

## CURRICULUM VITAE OF Dr. C. K. MAHADEVAN

1. **Name:** Dr. Chelliah Kamalakshiammal MAHADEVAN  
(Initial 'K' added later)

2. **Age and Date of Birth** : 60 years; July 25, 1958

3. **Permanent Address** : 4-134/B-39, Ananda Illam  
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4. **Sex** : Male

5. **Citizenship** : Indian; Passport No: P5457630  
(Valid up to November 02, 2026)

6. **Marital Status** : Married and having two children (Boys)

7. **Last Position** : Associate Professor of Physics [Also, Coordinator  
for Science Research] (Up to 31-01-2014)  
S. T. Hindu College, Nagercoil-629002  
[Affiliated to Manonmaniam Sundaranar University]

**Currently**, Professor of Physics, PSN College of Engineering and Technology (Autonomous),  
Tirunelveli-627152 [Affiliated to Anna University, Chennai] (From 25-09-2014)

### 8. Academic Qualifications:

Qualifications	Name of University (or) Institution	Year of Completion	Class Obtained
a) B.Sc. (Physics)	Madurai Kamaraj University	1978	First
b) M.Sc. (Physics – Theoretical Nuclear Physics)	Madras University	1980	First

- c) Ph.D. (Physics – I.I.T., Madras 1984 By Thesis  
Crystallography )

**Thesis Title** : “Structures of Some Dithiolene and Diphosphine Complexes”

**Thesis Adviser:** Dr.(Mrs.) M. Seshasayee

- d) D.Sc. (Physics- Madurai Kamaraj University 2002 By Thesis  
Crystallography)

**Thesis Title** : “1, 2 – Dithiolene Complexes of Transition Metals-Structural Systematics and Physical Properties”

**Thesis Adviser:** Self

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### 9. Other Academic Courses Attended:

- a) Workshop on Educational Television (ETV) Script Writing held during 4-7 April 1990 in the Audio Visual Research Centre, Madurai Kamaraj University, Madurai;
- b) UGC Refresher Course in Physics held during 1-17 April 1991 in the Department of Physics, Indian Institute of Science, Bangalore - 560 012;
- c) UGC Orientation Programme for Teachers held during 1-28 September 1993 in the Academic Staff College, Madras University, Madras – 600 005;
- d) Short Term Course on Teaching of History of Science held during 5-9 July 1995 in the Pondichery (Central) University, Pondichery;
- e) Orientation Programme on History of Science held during December 9-10, 1996 in the Manonmaniam Sundaranar University, Tirunelveli;
- f) XXX National Workshop on Radiochemistry and Applications of Radioisotopes held during 3-9 November 1997 at S.T. Hindu College, Nagercoil;
- g) UGC Refresher Course on Recent Trends in Crystal Growth held during 18 January - 7 February 1999 in the Crystal Growth Centre, Anna University, Chennai - 600 025;
- h) UGC Refresher Course in Physics (Condensed Matter Physics) during 11 October - 1 November 2000 in the Academic Staff College, University of Kerala, Thiruvananthapuram – 629 014; etc.

### 10. Ancillary Subjects Studied:

- a) Six full papers in Chemistry (covering all areas in Chemistry) at Undergraduate level and one full paper in Inorganic Chemistry (Covering co-ordination and solid state aspects) at Postgraduate level;
- b) Four full papers in Mathematics (covering all areas in Mathematics) at Undergraduate level and two full papers in Mathematical Physics at Postgraduate level;
- c) One paper (partial only) (covering the portions about proteins) in Biochemistry at Undergraduate level; etc.

### 11. Research Experience:

About 36 years with more than 32 years at postdoctoral level in the fields of:

- i) X-ray Crystallography (Crystal and Molecular Structure Analysis);
- ii) Crystal Growth and Characterization;

- iii) Alternate Energy Sources;
- iv) Semiconductor Nanomaterials;
- v) Nanocomposites;
- vi) Advanced Functional Nanomaterials;
- vii) Tamil Literature;
- viii) Higher Education; etc.

**Philosophy:** As per the facilities available, choose the field of research and problems for investigations and contribute to the maximum level possible. Try to improve the quality and quantity of research along with increasing the facilities.

## 12. Research Guiding Experience:

Guided 2 Postdoctoral Research Associates, (more than) 40 Ph.D., 116 M.Phil. and several other small (B.Sc. and M.Sc.) research projects. The major research field is ‘Solid State Materials - Crystalline and Nanostructured Materials (Condensed Matter Physics – Materials Synthesis and Characterization) ’.

## 13. Teaching Experience:

### i. Papers Taught: (Medium of instruction is English)

- a) Physics (theory and practical) for Higher Secondary School students;
- b) Physics (theory and practical covering all areas) for Chemistry and Mathematics Major Undergraduate students;
- c) Physics (theory and practical covering all areas) for Physics Major Undergraduate students;
- d) Solid State Physics, Spectroscopy, Nuclear Physics, Mathematical Physics, Quantum Mechanics, Materials Science, Crystalline Materials Science and Nanophysics for Physics Major Postgraduate students;
- e) History of Science, Environmental Science, Social Value Education and Personality Development (Foundation Course Papers) for Undergraduate students;
- f) Research Methodology, X-ray Crystallography, Crystal Growth and Characterization and Crystalline Materials Science for M.Phil and Ph.D. students;
- g) Synthesis of Nanomaterials and Characterization of Nanomaterials for Ph.D. students; etc.

### ii. Duration:

- a) 2 months at Higher Secondary level;
- b) More than 26 years at Undergraduate level;
- c) More than 31 years at Postgraduate level; etc.

### iii. Philosophy:

As per Students’ requirements, plan and execute the teaching.

## 14. Details of Employment:

Position held	Name of Institution	Period	Nature of Duties
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a)	Lecturer	Dept. of Nuclear Physics, Madras University, Chennai-600025	08.04.1985(AN) to 09.08.1985	Teaching and Research
b)	CSIR Pool Officer	School of Physics, Madurai Kamaraj University, Madurai-625021	16.02.1987 to 23.08.1987	Teaching and Research
c)	Assistant Professor(Lecturer, Senior Lecturer & Reader)	Dept. of Physics, S.T. Hindu College, Nagercoil- 629002 (Affiliated to Manonmaniam Sundaranar University)	24.08.1987 to 26.07.2001	Teaching and Research
d)	Associate Professor	”	27.07.2001 to 31-01-2014	Teaching and Research
e)	Professor	Center for Scientific and Applied Research, PSN College of Engineering and Technology, Tirunelveli- 627152 (Affiliated to Anna University)	25-09-2014 to Date	Teaching and Research

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## 15. Professional recognition, awards, fellowships received :

### A. Professional Recognition

- (i) (a) Life Member of the National Academy of Sciences, India and (b) Fellow of the Academy of Sciences, Chennai;
- (ii) First person to be awarded the highest degree (D.Sc. by thesis) in Physics in the Southern Tamilnadu and first and only (so far) awardee of the Madurai Kamaraj University;
- (iii) First person to publish research papers in international journals and produce Ph.D. degrees in Physics from any college affiliated to the Manonmaniam Sundaranar University, Tirunelveli;
- (iv) Fully responsible for the development of the Physics Department of S.T. Hindu College as a recognized research center;
- (v) Fully responsible for bringing the UGC's Innovative Programme (M.Sc. Nanoscience and Nanotechnology) [UGC has granted Rs. 47 lakhs and full salary for 1 teaching staff];
- (vi) Delivered several lectures in the Refresher Courses conducted by the Anna University, University of Kerala and Pondicherry (Central) University and in the

- neighbouring institutions to encourage research activity by the young teachers of colleges and universities;
- (vii) Authored the text books ‘History of Science’ – ‘Vignana Varalaru’ (Tamil version of the above, won the Tamilnadu State Government award), ‘Research Methodology’ and ‘Physics’ (for engineering students);
  - (viii) Organised 1 state level seminar (on Nanostructured Materials), 3 national conferences (one on Physics Curriculum Development and the other two on Crystalline Materials Science) and 1 national and 6 regional conferences (covering all subjects) at S.T. Hindu College, Nagercoil:
    - (a) South Indian Physics Teachers Convention (March 13-15, 1992)-TNSCST and IPS sponsored
    - (b) National Conference on Crystal Growth and Characterization (March 22-23, 2001)- UGC sponsored
    - (c) National Conference on Preparation and Characterization of Crystalline Materials (January 19-21, 2006) – UGC sponsored
    - (d) First Seminar of 1999-2000 of Mano Research Forum (25-09-1999)
    - (e) Second Seminar of 1999-2000 of Mano Research Forum (20-11-1999)
    - (f) Third Seminar of 1999-2000 of Mano Research Forum (22-01-2000)
    - (g) Fourth Seminar of 1999-2000 of Mano Research Forum (18-03-2000)
    - (h) First Seminar of 2000 -2001 of Mano Research Forum (12-01-2001)
    - (i) Second Seminar of 2000 -2001 and a Special Seminar on Environmental Biology of Mano Research Forum (10-03-2001)
    - (j) Sixth All India Conference of KAAS (September 10-11,2010)
    - (k) State Level Seminar on Nanostructured Materials (February 11-12, 2011)-TANSCHE sponsored
  - (ix) Chaired more than 50 sessions and delivered more than 70 Invited/Keynote Talks in national/international conferences held at various places in India;
  - (x) Edited and published : (1) “Proceedings of the South Indian Physics Teachers Convention (March 13-15, 1992)””; and (2) “Proceedings of the Mano Research Forum 2000”. Also, authored the chapter ‘Crystal Structure Analysis’ in “Horizons of Physics – Vol. II” published (1996) by New Age International Publishers, New Delhi;
  - (xi) Served as a
    - (a) Member of the Academic Excellence Committee, S.T. Hindu College;
    - (b) Member of the Advisory Committee for Physics, Malankara Catholic College;
    - (c) Member of the Board of Studies (Physics), Scott Christian College (Autonomous);
    - (d) Member of the Board of Studies (Physics), St. Xavier’s College (Autonomous);
    - (e) Member of the Board of Studies (P.G.Physics) Manonmaniam Sundaranar University, Tirunelveli;
    - (f) Member of the Board of Studies (UG Physics), Manonmaniam Sundaranar University, Tirunelveli;
    - (g) Member of the Board of Studies (M.Sc. Nanoscience and Nanotechnology), Manonmaniam Sundaranar University, Tirunelveli;

- (h) Member of Research Committee, PSN College of Engineering and Technology (Autonomous), Melathediyoor;
  - (i) Research Co-ordinator for Science, S.T. Hindu College;
  - (j) Member of the Board of Studies (Engineering Physics I & II and M.Sc. Materials Science course), PSN College of Engineering and Technology (Autonomous), Melathediyoor;
  - (k) Member of the Board of Studies (Physics), Sri GVG Vishalakshi College for Women (Autonomous), Udumalpet;
  - (l) Member of the Board of Studies (Nanoscience), Sarah Tucker College (Autonomous), Tirunelveli;
  - (m) Member of the Board of Studies (Physics), St. Mary's College (Autonomous), Thoothukudi;
  - (n) Chairman, Board of Studies for the School of Basic Engineering and Science, PSN College of Engineering and Technology (Autonomous), Tirunelveli; etc.
- (xii) Reviewer for the journals :
- (1) Spectrochimica Acta-Part A;
  - (2) Materials Letters;
  - (3) Crystal Growth and Design;
  - (4) Materials Chemistry and Physics;
  - (5) Physica B;
  - (6) Journal of Materials Science;
  - (7) Journal of Applied Physics;
  - (8) Indian Journal of Physics;
  - (9) Crystal Research and Technology;
  - (10) Philosophical Magazine Letters;
  - (11) Physica Status Solidi (b);
  - (12) Journal of Physics and Chemistry of Solids;
  - (13) Indian Journal of Pure and Applied Physics;
  - (14) Materials and Manufacturing Processes;
  - (15) Indian Journal of Science and Technology;
  - (16) Journal of Molecular Liquids;
  - (17) Indian Journal of Radio & Space Physics;
  - (18) Journal of Noncrystalline Solids;
  - (19) Journal of Thermal Analysis and Calorimetry;
  - (20) Journal of Crystallization Process and Technology;
  - (21) Materials Research Bulletin;
  - (22) Applied Physics A :
  - (23) Indian Journal of Engineering and Materials Sciences
  - (24) Asian Journal of Physics;
  - (25) IONICS;
  - (26) Journal of Optoelectronics and Advanced Materials;
  - (27) Nanoscience and Nanotechnology Letters;
  - (28) Journal of Alloys and Compounds;
  - (29) Physical Review and Research International;
  - (30) Journal of Materials Science:Materials in Electronics;

- (31) Surface Engineering;
- (32) Acta Physica Polonica A;
- (33) International Journal of Nanoscience;
- (34) Journal of Optics and Laser Technology;
- (35) Materials Research; etc.
- (xiii) Reviewed the following books for Tata McGraw Hill Education Private Ltd.
  - (a) Thermal Physics
  - (b) Concepts of Modern Physics
- (xiv) (a) Question paper setting and valuation done for B.Sc., M.Sc., M.Phil., M.Tech., and Ph.D. (Methodology papers) examinations (University)
- (b) Examined several M.Sc. and M.Phil. and 7 Ph.D. dissertations.
- (xv) Acted as the Coordinator of Mano Research Forum (Nagercoil Circle) of the Manonmaniam Sundaranar University, Tirunelveli for two years (1999-2001).
- (xvi) Selected as one of the Eminent Personalities of India by the International Biographical Research Foundation, India.
- (xv) Acted as the Coordinator for M.Sc. Nanoscience and Nanotechnology (UGC's Innovative) Programme for about 2 Semesters (in 2010).
- (xvi) Acted as the Coordinator for Science Research (S.T.Hindu College) for about 6 years (2008-2014).

