles with N3 dye on TiO<sub>2</sub> nanotubes  
S.Ananthakumar, J.Ramkumar and S.Moorthy Babu  
Solar Energy 106 (2014) 136-142
117. Effect of Ligand Exchange in Optical and Morphological Properties of CdTe nanoparticles/P3HT blends  
S.Ananthakumar, J.Ramkumar and S.Moorthy Babu  
Solar Energy 106 (2014) 151-158

118. Hydrothermal Synthesis and Characterization of CuInSe<sub>2</sub> nanoparticles using ethylenediamine as capping agent  
J.Ramkumar, S.Ananthakumar and S.Moorthy Babu  
Solar Energy 106 (2014) 177-183
119. Synthesis of thiol modified-cadmium selenide nanoparticle-P3HT blends for hybrid solar cell structures  
S.Ananthakumar, J.Ramkumar and S.Moorthy Babu  
Materials Science in Semiconductor Processing 22 (2014) 44-49
120. Facile synthesis and transformation of Te nanorods to CdTe nanoparticles for solar cell applications  
S.Ananthakumar, J.Ramkumar and S.Moorthy Babu  
Materials Science in Semiconductor Processing 27 (2014) 12-18
121. Synthesis and formation mechanism of nanosheet structure of Cu<sub>2</sub>ZnSnS<sub>4</sub>(CZTS)  
S.Ananthakumar, J.Ramkumar and S.Moorthy Babu  
Materials Letters (2014) in press
122. Synthesis and Characterization of Sub-micron NaGd<sub>1-x</sub>Eu<sub>x</sub>(WO<sub>4</sub>)<sub>2</sub> Red Phosphor for Application in White Light emitting Diodes  
A.Durairajan, D.Balaji, K.Kavirasu and S.Moorthy Babu  
J.Luminescence (2014) in press

**International Conferences/Schools/Programmes Participated/chaired/delivered oral/invited presentations**

- [1] International School on Advanced Materials for Solid State Applications, Anna University, Madras, INDIA, 25 January - 5 February 1988
- [2] 9th International Conference on Crystal Growth, Sendai, JAPAN, 20-25, August 1989
- [3] International School on Technologically Important Materials for Device Applications, Anna University, Madras, INDIA, 8-15, November 1991
- [4] 10th International Conference on Crystal Growth, San Diego, USA, August, 1992
- [5] 13th International Conference on Nucleation and Atmospheric Aerosols, Salt Lake City, USA, August, 1992
- [6] International School on Advanced Electronic Materials, Anna University, Madras, INDIA 6-15, February, 1995
- [7] Ninth International Summer School on Crystal Growth, Papendal, Arnheim, THE NETHERLANDS, 11-16, June 1995