## B. Awards

- (i) Certificate of Merit for the Proficiency in Mathematics (1973 – 1974);
- (ii) Dr. Kalyanasundaram Prize for the Proficiency in M.Sc. Practicals (1978 – 1980);
- (iii) Special Award for the Research work carried out at S.T. Hindu College from the Management of S.T. Hindu College (1995 – 1996);
- (iv) **Tamil Nadu State Government Award (1995) for the book “Vignana Varalaru” [‘History of Science’ in Tamil];**
- (v) Best Paper Presentation Award in National Conference on Preparation and Characterization of Crystalline Materials held at S.T. Hindu College, Nagercoil (January 19-21, 2006);
- (vi) Best Poster Presentation Award in Seminar on Future Trends in Materials and Characterization held at Loyola College, Chennai (February 28, 2006);
- (vii) Best Paper Presentation Award in National Conference on Crystal Growth for Electro-Optic Applications held at Karunya Institute of Technology and Sciences, Coimbatore (June 16 –17, 2006);
- (viii) **Research Award (2006) of University Grants Commission, New Delhi;**
- (ix) Best Paper Presentation Award in XI National Seminar on Crystal Growth held at SSN College of Engineering, Chennai (December 7 –9, 2006);
- (x) **Prof. P. Ramasamy National Award for Crystal Growth for the year 2006 from Indian Association for Crystal Growth;**
- (xi) Best Paper Presentation Award in 6<sup>th</sup> National Conference on Emerging Trends in Crystal Growth and Nano Materials held at Loyola College, Chennai (February 28 – 29, 2008);
- (xii) **Tamil Nadu Scientist Award (2008) from Tamilnadu State Government;**
- (xiii) **Best (College) Teacher Award (2008-2009) from Tamil Nadu State Government;**

- (xiv) **Academic Achievement Award (2010) from Kanniyakumari Academy of Arts and Sciences;**
- (xv) Best Poster Presentation Award in XXXIX National Seminar on Crystallography held at University of Jammu, Jammu (October 25-27, 2010);
- (xvi) Best Paper Presentation Award in National Seminar on Recent Trends in Physics held at Shivani Engineering College, Trichy (March 18 – 19, 2011);
- (xvii) Best Paper Presentation Award in National Conference on Exploring the Frontiers of Vibrational Spectroscopy held at Women’s Christian College, Nagercoil (September 1-2, 2011);
- (xviii) Best Paper Presentation Award in National Seminar on Current Trends in Materials Science held at NSS College, Changanacherry (March 07-08, 2012);
- (xix) **Life -Time Achiever Award (2012) from Scott Alumni Association;**
- (xx) Best Poster Presentation Award in National Seminar on New Materials Research and Nanotechnology held at Government Arts College, Ooty (September 12-14, 2012);
- (xxi) Best Paper Presentation Award in National Conference on Nanomaterials held at Karunya University, Coimbatore (December 3-4, 2012);
- (xxii) Two Best Paper Presentation Awards in National Conference on Advanced Materials held at St.Mary’s College, Thoothukudy (February 15-16, 2013);
- (xxiii) Best Paper Presentation Award in National Seminar on Novel Materials held at Shivani Engineering College, Tiruchirappalli (March 08, 2013);
- (xxiv) Best Paper Presentation Award in National Seminar on Recent Trends in Crystal Growth and Nano Materials held at National College, Tiruchirappalli (March 13-15, 2013);
- (xxv) Best Paper Presentation Award in International Conference on Advanced Nanomaterials & Emerging Engineering Technologies held at Sathyabama University, Chennai (July 24-26, 2013);
- (xxvi) Three Best Paper/Poster Presentation Awards in Second National Seminar on New Materials Research and Nanotechnology held at Government Arts College, Ooty (September 25-27, 2013);
- (xxvii) Best Paper Presentation Award in National Conference on Emerging Trends in Applied Physics held at Lekshmpuram College of Arts and Science, Neyyoor (February 19-20, 2015); etc.

### C. Fellowships / Associateships Awarded

- (i) Junior Research Fellowship (13-10-1980 to 12-10-1982) at Department of Physics, I.I.T. Madras, Chennai;
- (ii) Senior Research Fellowship (13-10-1982 to 31-07-1984) at Department of Physics, I.I.T. Madras, Chennai;
- (iii) CSIR Research Associateship (01-02-1985 to 08-04-1985 ) at Department of Physics, I.I.T. Madras, Chennai;
- (iv) Postdoctoral Fellowship (01-09-1985 to 31.08.1986) at Department of Biochemistry, University of California, Riverside, USA;
- (v) Visiting Scientist (18-03-1991 to 26-03-1991) at Crystal Growth Centre, Anna University, Chennai;

- (vi) Visiting Professor (25-09-2017 to 18-10-2017) at Photoelectric Functional Materials Engineering Research Center of the Ministry of Education, Changchun University of Science and Technology, Changchun, China; etc

## 16. Number of Publications

- (i) Research review article in international journal – 1;
- (ii) Original research papers in international journals – 226;
- (iii) Original research papers in international proceedings – 29;
- (iv) Articles in other journals / proceedings – 109;
- (v) Book chapter – 1;
- (vi) Books – 11 (Text books - 4 & Others - 7);
- (vii) Presentations in Conferences – 665 (including 71 invited talks and 3 keynote addresses); etc.

## 17. Funded Projects Availed:

- i) Preparation and properties of single crystals of some organic semi conductors – UGC sponsored - Rs.11,000/- (1989-1991);
- ii) [*Through his Ph.D. Scholar T.H. Freeda*] Studies on KDP single crystals added with some ammonium compounds – UGC sponsored – Rs.31,000/- (1997 – 1999);
- iii) Growth and characterization of  $(\text{NaCl})_x(\text{NaBr})_{y-x}(\text{NaI})_{1-y}$  single crystals – UGC sponsored - Rs.40,000/- (1998 – 2000);
- iv) Growth, structure and physical properties of ternary mixed crystals of potassium halides - TNSCST sponsored - Rs.2,23,000/- (1999 – 2002);
- v) In-vitro studies on some urinary crystals – CSIR sponsored - Rs.5,25,867/- (2000 – 2003);
- vi) Growth and characterization of some novel metal organic nonlinear optical crystals – DST sponsored - Rs.8,88,857/- (2001-2004);
- vii) In search of efficient NLO materials for defence applications – DRDO sponsored – Rs.14,96,000/- (2005 – 2008);
- viii) [*Through his Ph.D. Scholar M. Priya under Women Scientist Scheme*] Growth and characterization of multiphased and ternary mixed crystals of alkali halides – DST sponsored – Rs.9,30,000/- (2005 – 2008);
- (ix) Preparation and properties of nanocrystalline  $\text{Zn}_x\text{Cd}_{1-x}\text{S}$  – UGC sponsored – Rs.90,000/- (2006-2008);
- (x) Investigations on ZnS-ZnO nanocomposites – CSIR sponsored – Rs.9,42,180/- (2008-2011);
- (xi) Large size potassium bromide single crystal and alkali halide mixed crystal – Project jointly declared along with Prof. Jinghe Liu (Changchun University of Science and Technology, Changchun, China) and approved by the Jilin Provincial of Foreign Experts Affairs, China – (2017-2019); etc.

## 18. Significant Research Contributions Made

In my earlier research career (before joining S.T. Hindu College, Nagercoil), I have contributed enormously along with my Ph.D. Guide (Dr. M. Seshasayee) and some other workers in the field of X-ray Crystallography. After joining S.T. Hindu College, I switched

over to take up research work in the field of crystal (including nanocrystal) growth and characterization. In this field also, with very limited support available, I have contributed a lot along with my B.Sc., M.Sc., M.Phil. (from other institutions also) and Ph.D. students. In addition, I have contributed to some extent in the fields of alternate energy sources, higher education and Tamil literature.

In the field of X-ray crystallography (crystal structure analysis) I have determined the crystal and molecular structures of eighteen compounds and derived several useful results. Disproved the idea that bulky counterions lead to nonplanar structures. Observed, **for the first time**, mixed stacking and double stacking in some 1,2 – dithiolene complexes. Also, observed possible exchange interaction by means of diadic stacking. His analysis of the significance of the overall charge of  $[\text{Ni}(\text{mnt})_2]^{n-}$  shows that the ionic effect is prevalent in these systems. Observed that the charge donating efficiency of the phosphorous atoms in the 1, 2-diphosphine complexes is less when compared to that of the sulphur atoms in 1, 2- dithiolene complexes. Observed, **for the first time**,  $\lambda\lambda\lambda$  ring confirmation in some  $[\text{M}(\text{en})_3]^{2+}$  systems. In addition, **published an informative review article** on the structural systematics of 1, 2-dithiolene complexes of transition metals.

In the field of crystal growth and physicochemical characterization, I have contributed a lot. **Proposed a new method** (by growing the anthracene single crystals), gel-solution method, to grow organic compound single crystals using silica gel. Succeeded in growing thiourea, CdS,  $\text{KNO}_3$  and calcium tartrate tetrahydrate crystals in silica gel media. Grown by the free evaporation (solution) method K-PbBr<sub>2</sub>, Na- PbBr<sub>2</sub>, BTCC-BTCI, anhydrous sodium formate, hydrous barium succinate, sodium-potassium phthalate, calcium-barium succinates, sodium-potassium pentaborates,  $(\text{LHC})_x(\text{LHB})_{1-x}$ ,  $(\text{ZTS})_x(\text{MTS})_{1-x}$ ,  $\text{CaCd}(\text{SCN})_4$ ,  $\text{Zn}_x\text{Cd}_{(2-x)}(\text{SCN})_4$ ,  $\text{ZnHg}(\text{SCN})_4$ ,  $\text{CdHg}(\text{SCN})_4$ ,  $\text{Mg}_x\text{Zn}_{1-x}\text{SO}_4 \cdot 7\text{H}_2\text{O}$ ,  $\text{Ni}_x\text{Zn}_{1-x}\text{SO}_4 \cdot 7\text{H}_2\text{O}$  and  $\text{Ni}_x\text{Mg}_{1-x}\text{SO}_4 \cdot 7\text{H}_2\text{O}$  crystals, **for the first time**, and characterized them.

**Systematically studied** the effect of soluble impurities on **the homogeneous nucleation parameters** of several inorganic and organic crystals **and grouped the results into four rules**. Studied the effect of several impurities (both organic and inorganic) on the optical, electrical, thermal, etc properties of KDP, ADP,  $(\text{ADP})_x(\text{KDP})_{1-x}$ , TGS, ZTS, BTCC,  $\text{MnHg}(\text{SCN})_4$ ,  $\text{ZnCd}(\text{SCN})_4$ ,  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ ,  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$ , LAA, LAHCl, TGSP, p-MHB, glycine metal (Na/K) sulphates, strontium formate dihydrate, KAP, calcium succinate, potassium formate and calcium tartrate tetrahydrate single crystals and obtained several useful results. **Proposed a new method** (called seeded free evaporation method) to grow large size single crystals of  $\text{Na}_2\text{HPO}_4$ ,  $(\text{NH}_4)_2\text{HPO}_4$ , ADP, KDP, etc.

Several metal (Co, Mn, Ni, Cd, Cu, Sr, etc) malonate single crystals have been grown by the gel methods and characterized. Large size single crystals of GaTe and several organic materials like benzyl, naphthalene, 2-hydroxypyridine, 2-amino-5-chloropyridine, 2-methylamino-5-chlorobenzophenone and 2-hydroxy-4-methoxybenzophenone have been grown by the melt methods and characterized.

In-vitro studies made on urinary stone crystals (investigating the effect of drugs and vegetable and fruit juices on the formation of urinary stone crystals) may probably help to carry out further study in the treatment of urinary calculi.

L-arginine acetate, L-arginine oxalate, manganese malonate, cadmium malonate, nickel malonate, copper malonate,  $\text{MnHg}(\text{SCN})_4$ ,  $\text{CaCd}(\text{SCN})_4$ , 2-amino-5-chloropyridine, KDP (doped with urea and L-arginine) and  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  (doped with urea

or glycine) single crystals are **found to be low dielectric constant value dielectric materials.**

Non-stoichiometric single crystals of  $K_3BaCl_5 \cdot 2H_2O$ ,  $K_3CaCl_5 \cdot 2H_2O$  and  $Na_3CaCl_5 \cdot 2H_2O$  have been grown, **for the first time**, and found that non-stoichiometric  $K_3BaCl_5 \cdot 2H_2O$  is a dielectric material and the other two are **ionic conductors**. It is understood that a journey from dielectric material to ionic conductor is possible when we are able to prepare highly non-stoichiometric complex crystals by combining an alkali halide and an alkaline earth metal halide.

Grown multiphased ternary mixed crystals of alkali halides, **for the first time**, and found that these crystals have more hardness and more dielectric constant and are more stable than the end member and monophased mixed crystals. Also, **with the collaboration** of research workers from **Changchun University of Science and Technology**, China, **grown** by the Czochralski method **and characterized large size (weighing about 5 kg) single crystals of  $KCl_{1-x}Br_x$ .**

The depth profile study made on II-VI compound added alkali halide crystals indicated that the dopant addition creates different layers along the crystal with increase of dopant content from the top to bottom. The crystals cut into thin wafers will be highly useful for devices as each wafer will have different physical properties. Ultimately the **study indicated that a series of materials with different properties can be prepared in a single growth experiment.**

**Designed and used** a simple and low cost crystal sample holder to carry out the electrical measurements (both AC and DC) by the two-probe (parallel plate capacitor) method. When the area of crystal sample touching the electrode is smaller than the plate area, correction for the air capacitance has to be done. So, **a new formula was derived** by me **to estimate the dielectric constant** which is often called as **Mahadevan's formula/relation.**

**Proposed a new simple solvothermal method using a domestic microwave oven** (often called as **Mahadevan's method**) to prepare nanostructured materials. **Succeeded in preparing (with good yield, good quality and useful physical properties) pure and doped nanoparticles** of ZnO, ZnS, CdO, Cd(OH)<sub>2</sub>, CdCO<sub>3</sub>, CdS, CdSe, PbS, PbO, NiO, NiS, NiS<sub>1.03</sub>, Ni(OH)<sub>2</sub>, Mn<sub>3</sub>O<sub>4</sub>, MnS<sub>2</sub>, Co<sub>3</sub>O<sub>4</sub>,  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>, Cu<sub>9</sub>S<sub>5</sub>, CuS, CuO, etc and **nanocomposites** of PbO-PbS, CdS-CdSe, ZnS-CdS, ZnO-CdS, ZnO-ZnS, ZnO-CdO, CdCO<sub>3</sub>-Mn<sub>3</sub>O<sub>4</sub>, CdS-MnS<sub>2</sub>, Ni(OH)<sub>2</sub>-Mn<sub>3</sub>O<sub>4</sub>, Mn<sub>3</sub>O<sub>4</sub>-MnS<sub>2</sub>, etc (all without and with impurity added) by using the above method and cheaper chemicals. Nanoparticles of ZnO, ZnS, CdO and CdS could also be **prepared (with good yield, good quality and useful physical properties) at room temperature** by using NaOH as the capping agent.

Succeeded in preparing **water soluble (slightly) ZnS and CdS nanoparticles (normally insoluble in water)** by using Mahadevan's method with ethylene diamine as the capping agent. The **SHG efficiency of ADP and KDP single crystals could be increased and dielectric constant could be decreased significantly** by adding water soluble ZnS and CdS as impurities to them. Succeeded in forming **high quality PVA polymer film sheets** by a simple low-cost solution casting method and found that the use of **different solvents** leads the PVA film to possess **different optical and electrical properties**. Moreover, succeeded in preparing **ZnO/CuO nanoparticles dispersed PVA polymer (nanocomposite) films.**

Found that the  $Zn_xCd_{1-x}O:Mn$  nanocrystals are dilute magnetic semiconductor (DMS) materials with ferromagnetic order at room temperature. Discovered that forming two – component nanocomposites with ZnO and ZnS and with ZnO and CdS leads to strong enhancement in photoluminescence yield and consequently to new useful materials for photonic applications. Found that amorphous phase of  $\gamma-Fe_2O_3$  nanoparticles exhibits super paramagnetism. Discovered that doping with Mn enhances the coercivity of  $\alpha-Fe_2O_3$  nanoparticles by more than seven times. Succeeded in preparing all the five phases (amorphous,  $\alpha$ -,  $\beta$ -,  $\gamma$ - and  $\epsilon$ -) of  $Fe_2O_3$  nanoparticles with high purity by Mahadevan's method. Also, succeeded in preparing all the four phases (amorphous,  $\alpha$ -,  $\beta$ - and  $NiS_{1.03}$ ) of NiS nanoparticles with high purity by Mahadevan's method. Discovered that anionic doping makes  $\alpha-NiS$  nanocrystals a better electrochemical sensing performer.

#### ***CURRENT INTEREST***

Very much interested in developing new low-cost and non-toxic pure & hybrid ferrite-polymer nanocomposites for highly efficient clean energy storage, photonic and EMI shielding, etc devices. Also interested in developing pure and hybrid alkali halide nanocrystals.

#### ***SOME PROPOSALS FOR THE FUTURE***

- (1) Development of new low-cost and clean ferrite-polymer nanocomposites for EMI shielding, energy storage and photonic applications
- (2) Development of pure and hybrid alkali halide nanocrystals

#### **19. Fellowship / Membership in Professional Societies:**

- i) Life Member of The National Academy of Sciences, India (NASI);
- ii) Fellow of The Academy of Sciences, Chennai (ASCC);
- iii) Fellow (Life Member) of the Indian Chemical Society (ICS);
- iv) Life Member of the Indian Association of Physics Teachers (IAPT);
- v) Life Member of the Indian Association for Crystal Growth (IACG);
- vi) Life Member of the Indian Physical Society (IPS) [Council Member (1993-1996) and Vice President (2005 – 2006)];
- vii) Fellow (Life Member) of the Optical Society of India (OSI);
- viii) Life Member of the Materials Research Society of India (MRSI);
- ix) Life Member of the Solar Energy Society of India (SESI);
- x) Founder Vice President, Conference Organising Committee Member and Editorial Board Member of the Kanniyakumari Academy of Arts and Sciences (KAAS) (1996-Date);
- xi) Member of the American Physical Society (APS) (1990-1997);
- xii) Life Member of the Indian Science Congress Association (ISCA);
- xiii) Life Member of the Indian Physics Association (IPA);
- xiv) Fellow (Life Member) of The Society for Advancement of Electrochemical Science and Technology (SAEST);
- xv) Member of the Materials Research Society of Singapore (MRS-S) (2011-2013) etc.

#### **20. Travel to or Work in Abroad:**

- (i) Have worked as a Postdoctoral Fellow in the Department of Biochemistry,

University of California, Riverside, California, USA for one year from September 1, 1985 to August 31, 1986.

- (ii) Visited National University of Singapore and presented 4 research papers in the International Conference on Materials for Advanced Technologies (June 26-July 01, 2011) held at Suntec, Singapore.
- (iii) Have worked as a Visiting Professor in the Photoelectric Functional Materials Engineering Research Center of the Ministry of Education at Changchun University of Science and Technology, Changchun, China for 24 days from September 25 to October 18, 2017.

## 21. Languages Known:

- i) Tamil : To read, write, speak and comprehend well (Mother tongue) (Part I up to B.Sc. Course);
- ii) English : To read, write, speak and comprehend well (Part II up to B.Sc. Course);
- iii) Hindi : To read and write (Pradhamic passed);
- iv) Malayalam : To speak; etc.

## 22. Co-curricular and Extra-curricular Activities:

- i) Awarded Second Prize in Long Jump (Junior) (1974-1975);
- ii) Member of the Social Service League of Scott Christian College, Nagercoil -3 (1974-1975);
- iii) Member of the Planning Forum of Scott Christian College, Nagercoil-3 (1974-1975);
- iv) Member of the Student Union for Mathematics in Scott Christian College, Nagercoil-3 (1974-1975);
- v) Member of the Student Union for Chemistry in Pioneer Kumaraswamy College, Nagercoil-3 (1977-1978);
- vi) Founder, Secretary and Treasurer of Sivajeevaswamy Trust (1987-2008);
- vii) President of Kamarajar Nagar Colony Residential Association (1997-2002);
- viii) Life Member of Scott Alumni Association; etc.

## 23. Contributions to the Society

Organised 1 state level seminar (on Nanostructured Materials), 3 national conferences (one on Physics Curriculum Development and the other two on Crystalline and Nanostructured Materials Science) and 1 national and 6 regional conferences (covering all subjects) at S.T. Hindu College, Nagercoil. Acted as the Coordinator of Mano Research Forum (Nagercoil Circle) of the Manonmaniam Sundaranar University, Tirunelveli for two years (1999-2001).

More than 31 years teaching experience and taught all papers for B.Sc. (Major and Allied Physics) students and Solid State Physics, Spectroscopy, Nuclear Physics, Mathematical Physics, Quantum Mechanics, Crystalline Materials Science and Nanophysics for M.Sc. (Physics) students. Also, have taught Research Methodology, X-ray Crystallography, Crystal Growth and Characterization, Crystalline Materials Science and Nano Materials Science for M.Phil. and Ph.D. students. In addition, have rich

experience in serving as a question paper setter and examiner (at University level) for B.Sc., M.Sc., M.Phil. and Ph.D. examinations (including assessment of M.Phil., M.Tech., and Ph.D. dissertations).

Have rich experience in Curriculum Development. Have served as a Member of the Academic Excellence Committee, S.T. Hindu College as well as Member of Board of Studies (Physics), Scott Christian College (Autonomous), Member of Board of Studies (Physics), St. Xavier's College (Autonomous) and Member of the Board of Studies (P.G. and UG Physics), Manonmaniam Sundaranar University, Tirunelveli. Also, served as a Member of Research Committee and Board of Studies, PSN College of Engineering and Technology (Autonomous), Member of the Board of Studies (M.Sc.Nanoscience and Nanotechnology), Manonmaniam Sundaranar University, Tirunelveli, Member of the Board of Studies (Physics), Sri GVG Vishalakshi College for Women (Autonomous), Udumalpet, Member of the Board of Studies (Physics), St. Mary's College (Autonomous), Tuticorin, Member of the Board of Studies (Nanoscience), Sarah Tucker College (Autonomous), Tirunelveli, Research Co-ordinator for Science, S.T. Hindu College and Chairman, Board of Studies, PSN College of Engineering and Technology (Autonomous), Tirunelveli. In addition, have done good service in my capacity as the Founder Vice-President, Conference Organising Committee Member and Editorial Board Member of Kanniyakumari Academy of Arts and Sciences (KAAS) (1996 - Date).

Have delivered several lectures in the neighbouring institutions to encourage research activity by the Physical Sciences teachers of these institutions. Also, have delivered lectures in several refresher courses organized by the Anna University, Kerala University and Pondichery (Central) University. Served as a Member of Advisory/ Technical/ Organising Committee for various National/International Conferences held at several places in India.

In addition, have done good service to the society in the capacity as the Founder, Secretary and Treasurer of the Sivajeevaswamy Trust (1987 – 2008) and as the President of Kamarajar Nagar Colony Residential Association (1997-2002).

Thus, contributed a lot to the society on the whole and, in particular, to the learning society (mainly faculty and students of Physical Sciences).