- [8] Workshop on Materials Science and Physics of Non-Conventional Energy Sources, ICTP, Trieste, ITALY, 18, Sep.-6, Oct. 1995.
- [9] 70<sup>th</sup> Crystal Growth Seminar, NIRIM, Tsukuba, JAPAN, July, 15, 1997.
- [10] 71<sup>st</sup> Crystal Growth Seminar, NIRIM, Tsukuba, JAPAN, October 10, 1997
- [11] 72<sup>nd</sup> Crystal Growth Seminar, NIRIM, Tsukuba, JAPAN, March 6, 1998
- [12] 73<sup>rd</sup> Crystal Growth Seminar, NIRIM, Tsukuba, JAPAN, October 16, 1998
- [13] International Symposium on Optical Memory, AIST Auditorium, Tsukuba, JAPAN, October 19, 1998
- [14] 43<sup>rd</sup> Symposium on Synthetic Crystals, Osaka University, Osaka, November 12-13, 1998
- [15] Ceramics Symposium, NIRIM, Tsukuba, JAPAN, December 11, 1998.
- [16] International School on Crystal Growth Methods and Processes, Anna University, Chennai 25 January, 2000 to February 4, 2000
- [17]. International Workshop on Crystal Growth and Characterisation of Technologically important Materials, February, 24-28, 2004, Anna University, Chennai
- [18] International Summer School on Crystal Growth, Berlin, Germany, August, 1-7, 2004
- [19] International Conference on Crystal Growth – 14, Grenoble, France, August, 9-14, 2004
- [20] Indo-Japan Workshop on Crystal Growth and Applications of Advanced Materials for Optoelectronics, December, 7-10, 2004, Anna University, Chennai, India
- [21] Asian Conference on Crystal Growth and Crystal Technology, Beijing, China, October, 16-18, 2005
- [22] International Workshop on Crystal Growth and Characterisation of Advanced Materials, January, 9-13, 2006, Anna University, Chennai
- [23] International Workshop on Nanoscience and Technology February, 13-17, 2006, Anna University, Chennai
- [24] International Symposium on Solid State Lighting, July, 21-22, 2006, Anna University, Chennai, India
- [25] International Workshop on Opportunities for successful cooperation with China and India, November, 20-21, 2006, Politecnico di Torino, Italy.
- [26] Indo-German Workshop on Major aspects of Energy Research in India and Germany: The challenges for the Future, Anna University, June, 20-21, 2007, India
- [27] International Conference on Crystal Growth (ICCG-15), August, 12-17, 2007, Salt Lake City, USA.
- [28] 18<sup>th</sup> International Photovoltaic Science and Engineering Conference January, 19-23, 2009 Science City, Kolkatta
- [29] International Physics Conference, 15-17, May, 2009, BUET, Dhaka, Bangladesh
- [30] 5<sup>th</sup> International Symposium on Laser and Nonlinear optical Materials, September, 1-5, 2009, University of Pisa, Pisa, Italy
- [31] International Workshop on Advances in Nanoscience and Technology, Anna University, Chennai, October, 28-30, 2009
- [32] International Conference on Emerging Technologies in Renewable Energy, 18-21, August, 2010, Anna University, Chennai, India
- [33] Indo-Italian Advanced Level workshop on Semiconductor Nanostructures, Ultrathin Films and Applications September, 8-10, 2010, Anna University, Chennai, India

- [34] International workshop on Advanced Nanovision Science, Shizuoka University, Hamamatsu, Japan, January, 17-18, 2011
- [35] International Workshop on Advanced Functional Nanomaterials, Anna University, Chennai, February, 21-24, 2011
- [36] International Conference on Optics 11, National Institute of Technology Calicut, Calicut, May, 23-25, 2011.
- [37] Asia Pacific Workshop on Materials Characterization, Anna University, Chennai, September, 22-24, 2011
- [38] INDO-UK workshop on Advanced Materials and Technology, 27-28 July 2012, Anna University, Chennai, INDIA
- [39] International Conference on Advanced Nanomaterials (ANM 2012), 17-19, October, 2012, I.I.T., Chennai, INDIA.
- [40] International Conference on Renewable Energy Policy 11-15, November 2012, National University of Taiwan, Taipei, Taiwan
- [41] Indo-German workshop on Advanced Materials for Future Energy Requirements, 29<sup>th</sup> November, to 1<sup>st</sup> December, 2012, University of Delhi, Delhi, INDIA
- [42] International Workshop on Crystal Growth and Characterization of Advanced Materials, 17-19, December, 2012, Anna University, Chennai, INDIA

**National Conferences/Schools/Programmes Participated and/or delivered oral/invited presentations**

- [1] IXX National Seminar on Crystallography, Chenganacherry, Kerala, 18-20 Dec., 1987.
- [2] National Seminar on GaAs and III-V Compound Semiconductors, I.I.T., Kharagpur, 28-30 April, 1988
- [3] National Symposium on Electrochemical Materials Science, CECRI, Karaikudi, 28-30, Nov., 1988.
- [4] Seminar on Advances in Plating and Coating Technology, I.I.Sc., Bangalore, July 20-22, 1989
- [5] XXI National Seminar on Crystallography, BARC, Bombay, 28-30 Dec., 1989
- [6] Symposium on Nucleation, Solution Growth and Surface Morphology, Crystal Growth Centre, Anna University, Madras, 8-9 Jan., 1990.
- [7] Second National Convention of Electrochemists, CECRI, Karaikudi, Feb. 28, 1990
- [8] Symposium on Materials and Devices for optoelectronics, Calcutta University, Calcutta, 3-5, Sep., 1990.
- [9] One Day Students Meet, CSIR Unit, Madras-113, 29 Oct., 1990
- [10] DAE Solid State Physics Symposium, BARC, Bombay, 1-4, January, 1991
- [11] Ninth Colloquium for Young Physicist, Calcutta, August 1991.
- [12] XXIII National Seminar on Crystallography, MREC, Jaipur, March 23-25, 1992.
- [13] DAE Solid State Physics Symposium, Sri Venkateswara Univ., Tirupati, December 28, 1992 - 1 January 1993.
- [14] Fifth National Seminar on Crystal Growth, Anna University, 18-20, November 1993
- [15] National Seminar on Crystallography and Bio-Physics, Madras University, Madras December 15-17, 1993