#### **24. Chairmanship in Conferences:**

1. VIII National Seminar on Crystal Growth (February 1999) held at Anna University, Chennai
2. Symposium on Crystal Growth of Laser Related Materials (August 2000) held at Anna University, Chennai
3. National Conference (in Tamil) on Crystal Growth (August 2000) held at Anna University, Chennai
4. Symposium on Fundamentals of Crystal Growth (November 2000) held at Anna University, Chennai
5. IX National Seminar on Crystal Growth (February 2003) held at Anna University, Chennai

6. International Workshop on Crystal Growth and Characterization of Technologically Important Materials (February 2004) held at Anna University, Chennai
7. First All India Conference of KAAS (September 2004) held at Scott Christian College, Nagercoil
8. First Multidisciplinary National Seminar of Scott Research Forum (September 2004) held at Scott Christian College, Nagercoil
9. Tenth National Seminar on Crystal Growth (January 2005) held at Kongu Engineering College, Erode
10. Symposium on Nonlinear Optical Crystals and Modelling of Crystal Growth (February 28 – March 1, 2005) held at Anna University, Chennai.
11. National Symposium on Crystal Growth and Characterization (September 29-30, 2005) held at Loyola College, Chennai
12. Second All India Conference of KAAS (October 21, 22 2005) held at Scott Christian College, Nagercoil;
13. Second National Symposium on Crystal Growth of Laser Related Materials (December 19-20, 2005) held at SSN College of Engineering, Chennai
14. Second National Conference on Crystal Growth (in Tamil) (December 21, 2005) held at SSN College of Engineering, Chennai
15. National Seminar on Post Tsunami Changes On Marine System, Environment and Socio Economic Status of Coastal People (March 17-18, 2006) held at Lekshmipuram College of Arts and Science, Nayyoor;
16. National Conference on Crystal Growth for Electro-Optic Applications (June 16-17, 2006) held at Karunya Institute of Technology and Sciences, Coimbatore
17. Eleventh National Seminar on Crystal Growth (December 7-9, 2006) held at SSN College of Engineering, Chennai
18. Second National Symposium on Nonlinear Optical Crystals And Modelling in Crystal Growth (March 26-27, 2007) held at Anna University, Chennai
19. Second International Conference on Emerging Adaptive Systems and Technologies (October 25-27, 2007) held at Noorul Islam College of Engineering, Kumaracoi
20. Twelfth National Seminar on Crystal Growth (December 21-23, 2007) held at SSN College of Engineering, Chennai
21. 6<sup>th</sup> National Conference on Emerging Trends in Crystal Growth and Nano Materials (February 28-29, 2008) held at Loyola College, Chennai
22. National Seminar on Global Warming and Impact on Environment along Indian Ocean (August 2008) held at Lekshmipuram College of Arts and Science, Neyyoor
23. First International Conference of KAAS (December 5-6, 2008) held at Women's Christian College, Nagercoil
24. Thirteenth National Seminar on Crystal Growth (January 27-29, 2009) held at SSN College of Engineering, Chennai
25. National Seminar on Crystalline Materials and Nanotechnology (February 26-27, 2009) held at Malankara Catholic College, Mariagiri
26. National Conference on Advanced Materials – Processing, Characterization and applications (August 27-29, 2009) held at PSN college of Engineering and Technology, Triunelveli

27. Fifth All India Conference of KAAS (December 4-5, 2009) held at Holy Cross College, Nagercoil
28. UGC sponsored National Conference on Recent and Emerging Developments in Physics (January 7-9, 2010) held at Women's Christian College, Nagercoil.
29. XIV National Seminar on Crystal Growth (March 10-12, 2010) held at VIT University, Vellore
30. Sixth All India Conference of KAAS (September 10-11, 2010) held at S.T.Hindu College, Nagercoil
31. Conference on Crystal Growth Science and Technology (in Tamil) (October 18-19, 2010) held at Anna University, Chennai
32. State Level Seminar on Nanostructured Materials (February 11-12, 2011) held at S.T.Hindu College, Nagercoil
33. National Seminar on Recent Trends in Physics (March 18 – 19, 2011) held at Shivani Engineering College, Trichy
34. National Seminar on Luminescent and Lasing Materials (August 19-21, 2011) held at St. Aloysius College, Edathua
35. National Conference on Exploring the Frontiers of Vibrational Spectroscopy (September 1-2, 2011) held at Women's Christian College, Nagercoil
36. Seventh All India Conference of KAAS (September 16-17, 2011) held at Women's Christian College, Nagercoil
37. State Level Seminar on Culture and Health (October 3-4, 2011) held at S.T.Hindu College, Nagercoil
38. National Conference on Recent Trends in Arts, Science and Management (February 17, 2012) held at Women's Christian College, Nagercoil
39. National Conference on Physics of New Materials (April 20-21, 2012) held at Noorul Islam University, Kumaracoil
40. National Seminar on New Materials Research and Nanotechnology (September 12-14, 2012) held at Government Arts College, Ooty
41. Eighth All India Conference of KAAS (October 5-6, 2012) held at Sree Ayyappa College for Women, Chunkankadai
42. III National Conference on Advanced Materials – Processing, Characterization and Applications (January 23-25, 2013) held at PSN College of Engineering and Technology, Tirunelveli
43. National Conference on Advanced Materials (February 15-16, 2013) held at St. Mary's College, Tuticorin
44. National Seminar on Recent Trends in Crystal Growth and Nano Materials (March 13-15, 2013) held at National College, Tiruchirappalli
45. National Conference on Innovative Trends in Materials Science (August 23-24, 2013) held at Arignar Anna College, Aralvoimozhi
46. Second International Conference of KAAS (September 20-21, 2013) held at Sree Ayyappa College for Women, Chunkankadai
47. Second National Seminar on New Materials Research and Nanotechnology (September 25-27, 2013) held at Government Arts College, Ooty
48. National Seminar on Spectroscopic Techniques and its Applications for Material Characterization (October 03-04, 2013) held at University of Kerala, Thiruvananthapuram

49. XVIII National Seminar on Crystal Growth (February 24-26, 2014) held at SSN College of Engineering, Chennai
50. National Conference on Emerging Trends in Applied Physics held at Lekshmipuram College of Arts and Science, Neyyoor (February 19-20, 2015);
51. National Conference on Graphene and Liquid Crystals for Smart Nanoengineering Applications held at Saveetha Engineering College, Thandalam (November 7-9, 2016);
52. XXII National Seminar on Crystal Growth and Applications held at Sacred Heart College, Tirupattur (January 29-31, 2018); etc.

## **25. Conferences Attended and/or Papers Presented:**

### **I. Regional level**

1. Workshop on Identification of Thrust Areas and Curriculum Development for Resource Utilization (July 1992) held at Manonmaniam Sundaranar University, Tirunelveli (One paper presented);
2. First Meeting of the Mano Research Forum (Nagercoil Circle) (August 1998) held at Scott Christian College, Nagercoil (One paper presented);
3. Second Meeting of the Mano Research Forum (Nagercoil Circle) (November 1998) held at S.T. Hindu College, Nagercoil (Two papers presented);
4. Fourth Meeting of the Mano Research Forum (Nagercoil Circle) (April 1999) held at N.M. Christian College, Marthandam (One paper presented);
5. First Seminar of 1999-2000 of the Mano Research Forum (Nagercoil Circle) (September 1999) held at S.T. Hindu College, Nagercoil (Five papers presented);
6. Second Seminar of 1999-2000 of the Mano Research Forum (Nagercoil Circle) (November 1999) held at S.T. Hindu College, Nagercoil (Two papers presented);
7. Third Seminar of 1999-2000 of the Mano Research Forum (Nagercoil Circle) (January 2000) held at S.T. Hindu College, Nagercoil (Two papers presented);
8. Thirukkural Vizhipunarvu Karutharangam (January 2000) held at S.T. Hindu College, Nagercoil (One paper presented);
9. Fourth Seminar of 1999-2000 of the Mano Research Forum (Nagercoil Circle) (March 2000) held at S.T. Hindu College, Nagercoil (Three papers presented);
10. First Seminar of 2000-2001 of the Mano Research Forum (Nagercoil Circle) (January 2001) held at S.T. Hindu College, Nagercoil (Four papers presented);
11. Second Seminar of 2000-2001 of the Mano Research Forum (Nagercoil Circle) (March 2001) held at S.T. Hindu College, Nagercoil (Four papers presented);
12. One Day Seminar on Radiation Physics (January 2005) held at S.T. Hindu College, Nagercoil;
13. State Level Seminar on Global Challenges in Higher Education – Let us Face it with New Vistas (March 2005) held at S.T. Hindu College, Nagercoil;
14. Seminar on Nano Materials (March 2008) held at S.T. Hindu College, Nagercoil;
15. State Level Seminar on Emerging Trends in Nanotechnology (September 29, 2008) held at Pioneer Kumaraswamy College, Nagercoil (One invited Lecture delivered);

16. State Level Seminar on Crystal Growth and Nanotechnology (October 18, 2008) held at Aditanar College of Arts and Science, Tiruchendur (One Invited Lecture delivered);
17. One Day Seminar on Crystal Growth and Nanotechnology (March 6, 2009) held at Sree Ayyappa College for Women, Chunkankadai (One invited talk presented);
18. Seminar on Natural Radioactivity (January 19, 2010) held at S.T.Hindu College, Nagercoil;
19. State Level Seminar on Nanostructured Materials(February 11-12, 2011) held at S.T.Hindu College, Nagercoil (One Invited Lecture delivered);
20. Seminar on Nanoscience and Nanotechnology (May 05, 2011) held at Udaya College of Engineering, Vellamodi (One Invited Lecture delivered);
21. State Level Seminar on Culture and Health (October 3-4, 2011) held at S.T.Hindu College, Nagercoil;
22. One Week Workshop on Nanotechnology in Engineering Applications (November 14-19, 2011) held at Government College of Engineering, Tirunelveli(One Invited Lecture delivered);
23. One Day Seminar on Nanophysics (February 08, 2012) held at Malankara Catholic College, Mariagiri (One Invited Lecture delivered);
24. Seminar on Nanoscience and Nanotechnology (March 10, 2014) held at Udaya College of Engineering, Vellamody (One Invited Lecture delivered);
25. Interactive Workshop on Faculty Research Initiatives (December 8-9, 2014) held at PSN College of Engineering and Technology, Tirunelveli (One Invited Lecture delivered);
26. National Science Day Seminar (February 27, 2015) held at KCG College of Techology, Chennai (One Invited Lecture delivered);
27. One Day Lecture Workshop on Applications and Development of Advanced Materails (March 23, 2018) held at St. John's College, Palayamkottai (One Invited Lecture delivered); etc

## II. National level

1. VI Annual Symposium in Chemistry (March 1981) held at I.I.T., Madras;
2. XIII National Seminar on Crystallography (March 1982) held at Nagpur University, Nagpur (One paper presented);
3. XIV National Seminar on Crystallography (December 1982) held at I.I.T., Kharagpur (One paper presented);
4. Special Symposium on Molecular Biocrystallography in honour of Prof. G.N. Ramachandran (December 1982) held at Madras University, Madras;
5. Conference on Semiconductors and Related Technology (September 1983) held at I.I.T., Madras;
6. XV National Seminar on Crystallography and Special Symposium in Honour of Prof. S. Ramaseshan (April 1984) held at I.I.Sc., Bangalore (Twelve papers presented);
7. IV National Seminar on Crystal Growth (August 1989) held at University of Mysore, (One paper presented);
8. Symposium on Crystal Nucleation, Solution Growth and Surface Morphology (January 1990) held at Anna University, Madras (Two papers presented);