- [16] Indo-US workshop on Nucleation and Growth in Solids, I.I.Sc., Bangalore, March 14-16, 1994.
- [17] QIP Summer School On Fractal Growth and their realisation in computer vision and Computer Graphics, I.I.T., Kharagpur, May 2-8, 1994
- [18] Workshop on Electrodeposition of Thin Films, IUC, Indore, January 9-14, 1995
- [19] Sixth National Seminar on Crystal Growth, Anna University, Madras 2-4, February, 1995.
- [20] Workshop on Advanced Laser Spectroscopy, IIT, Kanpur, 25-28, February, 1995
- [21] National Conference on Fundamentals of Crystal Growth, Anna University, Madras, 29-30, January 1996
- [22] XXIII National Symposium of the Optical Society of India on Optics and Optoelectronics, IRDE, Dehradun, 14-16 March, 1996
- [23] National Symposium on High Power Lasers, DSC, New Delhi, 23-24, December, 1996.
- [24] National Seminar on Materials Science: Recent Trends and Future, Sant Longowal Institute of Science and Technology, Longowal, February, 24-25, 2000
- [25] National Conference on Laser Materials, 7-8, August, 2000, CGC, Anna University, Chennai-25.
- [26] National Level Crystal Growth Seminar in Tamil, 9<sup>th</sup> August, 2000, CGC, Anna University, Chennai-25
- [27] National Conference on Fundamentals of Crystal Growth, 7-9, November, 2000, CGC, Anna University, Chennai - 25
- [28] UGC refresher course on Recent Developments on Crystal Growth and Characterisation, 28<sup>th</sup> May to 17<sup>th</sup> June, 2001, Anna University, Chennai-25
- [29] UGC Sponsored Refresher Course on "Recent Trends in Crystal Growth and Applications", 5-26 February, 2003, Anna University, Chennai-25
- [30] Ninth National Seminar on "Crystal Growth". February 24-26, 2003, Anna University, Chennai – 25
- [31] Workshop on Radiation Detectors, 14<sup>th</sup> March, 2003, NSC, Delhi
- [32] Workshop on the Utilization of Energetic ion beams in Materials Research, 29-31, July, 2003, IGCAR, Kalpakkam.
- [33] UGC Sponsored Refresher Course on Recent Trends in Crystal Growth and Applications, 17, November – 7, December, 2004, Anna University, Chennai – 25
- [34] 10<sup>th</sup> National Seminar on Crystal Growth at Kongu Engg. College, Erode. January, 27-29, 2005
- [35] AUC meeting at Nuclear Science Centre, New Delhi. July, 15-17, 2005
- [36] National Symposium on Crystal Growth and Characterisation, Loyala College, Chennai 34, September, 29-30, 2005
- [37] National Conference on Preparation and Characterisation of Crystalline Materials, January, 19-21, 2006, S.T.Hindu College, Nagercoil
- [38] National seminar on Crystal Growth – 11, SSN College of Engineering, Kalavakkam, Chennai 7<sup>th</sup> December, 2006
- [39] Workshop on Materials Science and Atomic/Molecular Physics Experiments using Low Energy ion beam Facility, 21-22, February, 2007 IUAC New Delhi
- [40] Second National Symposium on Nonlinear optical crystals and modeling in Crystal Growth, March, 26-27, 2007, Anna University, Chennai, India

- [41] UGC-State level seminar on "Recent Advancements in Physics,13-14, September, 2007 Sacred Hearts College, Tirupattur, India
- [42] 17<sup>th</sup> DAE-BRNS National Laser Symposium, Baroda, Vadodara, December, 17-20, 2007.
- [43] 52<sup>nd</sup> DAE Solid State Physics Symposiu, Mysore, December, 27-31, 2007
- [44] Workshop on Biomaterials and Biomineralisation, February, 1, 2008, Anna University, Chennai.
- [45] National Seminar on Recent Advances in Materials Science, February, 15-16, 2008, Cauvery College, Bharathidasan University, Trichy
- [46] Workshop on Molecular Electronics, Bio-Sensors and other organic devices as a part of EAC meeting of DST, May, 22-23, 2008, BARC, Mumbai
- [47] SERC summer school on Molecular Electronics at I.I.T., Kanpur, July, 7 to July, 18, 2008
- [48] 18<sup>th</sup> National Laser Symposium 7-10, January, 2009 LASTEC, DRDO, New Delhi
- [49] National Workshop on Crystal Growth and Characterisation, 16<sup>th</sup> March, 2009 Alagappa University, Karaikudi
- [50] National Symposium on Growth of detector grade single crystals, November, 19-21, 2009, BARC, Mumbai, India
- [51] 54<sup>th</sup> DAE Solid State Physics Symposium, M.S.University, Baroda, December, 14-18, 2009
- [52] 14<sup>th</sup> National Seminar on Crystal Growth, 10 - 12 March, 2010, VIT, Vellore, India
- [53] 19<sup>th</sup> National Laser Symposium, RRCAT, Indore, December, 1-4, 2010
- [54] XV National Seminar on Crystal Growth, PSN College of Engineering and Technology, Tirunelveli, February, 23-25, 2011
- [55] 20<sup>th</sup> National Laser Symposium, Anna University, Chennai, January, 8-10, 2012
- [56] 41<sup>st</sup> National Seminar on Crystallography, October 8-10, 2012, University of Madras, Chennai, INDIA
- [57] National Conference on Nanomaterials - 2012 (NCN-2012), 3 - 4, December 2012, Karunya University, Coimbatore, INDIA
- [58] Twenty Fourth National Seminar on Crystal Growth, 20-22, December, 2012, Anna University, Chennai, INDIA
- [59] National Seminar on Recent Trends in Crystal Growth and Nano Materials (NSCGNM-2013), National College, Trichy, 13-15, March, 2013
- [60] "Refresher Course in Nano Sciences", University of Kerala, Trivandrum, 21 October, to 11, November, 2013
- [61] National Laser Symposium (NLS 22), January 08-11,2014 Manipal Institute of Technology, Manipal University, Manipal, Karnataka, India.
- [62] UGC sponsored National Seminar on Recent Advances in Materials Science, Bharthidasan University, Tiruchirappalli, 3-4, February, 2014

**Brief Details of Travel and Study Abroad including Post-doctoral visits**

Sl.No.	Place	Period	Purpose
1	ICCG-9, IMR, Tohoku, <b>Japan</b>	17.8.1989 to 28.8.1989	Participation in Conference
2	ICCG-10, SanDiego, <b>U.S.A.</b>	5.9.1992 to 16.9.1992	Participation in Conference
3	Convention Center, Anaheim and The Hague, <b>THE NETHERLANDS</b>	9.6.1995 to 16.6.1995	Participation in ISSCG-8 and ICCG-11
4	ICTP, Trieste <b>Italy</b>	18.9.1995 to 6.10.1995	Participation in Workshop
5	National Institute of Materials Science, <b>Japan</b>	4.3.1997 to 3.3.1999	<b>STA Fellowship, Post Doctoral Studies</b>
6	Hahn Meitner Institute, Berlin, <b>Germany</b>	02.07.2001 – 31.10.2002	<b>ALEXANDER von HUMBOLDT Fellowship</b>
7	International Summer School on Crystal Growth, Berlin, <b>Germany,</b>	August, 1-7, 2004	Participation in Summer School
8	International Conference on Crystal Growth – 14, Grenoble, <b>France,</b>	August, 9-14, 2004	Participation and presentation of papers in the Conference
9	Kick off Meeting EU-Asia Link Programme, Politecnico di Torino, <b>Italy</b>	29-30, November, 2004	Project Meeting (EU-Asia Programme)
10	NIMS, <b>Japan</b>	1-15, March, 2005	Short Training and Characterisation of Crystals
11	First Year Review Meeting EU-Asia Link Programme, Luoyang, <b>China</b>	19-23, September, 2005	Project Meeting (EU-Asia Programme)
12	Asian Conference on Crystal Growth and Crystal Technology, Beijing, <b>China</b>	October, 16-18, 2005	Participation and presentation of papers in the Conference
13	Young Teacher Training and workshop, EU-Asia Link Programme, Politecnico di Torino, <b>Italy</b>	14-24, November, 2006	Short Training and Workshop (EU-Asia Programme)
14	International Conference on Crystal Growth (ICCG-15), Salt Lake City, <b>USA.</b>	August, 12-17, 2007	Participation and presentation of papers in the Conference
15	Third Year Review Meeting EU-Asia Link Programme, Southampton University, <b>United Kingdom</b>	23-29, Feb, 2008	Project Meeting (EU-Asia Programme)
16	BUET, <b>Bangladesh</b>	14-17, May, 2009	Participation in Conference
17	University of Pisa, <b>Italy</b>	1.9.2009 to 7.9.2009	Participation in Conference ISLNOM-5
18	Politecnico di Torino, <b>Italy</b>	1.6.2010 to 31.7.2010	<b>Erasmus Mundus Academic Exchange Fellowship</b>
19	Shizuoka University, Hamamatsu,	15.12.2010 to	Indo-Japan