9. National Seminar on Crystal Growth of High  $T_c$  Superconductors (May 1990) held at Anna University, Madras;
10. XXII National Seminar on Crystallography (December 1990) held at I.A.C.S., Calcutta (One paper presented);
11. VI Annual Convention of IAPT (November 1991) held at American College, Madurai (One paper presented);
12. III Annual General Meeting of the MRSI (February 1992) held at I.I.Sc., Bangalore (Three papers presented);
13. South Indian Physics Teachers Convention (March 1992) held at S.T. Hindu College, Nagercoil (One paper presented);
14. IV Annual General Meeting of the MRSI (February 1993) held at Regional Research Laboratory (CSIR), Trivandrum (Three papers presented);
15. V National Seminar on Crystal Growth (November 1993) held at Anna University, Madras (Six papers presented);
16. National Conference on Fundamentals of Crystal Growth (January 1996) held at Anna University, Madras (Three papers presented);
17. XXXIII Annual Convention of Chemists (December 1996) held at P.S.G. College of Technology, Coimbatore (One paper presented);
18. VII National Seminar on Crystal Growth (January 1997) held at Alagappa University, Karaikudi (Ten papers presented);
19. XXVIII National Seminar on Crystallography (September 1997) held at Mahatma Gandhi University, Kottayam (Thirteen papers presented);
20. IX Annual General Meeting of the MRSI (February 1998) held at I.I.T. Madras, Chennai (Two papers presented);
21. Seminar cum Workshop on Materials and Characterization (July 1998) held at Central Electrochemical Research Institute, Karaikudi (Three papers presented);
22. XXIX National Seminar on Crystallography (December 1998) held at Madras University, Chennai (Two papers presented);
23. VIII National Seminar on Crystal Growth (February 1999) held at Anna University, Chennai (Five papers including one invited talk presented);
24. XXX National Seminar on Crystallography (June 2000) held at Sri Venkateswara University, Tirupati (Three papers presented);
25. Symposium on Crystal Growth of Laser Related Materials (August 2000) held at Anna University, Chennai (Three papers presented);
26. National Conference (in Tamil) on Crystal Growth (August 2000) held at Anna University, Chennai (One Invited Talk presented);
27. Symposium on Fundamentals of Crystal Growth (November 2000) held at Anna University, Chennai (Three papers presented);
28. National Conference on Crystal Growth and Characterization (March 2001) held at S.T. Hindu College, Nagercoil (Nine papers including one invited talk presented);
29. XIII Annual General Meeting of the MRSI (February 2002) held at Defence Metallurgical Research Laboratory (DRDO), Hyderabad (Four papers presented);

30. XIV Annual General Meeting of the MRSI (February 2003) held at Bhabha Atomic Research Centre, Mumbai (Four papers presented);
31. IX National Seminar on Crystal Growth (February 2003) held at Anna University, Chennai (Twenty three papers including one invited talk presented);
32. XI National Convention of Electrochemists (December 2003) held at Bishop Heber College, Tiruchirappalli (Two papers presented);
33. XXXIII National Seminar on Crystallography (January 2004) held at National Chemical Laboratory, Pune (Thirteen papers presented);
34. XV Annual General Meeting of the MRSI and Symposium on Materials for Light and Smart Structures (February 2004) held at Banaras Hindu University, Varanasi (Four papers presented);
35. National Seminar on Modern Trends in Applied Spectroscopy (March 2004) held at Annamalai University, Annamalainagar (One paper presented);
36. First All India Conference of KAAS (September 2004) held at Scott Christian College, Nagercoil (Four papers presented);
37. First Multidisciplinary National Seminar of Scott Research Forum (September 2004) held at Scott Christian College, Nagercoil (Three papers presented);
38. National Seminar on Growth and Characterization of Solid Materials (November 2004) held at Nagpur University, Nagpur (One paper presented);
39. Fourth DAE-BRNS National Laser Symposium (January 2005) held at Bhabha Atomic Research Centre (BARC), Mumbai (Two papers presented);
40. Tenth National Seminar on Crystal Growth (January 2005) held at Kongu Engineering College, Erode (Four papers presented);
41. XVI Annual General Meeting of the MRSI and Symposium on Materials for Automotive Industries (February 2005) held at National Chemical Laboratory, Pune (Four papers presented);
42. Symposium on Nonlinear Optical Crystals and Modelling of Crystal Growth (February 28 – March 1, 2005) held at Anna University, Chennai. (Four papers including one invited talk presented);
43. National Conference on Optics and Related Phenomena (August 29-30, 2005) held at S.N. College, Kollam (Two papers presented);
44. National Symposium on Crystal Growth and Characterization (September 29-30, 2005) held at Loyola College, Chennai (One invited talk presented);
45. National Seminar on Recent Advances in Nano Science and Technology (September 29-30, 2005) held at Periyar University, Salem (One paper presented);
46. Second All India Conference of KAAS (October 21, 22 2005) held at Scott Christian College, Nagercoil (Two papers presented);
47. Second National Symposium on Crystal Growth of Laser Related Materials (December 19-20, 2005) held at SSN College of Engineering, Chennai (One invited talk presented);
48. Second National Conference on Crystal Growth (in Tamil) (December 21, 2005) held at SSN College of Engineering, Chennai (One invited talk presented);

49. National Conference on Preparation and Characterization of Crystalline Materials (January 19-21, 2006) held at S.T. Hindu College, Nagercoil (Fifteen papers including 1 invited talk presented);
50. Seminar on "Future Trends in Materials and Characterization" (February 28, 2006) held at Loyola College, Chennai (One paper presented);
51. National Seminar on Post Tsunami Changes On Marine System, Environment and Socio Economic Status of Coastal People (March 17-18, 2006) held at Lekshmipuram College of Arts and Science, Neyyoor;
52. National Conference on Crystal Growth for Electro-Optic Applications (June 16-17, 2006) held at Karunya Institute of Technology and Sciences, Coimbatore (Six papers including one invited talk presented);
53. National Conference on Advances in Technologically Important Crystals (October 12 – 14, 2006) held at University of Delhi, New Delhi (Three papers presented);
54. Eleventh National Seminar on Crystal Growth (December 7-9, 2006) held at SSN College of Engineering, Chennai (Six papers including one invited talk presented);
55. Second National Symposium on Nonlinear Optical Crystals And Modelling in Crystal Growth (March 26-27, 2007) held at Anna University, Chennai (Three papers including one invited talk presented);
56. National Conference on Recent Trends in Optoelectronics and Laser Technology (April 9-11, 2007) held at University of Kerala, Thiruvananthapuram (Three papers presented);
57. Regional Level Seminar on Crystal Growth and Nanoscience with National Level Participation (August 30-September 1, 2007) held at Aditanar College of Arts and Science, Tiruchendur (Six papers including one invited talk presented);
58. Twelfth National Seminar on Crystal Growth (December 21-23, 2007) held at SSN College of Engineering, Chennai (Six papers including one invited talk presented);
59. National Conference on Advances in Materials Science (February 4-5, 2008) held at Manonmaniam Sundaranar University, Tirunelveli (One paper presented);
60. 6<sup>th</sup> National Conference on Emerging Trends in Crystal Growth and Nano Materials (February 28-29, 2008) held at Loyola College, Chennai (Three papers including one invited talk presented);
61. National Seminar on Global Warming and Impact on Environment along Indian Ocean (August 22-23, 2008) held at Lekshmipuram College of Arts and Science, Neyyoor;
62. National Seminar on Crystal Growth of Laser and Nonlinear Optical materials (September 25-26, 2008) held at National College, Tiruchirappalli (One paper presented);
63. Thirteenth National Seminar on Crystal Growth (January 27-29, 2009) held at SSN College of Engineering, Chennai (Twelve papers including one invited talk presented);

64. National Seminar on Applications of Computer Science (February 25-27,2009) held at University Institute of Technology (University of Kerala), Neyyattinkara (One invited talk presented);
65. National Seminar on Crystalline Materials and Nanotechnology (February 26-27,2009) held at Malankara Catholic College, Mariagiri (Six papers including one invited talk presented);
66. National Conference on Recent Trends in Crystal Growth, Thin Films and Nanostructured Materials (August 5-6, 2009) held at Aditanar College of Arts and Science, Triuchendur (Two papers including one invited talk presented);
67. National Conference on Advanced Materials – Processing, Characterization and applications (August 27-29, 2009) held at PSN college of Engineering and Technology, Tirunelveli (Five papers including one invited talk presented);
68. National Conference on Materials Science (October 9-10, 2009) held at Annamalai University, Annamalainagar (Seven papers presented);
69. National Workshop on Quantum Confined Systems and Nanoscale Devices (December 3-5, 2009) held at St.Thomas College, Palai (Two papers presented);
70. Fifth All India Conference of KAAS (December 4-5, 2009) held at Holy Cross College, Nagercoil (Six papers including one invited talk presented);
71. UGC sponsored National Conference on Recent and Emerging Developments in Physics (January 7-9, 2010) held at Women’s Christian College, Nagercoil (Fourteen papers including one invited talk presented);
72. XIV National Seminar on Crystal Growth (March 10-12, 2010) held at VIT University, Vellore (Seven papers including one invited talk presented);
73. X Tamilnadu Science Congress (May 21-23, 2010) held at Manonmaniam Sundaranar University, Tirunelveli (Twenty two papers presented);
74. II National Conference on Advanced Materials – Processing, Characterization and Applications (August 25-27,2010) held at PSN College of Engineering and Technology, Tirunelveli (Five papers including one invited talk presented);
75. Sixth All India Conference of KAAS (September 10-11, 2010) held at S. T. Hindu College, Nagercoil (Ten papers presented);
76. Conference on Crystal Growth Science and Technology (in Tamil) (October 18-19, 2010) held at Anna University, Chennai (One invited talk presented);
77. XXXIX National Seminar on Crystallography (October 25-27, 2010) held at University of Jammu, Jammu (One paper presented);
78. Recent Advances in Biomaterials (December 17-18,2010) held at Saveetha University, Chennai (one paper presented) ;
79. National Conference on Recent Trends in Crystal Growth and Nanotechnology (January 28-29, 2011) held at Arignar Anna College, Aralvaimoli (Seven papers including one invited talk presented);
80. XV National Seminar on Crystal Growth (February 23-25, 2011) held at PSN College of Engineering and Technology, Tirunelveli (Six papers including one invited talk presented);
81. National Seminar on Recent Advancement in Materials Research (March 3-4, 2011) held at Scott Christian College, Nagercoil (One paper presented);

82. National Seminar on Recent Trends in Physics (March 18 – 19, 2011) held at Shivani Engineering College, Trichy (2 papers including one invited talk presented);
83. National Conference on Emerging Trends in Engineering, Management and Computer Applications (April 1-2, 2011) held at Anna University of Technology, Tiruchirappalli (One paper presented);
84. VIII All India Conference of Scott Research Forum (April 2, 2011) held at Scott Christian College, Nagercoil (One paper presented);
85. National Seminar on Luminescent and Lasing Materials (August 19 – 21, 2011) held at St.Aloysius College, Edathua (4 papers including one invited talk presented);
86. National Conference on Exploring the Frontiers of Vibrational Spectroscopy (September 1-2, 2011) held at Women's Christian College, Nagercoil (One paper presented);
87. E.James R.Daniel Endowment Lecture (September 6, 2011) held at Scott Christian College, Nagercoil (One invited talk presented);
88. Seventh All India Conference of KAAS (September 16-17, 2011) held at Women's Christian College, Nagercoil (Fourteen papers presented);
89. National Conference on Emerging Trends in Arts and Science (October 7-8, 2011) held at Nesamony Memorial Christian College, Marthandam (One paper presented);
90. National Seminar on Physical and Bio-medical Applications in Nano Technology (October 12-14, 2011) held at S.N.College, Kollam (One paper presented);
91. National Conference on Recent Trends in Materials Science-2011 (November 11-12, 2011) held at K.S.Rangasamy College of Technology, Tiruchengode (One paper presented);
92. DAE-BRNS National Laser Symposium-XX (January 09-12, 2012) held at Anna University, Chennai (One paper presented);
93. XVI National Seminar on Crystal Growth (January 19-21, 2012) held at Aditanar College of Arts and Science, Tiruchendur (Six papers including one invited talk presented);
94. National Conference on Recent Trends in Arts, Science and Management (February 17, 2012) held at Women's Christian College, Nagercoil;
95. National Conference on Advanced Materials Science (March 01-02, 2012) held at Annamalai University, Chithambaram (Three papers presented);
96. One Day National Level Workshop on Nanoscience and Nanotechnology (March 07, 2012) held at Sri GVG Visalakshi College for Women, Udumalpet (One Invited Lecture presented);
97. National Seminar on Current Trends in Materials Science (March 07-08, 2012) held at NSS College, Changanacherry (Three papers including one invited talk presented);
98. National Conference on Physics of New Materials (April 20-21, 2012) held at Noorul Islam University, Kumaracoil (Ten papers including one invited talk presented);