	<b>Japan</b>	14.2.2011	Collaborative Programme
20	Shizuoka University, Hamamatsu, <b>Japan</b>	12.12.2011 to 21.12.2011	Indo-Japan Collaborative Programme
21	Shizuoka University, Hamamatsu, <b>Japan</b>	19.10.2012 to 29.10.2012	Indo-Japan Collaborative Programme
22	National Taiwan University, Taipei, <b>Taiwan</b>	11.11.2012 to 15.11.2012	International Conference on Renewable Energy
23	Shizuoka University, Hamamatsu, <b>Japan</b>	27.09.2013 to 7.10.2013	Indo-Japan Collaborative Programme
24	Politecnico di Torino, <b>Italy</b>	19.05.2014 to 15.06.2014	<b>Erasmus Mundus Academic Exchange Fellowship</b>

### List of Books Published

Authors	Title	Publishers	Year
J.Kumar, S.Moorthy Babu S.Vasudevan	Engineering Physics Vol. I.	Vijay Nicole Imprints Pvt. Ltd., Chennai	2005
J.Kumar, S.Moorthy Babu S.Vasudevan	Materials Science	Vijay Nicole Imprints Pvt. Ltd., Chennai	2007

### **Books Edited**

One of the editors for the

Proceedings of the National Conference on Fundamentals of Crystal Growth, Anna University, Chennai -25 (Year 1999)

### **Conferences/ Workshops / Seminars organization**

#### **Co-Convenor / Co-ordinator/Organising Committee Member of the following Programmes**

- [1] International School on Advanced Materials for Solid State Applications, Anna University, Madras, INDIA, 25 January - 5 February 1988
- [2] International School on Technologically Important Materials for Device Applications, Anna University, Madras, INDIA, 8-15, November 1991
- [3] International School on Advanced Electronic Materials, Anna University, Madras, INDIA 6-15, February, 1995
- [4] International School on Crystal Growth Methods and Processes, Anna University, Chennai 25 January, 2000 to February 4, 2000
- [5]. International Workshop on Crystal Growth and Characterisation of Technologically important Materials, February, 24-28, 2004, Anna University, Chennai **Co-Convenor**
- [6] Indo-Japan Workshop on Crystal Growth and Applications of Advanced Materials for Optoelectronics, December, 7-10, 2004, Anna University, Chennai, India **Co-Convenor**
- [7] Asian Conference on Crystal Growth and Crystal Technology, Beijing, China, October, 16-18, 2005

- [8] International Workshop on Crystal Growth and Characterisation of Advanced Materials, January, 9-13, 2006, Anna University, Chennai **Co-Convenor**
- [9] Symposium on Nucleation, Solution Growth and Surface Morphology, Crystal Growth Centre, Anna University, Madras, 8-9 Jan., 1990.
- [10] Fifth National Seminar on Crystal Growth, Anna University, 18-20, November 1993
- [11] Sixth National Seminar on Crystal Growth, Anna University, Madras 2-4, February, 1995.
- [12] National Conference on Fundamentals of Crystal Growth, Anna University, Madras, 29-30, January 1996 **Co-Convenor**
- [13] National Conference on Laser Materials, 7-8, August, 2000, CGC, Anna University, Chennai-25.
- [14] National Level Crystal Growth Seminar in Tamil, 9<sup>th</sup> August, 2000, CGC, Anna University, Chennai-25
- [15] National Conference on Fundamentals of Crystal Growth, 7-9, November, 2000, CGC, Anna University, Chennai - 25 **Co-Convenor**
- [16] UGC refresher course on Recent Developments on Crystal Growth and Characterisation, 28<sup>th</sup> May to 17<sup>th</sup> June, 2001, Anna University, Chennai-25
- [17] UGC Sponsored Refresher Course on "Recent Trends in Crystal Growth and Applications", 5-26 February, 2003, Anna University, Chennai-25
- [18] Ninth National Seminar on "Crystal Growth". February 24-26, 2003, Anna University, Chennai – 25
- [19] UGC Sponsored Refresher Course on Recent Trends in Crystal Growth and Applications, 17, November – 7, December, 2004, Anna University, Chennai – 25 **Co-Convenor**
- [20] Indo-Japan Workshop on Crystal Growth and Applications of Advanced Materials for Optoelectronics, December, 7-10, 2004, Anna University, Chennai, India
- [21] Asian Conference on Crystal Growth and Crystal Technology, Beijing, China, October, 16-18, 2005
- [22] International Workshop on Crystal Growth and Characterisation of Advanced Materials, January, 9-13, 2006, Anna University, Chennai
- [23] International Workshop on Nanoscience and Technology February, 13-17, 2006, Anna University, Chennai
- [24] International Symposium on Solid State Lighting, July, 21-22, 2006, Anna University, Chennai
- [25] National seminar on Crystal Growth – 11, SSN College of Engineering, Kalavakkam, Chennai 7<sup>th</sup> December, 2006
- [26] Second National Symposium on Nonlinear optical crystals and modeling in Crystal Growth, March, 26-27, 2007, Anna University, Chennai, India
- [27] Indo-German Workshop on Major aspects of Energy Research in India and Germany: The challenges for the Future, Anna University, June, 20-21, 2007, India
- [28] UGC-State level seminar on "Recent Advancements in Physics, 13-14, September, 2007 Sacred Hearts College, Tirupattur, India
- [29] Awareness on Nanoscience and Nanotechnology 19-20, September, 2007, Anna University, Chennai – 600 025
- [30] Workshop on Biomaterials and Biomineralisation, February, 1, 2008, Anna University, Chennai – 25
- [31] National Seminar on Recent Advances in Materials Science, February, 15-16, 2008, Cauvery College, Bharathidasan University, Trichy
- [32] National Seminar on Crystal Growth, December, 17-19, 2008 SSN College, Anna University, Chennai

- [33] International Physics Conference, 15-17, May, 2009, BUET, Dhaka, Bangladesh
- [34] National Conference on “Recent Trends in Crystal Growth, Thin Films and Nanostructured Materials”, August, 5-6, 2009, Adithanar College, Tiruchendur
- [35] International Workshop on Advances in Nanoscience and Technology, Anna University, Chennai, October, 28-30, 2009
- [36] National Symposium on Growth of Detector grade single crystals, November, 19-21, 2009, BARC, Mumbai
- [37] 14<sup>th</sup> National Seminar on Crystal Growth, 10 - 12 March, 2010, VIT, Vellore, India
- [38] International Conference on Emerging Technologies in Renewable Energy, 18-21, August, 2010, Anna University, Chennai, India
- [39] Indo-Italian Advanced Level workshop on Semiconductor Nanostructures, Ultrathin Films and Applications September, 8-10, 2010, Anna University, Chennai, India
- [40] Tamil Conference on Crystal Growth, Anna University, Chennai, October, 18-21, 2010
- [41] International Workshop on Advanced Functional Nanomaterials, 21-24, February, 2011, Anna University, Chennai, India
- [42] XV National Seminar on Crystal Growth, 23-25, February, 2011, PSN College of Engineering and Technology, Tirunelveli, India
- [43] International Conference on Optics, OPTICS, 11, May, 23-25, 2011, National Institute of Technology, Calicut, India.
- [44] Asia Pacific Workshop on Materials Characterization, Anna University, Chennai, September, 22-24, 2011
- [45] International Conference on Advanced Materials, 5-7, January, 2012, Loyola College, Chennai, India
- [46] 20<sup>th</sup> National Laser Symposium, Anna University, Chennai, January, 9-13, 2012
- [47] International workshop on Crystal Growth and Characterization of Advanced Materials, 17-19, December, 2012, Anna University, Chennai, India
- [48] National Seminar on Crystal Growth, 20-22, December, 2012, Anna University, Chennai, India