99. Emerging Nanoscience and Its Future in Biology (August 21-23, 2012) held at St. Aloysius College, Edathua (Three papers including one invited talk presented);
100. National Seminar on New Materials Research and Nanotechnology (September 12-14, 2012) held at Government Arts College, Ooty (Eleven papers including one invited talk presented);
101. Eighth All India Conference of KAAS (October 5-6, 2012) held at Sree Ayyappa College for Women, Chunkankadai (Eleven papers presented);
102. National Conference on Nanomaterials (December 3-4, 2012) held at Karunya Unpversity, Coimbatore (One paper presented);
103. Twenty Fourth National Seminar on Crystal Growth (December 20 – 22, 2012) held at CGC, Anna University, Chennai (Two papers including one invited talk presented);
104. Seventeenth National Seminar on Crystal Growth (January 9 – 11, 2013) held at Department of Physics, Anna University, Chennai (Six papers including one invited talk presented);
105. III National Conference on Advanced Materials – Processing, Characterization and Applications (January 23-25, 2013) held at PSN College of Engineering and Technology, Tirunelveli(Five papers including one invited talk presented);
106. National Conference on Advanced Materials (February 15-16, 2013) held at St. Mary's College, Thoothukudy(Nine papers including one invited talk presented);
107. National Seminar on Materials and Nanomaterials (March 7-8, 2013) held at St. Xavier's College, Palayamkottai (One paper presented);
108. National Seminar on Novel Materials (March 08, 2013) held at Shivani Engineering College, Tiruchirappalli (One paper presented);
109. National Seminar on Recent Trends in Crystal Growth and Nano Materials (March 13-15, 2013) held at National College, Tiruchirappalli (Three papers including one invited talk presented);
110. National Conference on Innovative Trends in Materials Science (August 23-24, 2013) held at Arignar Anna College, Aralvoimozhi (Eight papers including one invited talk presented);
111. National Seminar on Current Developments in Physics (September 20, 2013) held at Women's Christian College, Nagercoil (One invited talk presented);
112. Second National Seminar on New Materials Research and Nanotechnology (September 25-27, 2013) held at Government Arts College, Ooty (Fifteen papers including one invited talk presented);
113. National Seminar on Spectroscopic Techniques and its Applications for Material Characterization (October 03-04, 2013) held at University of Kerala, Thiruvananthapuram (Two papers including one invited talk presented);
114. Materials Process and Applications of Novel Technologies (November 07 – 08, 2013) held at HHMSPBNSS College for Women, Thiruvananthapuram (Six papers including one invited talk presented);
115. National Conference on Future Proposals in Multidisciplinary Research (February 14, 2014) held at Women's Christian College, Nagercoil (One paper presented);
116. XVIII National Seminar on Crystal Growth (Febuary 24-26, 2014) held at SSN College of Engineering, Chennai (One invited talk presented);

117. Ninth All India Conference of KAAS (August 22-23, 2014) held at Sree Ayyappa College for Women, Chunkankadai (Four papers presented);
118. Prof. A. James Endowment Lecture (September 16, 2014) held at Scott Christian College, Nagercoil (One invited talk presented);
119. National Seminar on Emerging Trends in Theoretical and Experimental Physics (January 08-09, 2015) held at Sree Ayyappa College for Women, Nagercoil (Four papers including one keynote address presented);
120. National Conference on Emerging Trends in Applied Physics (February 19-20, 2015) held at Lekshmpuram College of Arts and Science, Neyyoor (Ten papers including one invited talk presented);
121. Three Day National Seminar on Materials Science with a Special Emphasis on Crystallography (September 9-11, 2015) held at Government College, Kottayam (One invited talk delivered);
122. Tenth All India Conference of KAAS (September 18-19, 2015) held at Women's Christian College, Nagercoil (One paper presented);
123. National Seminar on Design and Properties of Nanomaterials for Emerging Technologies (December 9-10, 2015) held at St. Thomas College, Ranni (One invited talk delivered);
124. National Conference on Advanced Materials (February 27, 2016) held at Nanjil Catholic College of Arts and Science, Kaliakkavilai (One keynote address delivered);
125. National Conference on Graphene and Liquid Crystals for Smart Nanoengineering Applications (November 7-9, 2016) held at Saveetha Engineering College, Thandalam (One invited talk delivered);
126. National Conference on Materials for Energy Devices (November 23-24, 2016) held at Standard Fireworks Rajaratnam College for Women, Sivakasi (Two papers presented);
127. National Conference on Current Advancement in Physics (February 3-4, 2017) held at St. John's College, Palayamkottai (One paper presented);
128. XXI National Seminar on Crystal Growth and Applications (March 6-8, 2017) held at National College, Tiruchirappalli (Four papers including one invited talk presented);
129. National Seminar on Recent Trends in Nano and Other Materials for Energy Efficient Devices (July 20-22, 2017) held at St. Aloysius College, Edathua (One invited talk delivered);
130. XXII National Seminar on Crystal Growth and Applications (January 29-31, 2018) held at Sacred Heart College, Tirupattur (One invited talk presented);
131. National Seminar on New Materials Research and Nanotechnology (March 19-21, 2018) held at The Sethupathy Government Arts College, Ramanathapuram (Two papers including one invited talk presented); etc.

### III. International level

1. Ninth Annual Biochemistry Research Conference (October 1985) held at University of California, Riverside, CA, USA;

2. International Workshop on Preparation and Characterization of Technologically Important Single Crystals (February 2001) held at National Physical Laboratory (CSIR), New Delhi (Two papers presented);
3. International Symposium on Recent Advances in Inorganic Materials (December 2002) held at I.I.T. Bombay, Mumbai (Twelve papers presented);
4. International Conference on the Role of Indian Systems of Medicine and Homeopathy (February 2003) held at Chennai (One paper presented);
5. International Seminar on Modern Concept of Development and its Impact on Environment (January 2004) held at S.T. Hindu College, Nagercoil;
6. International Workshop on Crystal Growth and Characterization of Technologically Important Materials (February 2004) held at Anna University, Chennai (Six papers presented);
7. Sixth International Conference on Solvothermal Reactions (August 2004) held at University of Mysore, Manasagangothri (Three papers presented);
8. International Conference on Spectrophysics (February 2005) held at Pachaiyappa's College, Chennai (One paper presented);
9. International Workshop on Nanoscience and Technology (February 13-17, 2006) held at Anna University, Chennai (One paper presented);
10. Indo-Australian Symposium on Nano Science and Nano Technology (March 31 to April 1, 2006) held at Indian Institute of Science, Bangalore (One paper presented);
11. International Conference on Nanoscience and Nanotechnology (August 26-28, 2006) held at University of Madras, Chennai (Two papers presented);
12. International Conference on Lasers and Nanomaterials (November 30 – December 2, 2006) held at University of Calcutta, Kolkata (One paper presented);
13. Eighth International Conference on Optoelectronics, Fiber Optics and Photonics (December 13-16, 2006) held at University of Hyderabad, Hyderabad (Three papers presented);
14. International Symposium For Research Scholars on Metallurgy, Materials Science and Engineering (December 18-20, 2006) held at Indian Institute of Technology (Madras), Chennai (One paper presented);
15. Second International Conference on Emerging Adaptive Systems and Technologies (EAST – 2007), Theme “Emerging, Exciting Worlds of Nanotechnology” (October 25-27, 2007) held at Noorul Islam College of Engineering, Kumaracoil (Three papers including one invited talk presented);
16. International Conference on Materials Science Research and Nanotechnology (ICMSRN 2008) (February 27-29, 2008) held at Mother Teresa Women's University, Kodaikanal (One paper presented);
17. First International Conference of KAAS (December 5-6, 2008) held at Women's Christian College, Nagercoil (One invited talk presented);
18. International Conference on Active/Smart Materials (January 7-9, 2009) to be held at Thiagarajar College of Engineering, Madurai (Two papers presented);
19. International Conference on Functional Materials for Advanced Technology (January 29-30, 2009) to be held at Velammal Engineering College, Chennai (Five papers presented);
20. International Conference on Nanoscience and Nanotechnology (February 24-26, 2010) held at SRM University, Chennai (One paper presented);

21. International Conference on Materials for Advanced Technologies (June 26 - July01, 2011) held at Suntec, Singapore (Four papers presented);
22. International Conference on Advanced Materials (January 5-7, 2012) held at Loyola College, Chennai (Twenty two papers including one invited talk presented);
23. International Conference on Recent Trends in Advanced Materials (February 20-22, 2012) held at VIT University, Vellore (One paper presented);
24. International Conference on Materials Science and Technology (June 10-14, 2012) held at St.Thomas College, Pala (Seventeen papers presented);
25. International Workshop on Crystal Growth and Characterization of Advanced Materials and Devices (December 16 – 19, 2012) held at Anna University, Chennai (One invited talk presented);
26. International Conference on Advanced Nanomaterials & Emerging Engineering Technologies (July 24-26, 2013) held at Sathyabama University, Chennai (One paper presented);
27. Second International Conference of KAAS (September 20-21, 2013) held at Sree Ayyappa College for Women, Chunkankadai (Five papers presented);
28. Indo-German Conference on LASER Application and Nanoscience (December 05-07, 2013) held at Srinivasa Ramanujan Institute for Basic Sciences, Thiruvananthapuram (One paper presented);
29. International Conference on Advances in Engineering and Applied Sciences (April 29-30, 2015) held at Noorul Islam University, Kumaracoil (One keynote address presented);
30. International Conference on Functional Materials (September 07-10, 2016) held at PSN College of Engineering and Technology, Tirunelveli (Ten papers presented);
31. The Seventh Asian Conference on Crystal Growth and Crystal Technology (October 15-18, 2017) held at Changchun University of Science and Technology, Changchun, China (Four papers presented); etc.

## 26. List of Research Scholars Guided :

### A) Postdoctoral Research Associates Guided

#### (i) Dr. T. Asaithampi

In-vitro studies on urinary stones

#### (ii) Dr. M. Vimalan

II-VI compound nanostructured materials

### B) Ph.D. Scholars Guided

1. **T. H. Freeda (Degree awarded on 19.04.2002)**  
Studies on KDP single crystals added with some ammonium compounds
2. **K. Jayakumari (Degree awarded on 18.12.2002)**  
Growth and characterization of  $(\text{NaCl})_x(\text{KCl})_{y-x}(\text{KI})_{1-y}$  single crystals
3. **G. Selvarajan (Degree awarded on 01.09.2003)**  
Studies on  $(\text{NaCl})_x(\text{KBr})_{y-x}(\text{KI})_{1-y}$  solid solutions
4. **S. Perumal (Degree awarded on 06.02.2004)**  
Growth, structure and physical properties of the crystals grown from the starting compositions for  $x = 0.1$  to  $0.4$  and  $y = 0.2$  to  $0.8$   $(\text{KCl})_x\text{KBr})_{y-x}(\text{KI})_{1-y}$ .
5. **Thresiamma Chacko (Degree awarded on 20.04.2006)**  
In-vitro studies on some urinary stone crystals

6. **X. Sahaya Shajan (Degree awarded on 04.07.2007)**  
Growth and characterization of pure and impurity added calcium tartrate single crystals
7. **N. Neelakanda Pillai (Degree awarded on 10.03.2008)**  
Growth and characterization of ternary mixed crystals of NaCl, NaBr and NaI
8. **C. M. Padma (Degree awarded on 25.04.2008)**  
Studies on some binary alkali halide solid solutions
9. **M. Priya (Degree awarded on 14.07.2008)**  
Studies on some alkali halide mixed crystals
10. **V. N. Praveen (Degree awarded on 07.11.2008)**  
Growth and characterization of some novel metalorganic nonlinear optical crystals
11. **M. Meena (Degree awarded on 22.01.2010)**  
Studies on some L-arginine derivative crystals
12. **R. Sakthi Sudar Saravanan (Degree awarded on 27.08.2010)**  
Studies on some II-VI compound materials
13. **G. Janita Christobel (Degree awarded on 22.10.2010)**  
Investigations on ZnS-ZnO nanocomposites
14. **I. S. Prameela Kumari (Degree awarded on 29. 02.2012)**  
Studies on cadmium based metal organic crystals
15. **C. Kaladevi (Degree awarded on 29. 02. 2012)**  
Studies on some ternary alkali lead bromide crystals
16. **D. Shiney Manoj (Degree awarded on 05. 04. 2012)**  
Preparation and properties of nanocomposites based on some manganese compounds
17. **G. Deepa (Degree awarded on 18. 04. 2012)**  
Investigations on nanocrystals based on some cadmium and manganese compounds
18. **K. Usha (Degree awarded on 25. 05. 2012)**  
Studies on nanomaterials based on some nickel and manganese compounds
19. **J. Asbalter (Degree awarded on 31. 05. 2012)**  
Growth and characterization of some transparent conducting oxide thin films
20. **R. Sunitha (Degree awarded on 31. 05. 2012)**  
Studies on nanocrystals based on manganese and cadmium sulphide compounds
21. **M. Vaitheeswari (Degree awarded on 10. 04. 2013)**  
Studies on epsomite single crystals
22. **S. Goma (Degree awarded on 08. 01. 2014)**  
Preparation and properties of cobalt oxide nanocrystals
23. **S. Nagaveena (Degree awarded on 10.03.2014)**  
Preparation and properties of nickel sulphide based nanomaterials
24. **J. M. Kavitha (Degree awarded on 09.04.2014)**  
Growth and characterization of some metal sulphate heptahydrate single crystals
25. **O. V. Mary Sheeja (Degree awarded on 31.07.2015)**  
Studies on nanomaterial added KDP single crystals
26. **S. I. Srikrishna Ramya (Degree awarded on 13.08.2015)**  
Studies on  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanoparticles
27. **V. Rajalekshmi (Degree awarded on 16.06.2017)**

Preparation and properties of some hydrogen bonded crystals

**C). Ph.D. Scholars (Officially) Co-guided (But they, except G. Pious Michael & K. Janaki, have been fully guided in the real sense)**

1. **N. Manonmani (Degree awarded on 18.09.2007)**  
Growth and characterization of some crystals with structurally incommensurate phases
2. **S. Meenakshi Sundar (Degree awarded on 13.06.2008)**  
Studies on some oxide nanocrystals
3. **N. Joseph John (Degree awarded on 24.11.2009)**  
Growth and characterization of some hydrogen phosphate single crystals
4. **N. Theresita Shanthi (Degree awarded on 11.12.2009)**  
Studies on TGS single crystals doped with halide compounds
5. **M. Annie Freeda (Degree awarded on 25. 05. 2012)**  
Synthesis and characterization of pure and doped CuS nanocrystals
6. **C. Latha (Degree awarded on 20. 09. 2012)**  
Studies on some bimetallic thiocyanate single crystals
7. **G. Pious Michael (Degree awarded on 10. 10. 2012)**  
Rainfall in northern boundary western ghat states – An analysis
8. **A. Karolin (Degree awarded on 19. 06. 2013)**  
Growth and characterization of glycine metal sulphate crystals
9. **N. Saraswathi (Degree awarded on 29. 01. 2015)**  
Studies on some metal oxide nanocrystals
10. **J. Suja Rani (Degree awarded on 18-03-2015)**  
Growth and characterization of seniorganic NLO mixed crystals (LHC-LHB)
11. **R. Divya (Degree awarded on 13.05.2015)**  
Studies on some nanoparticle dispersed polymer thin films
12. **P. V. Radhika (Degree awarded on 25-06-2015)**  
Growth and characterization of pure and doped L–arginine acetate single crystal material
13. **J. Anitha Hudson (Degree awarded on 26.06.2015)**  
Studies on II-VI compound added ADP single crystals
14. **K. Janaki (Thesis submitted)**  
Studies of global warming using near surface weather parameters

**NOTE: J. V. Libija, K. U. Madhu, S. M. R. Joseph Ramesh, A. Darlin Mary, T. Vijayakumari, C. Amuthambigai, S. Muthupoongodi, S. Benita Jeba Silvia and D. S. Christy have also been supported (by guiding unofficially) to acquire their Ph.D. degrees.**

**D) M.Phil. Scholars Guided**

1. **P. Sekar Ramasubramanian (1989)**  
Growth kinetics and physical properties of KCl doped KDP single crystals
2. **E. Arumugadoss (1989)**  
Growth and dissolution kinetics and physical properties of ZnCl<sub>2</sub> single crystals
3. **D. Dooslin Mary (1990)**

- Crystal structure and thermal properties of  $MgAl_2O_4$
4. **P. Kumaradhas (1991)**  
X-ray investigations on KCl doped KDP single crystals
  5. **T. Josephine Rani (1992)**  
Studies on chromate doped KDP single crystals
  6. **K. Jayakumari (1992)**  
X-ray and optical investigations on  $Mg_xZn_{1-x}SO_4 \cdot 7H_2O$  single crystals
  7. **T. Chithambarathanu (1992)**  
Studies on ferricyanide doped KDP single crystals
  8. **S. Perumal (1992)**  
Nucleation parameters of  $Mg_xZn_{1-x}SO_4 \cdot 7H_2O$  and dielectric constants of  $MgSO_4 \cdot 7H_2O$  crystals
  9. **C. S. Jegatheesan (1996)**  
Studies on  $K_2CrO_4$  doped KDP single crystals
  10. **G. Janiland Angel (1996)**  
Investigations on KBr doped KDP single crystals
  11. **V. Anton Sophana (1996)**  
Studies on  $K_2Cr_2O_7$  doped KDP single crystals
  12. **Y. Premila Rachelin (1996)**  
Studies on  $NH_4Cl$  and KCl doped  $(NH_4)H_2PO_4$  single crystals
  13. **E. Easwaramoorthy (1996)**  
Effect of solute impurities and critical nucleus shape on the nucleation parameters of  $K_2SO_4$  single crystals
  14. **X. Sahaya Shajan (1997)**  
Investigations on  $Na_xK_{1-x}Cl$  and  $(NaCl)_x(KCl)_{0.9-x}(KBr)_{0.1}$  mixed crystals grown from aqueous solutions
  15. **D. Irene Latha (1997)**  
Studies on Zn and Mg doped nickel sulphate heptahydrate single crystals
  16. **T. K. Jeya Shobha (1997)**  
Studies on ADP single crystals doped with sodium compounds
  17. **S. Puspha Latha (1997)**  
Studies on pure and urea and urea nitrate doped thiourea single crystals
  18. **S. Anitha (1997)**  
Studies on pure and thiourea and urea oxalate doped urea nitrate single crystals
  19. **S. S. Sreeja Kumari (1997)**  
Studies on pure and nitrate and oxalate doped urea single crystals
  20. **C. Anitha (1998)**  
Studies on gel grown KDP crystals doped with  $KNO_3$  and  $NaNO_3$
  21. **Beulah Shanthini (1998)**  
Investigations on gel grown KDP crystals doped with KCl and NaCl
  22. **Elaine Brintha Christudhas (1998)**  
X-ray determination of Debye temperatures of KCl doped  $KH_2PO_4$  crystals
  23. **J. M. Kavitha (1998)**  
Nucleation parameters and specific refractive energies of urea crystals doped with ammonium and sodium nitrates
  24. **K. Seethalakshmi (1998)**

- Nucleation parameters and specific refractive energies of NaCl and KCl doped thiourea single crystals
25. **K. U. Madhu (1999)**  
Studies on KCl doped urea single crystals
  26. **M. Theivanayagam (1999)**  
Studies on  $\text{Ni}_x\text{Mg}_{1-x}\text{SO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
  27. **N. Neelakanda Pillai (1999)**  
A study on the application of sharpening procedures in crystal structure analysis
  28. **T. Mary Jeeva (1999)**  
Lattice variation and Debye temperature of urea doped KDP single crystals
  29. **Dahlia Queen Livingsta, A (1999)**  
Studies on  $\text{KH}_2\text{PO}_4$  single crystals doped with  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$
  30. **T. M. Maheswari (1999)**  
Nucleation parameters of  $\text{NH}_4\text{H}_2\text{PO}_4$  single crystal added with some sodium compounds
  31. **S. Anne Shyla (2000)**  
Studies on  $\text{K}_2\text{Cr}_2\text{O}_7$  added  $\text{KH}_2\text{PO}_4$  single crystals
  32. **J. Albin Sancta (2000)**  
Electrical measurements on  $\text{KH}_2\text{PO}_4$  crystals added with KCl
  33. **A. Gnana Sutha (2000)**  
Studies on gel grown  $\text{KNO}_3$  added  $\text{KH}_2\text{PO}_4$  single crystals
  34. **M. Priya (2000)**  
Electrical measurements on KDP crystals added with thiourea
  35. **C. M. Padma (2000)**  
Investigations on gel grown urea added KDP single crystals
  36. **C. Gnana Sambandam (2001)**  
Preparation and lattice variation of  $(\text{NaCl})_x(\text{KBr})_{y-x}$  solid solutions
  37. **A. S. Jebamalar Jaslin (2001)**  
X-ray diffraction measurements on  $(\text{NaCl})_x(\text{KCl})_{y-x}(\text{KI})_{1-y}$  solid solutions
  38. **M. Freeda (2001)**  
Dielectric measurements on  $(\text{NaCl})_x(\text{KCl})_{y-x}(\text{KI})_{1-y}$  solid solutions
  39. **Aloysius Xavier Lopez (2001)**  
Lattice variation of  $(\text{NaCl})_x(\text{KBr})_{y-x}(\text{KI})_{1-y}$  solid solutions
  40. **H. Sudahar (2001)**  
A.C. electrical conductivities of  $(\text{NaCl})_x(\text{KBr})_{y-x}(\text{KI})_{1-y}$  solid solutions
  41. **R. Sakthi Sudar Saravanan (2002)**  
Nucleation parameters of  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals added with urea
  42. **J. V. Libija (2002)**  
Dielectric measurements on urea and thiourea added  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
  43. **V. Anslin Ferby (2002)**  
D.C. electrical conductivity measurements on  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals added with urea and thiourea
  44. **H. G. Jeya Harish (2002)**  
Nucleation parameters of KDP crystals added with urea
  45. **G. Pushpa Kavitha (2002)**

- Nucleation studies on supersaturated KDP solutions added with thiourea
46. **S. Chentilnath (2002)**  
Dielectric parameters of KDP crystals added with NaCl and NaBr
  47. **G. Deepa (2002)**  
D.C. electrical conductivity measurements on  $\text{KH}_2\text{PO}_4$  crystal added with sodium halides
  48. **S. Maragathaselvi (2002)**  
X-ray diffraction measurements on KDP crystals added with sodium bromide
  49. **C. Vincent Jerin (2002)**  
Lattice and thermal parameters of  $\text{KH}_2\text{PO}_4$  crystals added with NaCl
  50. **M. Latha Beatrice (2002)**  
X-ray diffraction measurements on  $\text{NH}_4\text{H}_2\text{PO}_4$  crystals added with thiourea
  51. **A. Anne Assencia (2002)**  
D.C. electrical conductivity measurements on ADP crystals added with urea and thiourea
  52. **S. P. Manju (2002)**  
Dielectric measurements on ADP crystals added with organic impurities
  53. **F. Vimala Joice (2002)**  
Lattice and thermal parameters of ADP crystals added with KCl
  54. **S. Baby Vilasini (2002)**  
Dielectric parameters of KCl and  $\text{KNO}_3$  added  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
  55. **S. Bala Ayyappan (2002)**  
D.C. conductivity measurements on ADP crystals added with glycine
  56. **S. N. Sekhar (2002)**  
Nucleation studies on supersaturated aqueous solutions of  $\text{NH}_4\text{H}_2\text{PO}_4$  added with urea
  57. **C. Ashokan (2002)**  
Optical and dielectric measurements on glycine added ADP single crystals
  58. **S. M. R. Joseph Ramesh (2002)**  
D.C. electrical conductivity measurements on  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  crystals added with urea and thiourea
  59. **N. Saraswathi (2003)**  
Dielectric measurements on gel grown  $\text{K}_3\text{Fe}(\text{CN})_6$  added  $\text{KH}_2\text{PO}_4$  single crystals
  60. **M. Chandramathi (2003)**  
Nucleation parameters of  $\text{NH}_4\text{H}_2\text{PO}_4$  single crystals added with thiourea
  61. **M. J. Sindhu (2003)**  
Nucleation parameters of  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals added with KCl
  62. **S. Bhagavathy Ammal (2003)**  
Nucleation studies on supersaturated  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  solutions added with  $\text{KNO}_3$
  63. **C. P. Glory (2003)**  
Effect of KBr addition on the nucleation parameters of  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
  64. **A. Karolin (2003)**