**Member of the following Scientific Society /Organization**

Life Member, Indian Association for Crystal Growth, **INDIA**

Member, Optical Society of America, **USA**

Member, British Association for Crystal Growth, **UK.**

Matching Member, American Physical Society, **USA**

Member, Society for Advancement of Electrochemical Science and Technology, **INDIA**

Executive Committee Member, Asian Society on Crystal Growth and Crystal Technology, **Japan**

Member, Indian Laser Association, **INDIA**

Fellow, Tamil Nadu Academy of Sciences, Chennai, **INDIA**

**Sponsored Research Projects:  
List of Research Scheme / Projects Investigating or completed**

Funding Agency	Title of the Project	Grant Number	Total Grant	Status
UGC	Development of Polymer-CdTe-TiO <sub>2</sub> based nano composites for low cost solar cells		Rs.13,92,000 /=	<b>Ongoing</b>
DST-JSPS	Fabrication of Tandem Structured Thermoelectric Devices using SiGe Related Alloy Semiconductors		Rs.4,72,000/=	Completed
DST-JSPS	Growth of homogenous SiGe alloy semiconductor for Thermoelectric application		Rs.4,56,000 /=	Completed
DST	Development of double tungstate single crystals for Raman Laser Devices		Rs.24,00,000 /=	Completed
DRDO	Development of Raman Lasers using Sodium based Double Tungstate crystals for LIDAR and Telecommunication applications		Rs.30,33,000 /=	Completed
DST	Development of Hybrid Solar Cells		Rs.18,50,000/=	Completed
UGC	Synthesis, Growth and characterization of nanostructured optoelectronic materials	F.No.31-56/2005 (SR) dt.27.03.2006	Rs. 4,79,000 /=	Completed
IUAC	Development of NLO Devices from Stoichiometric lithium niobate single crystals	NSC/XIII.7/UFUP-38303/2780 dt.29.08.2005	Rs.3,33,000/=	Completed
DST	Stoichiometric Lithium Niobate Single Crystals for advanced non-linear devices	SR/S2/LOP-16/2003 dt.24.2.2005	Rs.24,00,000/=	Completed
European Union	Human Resource Development in Telecommunication Technologies	ASIA-LINK-CN/Asia-Link/004 (81206) dt.9.11.2004	EURO 300,000 (Rs.1.6 crore)	Completed
AICTE	Synthesis and development of nano-crystalline Semi-conductor materials for advanced applications	F.No.8022/RID/NPR OJ/ RPS-125/2003-04 dt. 22.3.2004	Rs. 8,00,000/=	Completed
DAE (BRNS)	Development of Laser Elements of Double Tungstates for diode pumped solid state Laser Applications	No.2002/34/BRNS/1986 dt.27.01.2003	Rs.11,22,500/=	Completed
UGC	Fast Growth of CdTe and related compounds	F.No.12-95/2001(SR) dated 10.5.2001	Rs. 2,07,560 /=	Completed
AICTE	Development and fabrication of visible LED's, laser diodes and PICs for Advanced Electronics		Rs. 4,00,000 /=	Completed
TN.Govt	Crystal Growth and Development in Palm candy production		Rs. 1,09,200/=	Completed

<u>Research Scheme / Projects operated/ongoing as Co-Investigator</u>				
UGC	Growth and Characterization of NBT-BT Single Crystal for Piezoelectric application		Rs.9,78,800/=	Completed
CSIR	Growth and Characterization of AgGaS <sub>2</sub> and AgGaSe <sub>2</sub> Single crystals by Bridgman and CVT methods for NLO applications		Rs.11,84,000 /=-	Completed
DST	Growth and characterization of Borate based single crystals and fabrication of SHG elements	SR/S2/LOP-03/2003 18.08.2004	Rs. 41,14,614/=	Completed
DRDO	Growth and Characterisation of lead magnesium niobate –lead titanate (PMN-PT) and Lead Zirconium Niobate – Lead titanate (PZN-PT) single crystals for Sonar transducer applications		Rs.18,16,770/=	Completed
UGC	Growth and characterization of lead molybdated and lead tungstate single crystals for acousto-optic and scintillator applications		Rs. 4,05,060 /=-	Completed
DST	Growth of larger size and high quality single crystals of POM, MAP, TCP,NPP and L-PCA organic materials and their characterization for non-linear applications		Rs.6,99,000 /=-	Completed
CSIR	Growth of ZnSe and ZnSSe single crystals by CVT method with convection shield and their characterisation		Rs. 6,60,000 /=-	Completed
UGC	Experimental and Theoretical investigations on the electrodeposition of cadmium chalcogenides		Rs. 1,45,500 /=-	Completed

(a) Member of the Team

CGC-UGC:Anna University Facility **(ongoing)** **Rs. 7.00 crore**

DAE-NLP Growth of Laser and Non-linear crystals (completed) **Rs. 1.5 crore**

**Consultancy Work**

Consultancy for the development of Thin Film Solar cells based on CIS has been on the initial stage with Ms. Maharishi Solar Pvt. Ltd., New Delhi.

Consultancy on the Development of suitable growth technology for the high yield and improvement in the quality of the Palm Candy crystals has been initiated with the KVIC, Mumbai in collaboration with a NGO.



**Ph.D Thesis Completed**

S. No	Name of the Research Student	Year of Completion	Title of the thesis
1	Dr.N.Senguttuvan	1997	Some investigations on the growth of lead molybdate and lead tungstate single crystals and their charecterization.
2	Dr.A.M.Sembian	1999	Liquid phase epitaxy and characterization of thick related SiGe layers on Si(100) substrates and their applications to solar cells.
3	Dr.R.Kumaresan	2001	Novel 'Photochemical Deposition' and conventional 'Electrochemical Deposition' of CdS and Hg <sub>x</sub> Cd <sub>1-x</sub> Te semiconductor thin films and their characterization for solar cell applications
4	Dr.Premila Mohan	2001	Investigations on the bulk growth of InSb and InSbBi crystals by vertical Bridgman technique and their characterization.
5	Dr.M.Haris	2006	Growth of some III-V binary and ternary bulk crystals and effect of Sn ion implantation on InSb bulk substrates
6	Dr..P.Veeramani	2007	Investigation on growth and Characterization of CdTe and CdZnTe crystals and development of schottky barrier diode and high energy gamma ray detector.
7	Dr.P.Kumaresan	2008	Growth and characterization of KH <sub>2</sub> PO <sub>4</sub> (KDP) crystals doped with metal ion, dyes, amino acids and effect of swift heavy ion irradiation on doped KDP crystals.
8	Dr.(Ms).S.K.Geetha	2008	Effect of additives in nucleation kinetics and growth of potassium acid phthalate crystals (KAP) from solution and dielectric and Z-scan studies on grown crystals.
9.	Dr.A.Senthilkumaran	2008	Growth of Pure and Rare Earth (Nd <sup>3+</sup> and Yb <sup>3+</sup> ) doped Double Tungstates [KGd(WO <sub>4</sub> ) <sub>2</sub> ] and [KY(WO <sub>4</sub> ) <sub>2</sub> ] and their characterisation
10.	Dr.M.Abd el_Sadek	2009	Synthesis and Characterization of CdTe and CeTe-Related (Core-Shell) Nanocrystals
11.	Dr.R.Perumal	2009	Growth and Characterization of Allylthiourea based nonlinear optical and Glycine phosphite – Ferroelectric single crystals

12.	Dr.P.Kumar	2010	Growth of Lithium Niobate single crystals and Fabrication of nonlinear optical devices
13.	Dr.P.Samuel	2011	Investigation on rare earth ion doped solid state laser hosts: Single crystals and transparent ceramics
14.	Dr.V.Kathirvel	2011	Correlation between structural stability and electronic structure of f-electron based Intermetallic compounds under Pressure
15.	Dr.K.Senthilkumar	2011	Studies on Growth and Properties of Pure and doped (metals, rare earths, dyes and amino acid) Glycine Phosphite (GPI) Single Crystals
16.	Dr.D.Thangaraju	2012	Single Crystal Growth of $\text{Pr}^{3+}:\text{KGd}(\text{WO}_4)_2$ and Nano powder Synthesis of $\text{KRE}(\text{WO}_4)_2$ ( $\text{RE}=\text{La}^{3+}-\text{Lu}^{3+}$ ) and their Characterization

#### **Other Salient Achievements**

Program Manager for the EU-Asia Link Programme ongoing at Anna University.

Member of the different purchase processes initiated at Crystal Growth Centre.

Actively participated in the Entrance examination and Admission process of the Tamil Nadu professional courses.

Organising committee member of different short term and UGC- visitors programme being offered at Crystal Growth Centre.