- Dielectric measurements on  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  crystals added with KCl and  $\text{KNO}_3$
65. **T. Benila (2003)**  
D.C. electrical conductivity measurements on  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  crystals added with KCl and  $\text{KNO}_3$
66. **S. L. Sugitha Jose (2003)**  
Nucleation studies on aqueous solutions of  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  added with glycine
67. **T. Thana Veronica (2003)**  
Electrical measurements on glycine added  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
68. **C. V. Somasundari (2003)**  
Dielectric measurements on KCl added KDP single crystals
69. **M. Vaitheeswari (2003)**  
Dielectric parameters of KDP single crystals added with  $\text{KNO}_3$
70. **A. C. Saji Kumar (2003)**  
Growth of struvite crystals added with some head ache killing drugs
71. **P. Chandrakala (2003)**  
Thermal parameters of thiourea added  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  crystals
72. **R. Anbarasi (2003)**  
Effect of glucose on the growth of brushite crystals added with fever killing drugs
73. **R. Mary Jenila (2003)**  
D.C. conductivity measurements on  $\text{Ni}^{2+}$  added ZTS single crystals
74. **R. Christlin Beula (2003)**  
Dielectric measurements on  $\text{Ni}^{2+}$  added ZTS single crystals
75. **G. Isabella Alice (2003)**  
Dielectric measurements on glycine added KDP single crystals
76. **J. Johnson (2004)**  
Dielectric measurements on thiourea added KDP single crystals
77. **R. Sarjila (2004)**  
Growth of whewellite crystals added with some head-ache killing drugs
78. **S. Felshia Burnes (2004)**  
In-vitro investigations on the growth of calcium oxalate monohydrate single crystals
79. **M. Nidya (2004)**  
Effect of some fever killing drugs on the formation of whewellite crystals
80. **R. Kemela Vanu Rega (2004)**  
D.C. conductivity measurements on  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  added ZTS single crystals
81. **S. Goma (2006)**  
Dielectric parameters of KDP single crystals added with urea
82. **S. Sivakamasundari (2006)**  
Growth and D.C. conductivity measurements on KDP – ADP mixed crystals
83. **R. Sreedevi (2006)**  
Growth and dielectric properties of KDP-ADP mixed crystals
84. **P. Krishnakumari (2006)**

- Growth and X-ray studies of thiourea added ADP crystals
85. **K. M. Mahadevan (2007)**  
Nucleation parameters of  $(\text{ADP})_x(\text{KDP})_{1-x}$  single crystals
86. **D. Anitha (2007)**  
Electrical measurements on L-arginine added ADP single crystals
87. **R. Saratha (2007)**  
Studies on KDP single crystals added with L-arginine
88. **S. B. David Xavier (2007)**  
Growth and dielectric characteristics of dichromate added KDP single crystals
89. **B. P. Prathibha (2007)**  
Dielectric measurements on  $\text{Ni}_x\text{Mg}_{1-x}\text{SO}_4 \cdot 7_2\text{O}$  single crystals
90. **R. P. Sreenath (2007)**  
Preparation and properties of CdS nanocrystals doped with  $\text{Mn}^{2+}$  and  $\text{Pb}^{2+}$
91. **R. D. Sheebha (2008)**  
Preparation and properties of CdS-CdO nanocrystals
92. **D. Sajeetha (2008)**  
Effect of glycine on the electrical properties of  $(\text{NH}_4)\text{H}_2\text{PO}_4$  single crystals
93. **K. Sathiya (2008)**  
DC conductivity measurements on  $\text{Ni}_x\text{Mg}_{1-x}\text{SO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
94. **A. Kishore Kumar (2008)**  
Dielectric measurements on  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals added with thiourea
95. **A. K. Ayesha Beevi (2008)**  
Studies on  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
96. **S. Jaya Chitra (2008)**  
Growth and thermal properties of urea added  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  crystals
97. **C. Vijaya Kumar (2008)**  
Formation of multiphased mixed crystals from miscible NaBr, KBr and KCl
98. **T. Sarala (2008)**  
Studies on  $\text{ZnCd}(\text{SCN})_4$  crystals
99. **I. Uma (2008)**  
DC Conductivity measurements on ZnO-CdS : Mn nanocrystals
100. **S. Ganesan (2008)**  
Dielectric measurements on ZnO-CdS: Mn nanocrystals
101. **D. Josephine Pappi (2008)**  
Effect of glucose on the growth of struvite crystals added with fever killing drugs
102. **S. Beulah Alagammal (2008)**  
Preparation and properties of CdO nanocrystals doped and co-doped with  $\text{Mn}^{2+}$  and  $\text{Pb}^{2+}$
103. **P. Kamala (2008)**  
Preparation and properties of ZnO-CdS nanocrystals
104. **T. Suthan (2008)**  
Growth and characterization of naphthalene single crystals
105. **I. Rajasree (2008)**  
Studies on  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals added with  $\text{KH}_2\text{PO}_4$
106. **N. Kalai Selvi (2008)**  
Studies on KDP single crystals added with epsomite

107. **D. Josephin Sabina (2008)**  
Effect of urea as an impurity on the dielectric parameters of  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals
108. **S. Ganapathi (2008)**  
Preparation and properties of PbS nanocrystals doped and co-doped with  $\text{Mn}^{2+}$  and  $\text{Cd}^{2+}$
109. **K. Sreevidhya (2009)**  
Synthesis by a novel method and characterization of ZnS nanoparticles
110. **A. Nickelson (2009)**  
Preparation and properties of  $\text{Mn}_3\text{O}_4$  nanocrystals
111. **S. G. Rejith (2009)**  
Studies on pure and doped NiO nanocrystals
112. **G. Revathi (2009)**  
Preparation and properties of manganese sulphide nanocrystals
113. **P. Noozhil (2009)**  
Investigations on pure and oxide added nickel sulphide nanocrystals
114. **K. J. Abirama(2011)**  
Preparation by a simple method and characterization of cadmium oxide nanocrystals
115. **M. R. Reeju(2011)**  
Investigation on the preparation by the solvothermal method of copper oxide nanocrystals
116. **P. G. Bindhu (2011)**  
Effect of capping agent on the preparation of ZnS-ZnO nanocrystals

**NOTE: M.Sc. and B.Sc. projects guided are not included here.**

#### **27. List of Invited Talks/Keynote Addresses Presented**

1. **VIII National Seminar on Crystal Growth (February 1999) held at Anna University, Chennai**  
Nucleation studies in aqueous solutions  
**C. Mahadevan**
2. **National Conference (in Tamil) on Crystal Growth (August 2000) held at Anna University, Chennai**  
Electrical conductivity of KDP single crystals (in Tamil)  
**C. Mahadevan**
3. **National Conference on Crystal Growth and Characterization (March 2001) held at S.T. Hindu College, Nagercoil**  
Crystal growth and characterization research at S.T. Hindu College  
**C. Mahadevan**
4. **IX National Seminar on Crystal Growth (February 2003) held at Anna University, Chennai**  
Growth and characterization of ternary mixed crystals of alkali halides  
**C. Mahadevan**
5. **Symposium on Nonlinear Optical Crystals and Modelling of Crystal Growth (February 28 – March 1, 2005) held at Anna University, Chennai**

- Soluble impurities and KDP single crystals  
**C. K. Mahadevan**
6. **National Symposium on Crystal Growth and Characterization (September 29- 30, 2005) held at Loyola College, Chennai**  
Effect of drugs on the growth of urinary stone crystals  
**C. K. Mahadevan**
  7. **National Symposium on Crystal Growth of Laser Related Materials (December 19-20, 2005) held at SSN College of Engineering, Chennai**  
Soluble impurities and crystal nucleation in aqueous solutions  
**C. K. Mahadevan**
  8. **Second National Conference on Crystal Growth (in Tamil) (December 21, 2005) held at SSN College of Engineering, Chennai**  
Crystal growth research and urinary stones (in Tamil)  
**C. K. Mahadevan**
  9. **National Conference on Preparation and Characterization of Crystalline Materials (January 19-21, 2006) held at S.T. Hindu College, Nagercoil**  
Our investigations on crystalline materials  
**C. K. Mahadevan**
  10. **National Conference on Crystal Growth for Electro-Optic Applications (June 16-17, 2006) held at Karunya Institute of Technology and Sciences, Coimbatore**  
Investigations on ADP single crystals added with organic impurities  
**C. K. Mahadevan**
  11. **XI National Seminar on Crystal Growth (December 7-9, 2006) held at SSN College of Engineering, Kalavakkam)**  
Our investigations on  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals  
**C. K. Mahadevan**
  12. **Second National Symposium on Nonlinear Optical Crystals and Modelling in Crystal Growth (March 26-27, 2007) held at Anna University, Chennai**  
Electrical measurements on L-arginine added ADP and KDP single crystals  
**C. K. Mahadevan** and M. Meena
  13. **Regional Level Seminar on Crystal Growth and Nanoscience with National Level Participation (August 30 – September 1, 2007) held at Adithanar College of Arts and Science, Tiruchendhur**  
A novel method to prepare II-VI compound nanocrystals  
**C. K. Mahadevan**
  14. **Second International Conference on Emerging Adaptive Systems and Technologies (EAST – 2007), Theme “Emerging, Exciting Worlds of Nanotechnology” (October 25-27, 2007) held at Noorul Islam College of Engineering, Kumaracoil**  
Alkali halides and nanomaterials  
**C. K. Mahadevan**
  15. **Twelfth National Seminar on Crystal Growth (December 21-23, 2007) held at SSN College of Engineering, Chennai**  
Our investigations on  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  single crystals  
**C. K. Mahadevan**

16. **6<sup>th</sup> National Conference on Emerging Trends in Crystal Growth and Nano Materials (February 28-29, 2008) held at Loyola College, Chennai**  
Studies on ZnO-CdO nanocomposites  
**C. K. Mahadevan** and S. Meenakshi Sundar
17. **State Level Seminar on Emerging Trends in Nanotechnology (September 29, 2008) held at Pioneer Kumaraswamy College, Nagercoil**  
Preparation and characterization of II-VI compound nanomaterials  
**C. K. Mahadevan**
18. **State Level Seminar on Crystal Growth and Nanotechnology (October 18, 2008) held at Aditanar College of Arts and Science, Tiruchendur.**  
II-VI compound nanomaterials  
**C. K. Mahadevan**
19. **First International Conference of KAAS (December 5-6, 2008) held at Women's Christian College, Nagercoil**  
Research in science and technology – Why we need?  
**C. K. Mahadevan**
20. **Thirteenth National Seminar on Crystal Growth (January 27-29, 2009) held at SSN College of Engineering, Chennai**  
Multiphased mixed crystals of alkali halides  
**C. Mahadevan**
21. **National Seminar on Applications of Computer Science (February 25-27, 2009) held at University Institute of Technology (University of Kerala), Neyyattinkara**  
Introduction to nanotechnology  
**C. K. Mahadevan**
22. **National Seminar on Crystalline Materials and Nanotechnology (February 26-27, 2009) held at Malankara Catholic College, Mariagiri**  
Nanostructured materials  
**C. K. Mahadevan**
23. **One Day Seminar on Crystal Growth and Nanotechnology (March 6, 2009) held at Sree Ayappa College for women, Chunkankadai**  
Crystalline materials  
**C. K. Mahadevan**
24. **National Conference on Recent Trends in Crystal Growth, Thin Films and Nano – structured Materials (August 5-6, 2009) held at Aditanar College of Arts and Science, Tiruchendur**  
Pure and impurity added ZTS single crystals  
**C. K. Mahadevan**
25. **National Conference on Advanced Materials – Processing, Characterization and applications (August 27-29, 2009) held at PSN College of Engineering and Technology, Tirunelveli**  
Metal sulphate heptahydrate single crystals  
**C. K. Mahadevan**
26. **Fifth All India Conference of KAAS (December 4-5, 2009) held at Holy Cross College, Nagercoil**

- Quality in higher education and academic excellence in India – How to improve?  
**C. K. Mahadevan**
27. **UGC sponsored National Conference on Recent and Emerging Developments in Physics (January 7-9, 2010) held at Women's Christian College, Nagercoil**  
Homogeneous crystal nucleation in aqueous solutions  
**C. K. Mahadevan**
28. **XIV National Seminar on Crystal Growth (March 10-12, 2010) held at VIT University, Vellore**  
Growth and characterization of alkali-alkaline chloride single crystals  
**C. K. Mahadevan** and N.Manonmani
29. **II National Conference on Advanced Materials – Processing, Characterization and applications (August 25-27,2010) held at PSN College of Engineering and Technology, Triunelveli**  
Two-component II-VI compound nanocomposites  
**C. K. Mahadevan**
30. **Conference on Crystal Growth Science and Technology (in Tamil) (October 18-19, 2010) held at Anna University, Chennai**  
Superionic conducting crystals  
**C. K. Mahadevan**
31. **National Conference on Recent Trends in Crystal Growth and Nanotechnology (January 28-29, 2011) held at Arignar Anna College, Aralvaimoli**  
Low  $\epsilon_r$  value dielectric crystals  
**C. K. Mahadevan**
32. **State Level Seminar on Nanostructured Materials(February 11-12, 2011) held at S.T.Hindu College, Nagercoil**  
Introduction to nanostructured materials  
**C. K. Mahadevan**
33. **XV National Seminar on Crystal Growth (February 23-25, 2011) held at PSN College of Engineering and Technology, Triunelveli**  
Growth and characterization of L-arginine derivative single crystals  
**C. K. Mahadevan** and M.Meena
34. **National Seminar on Recent Trends in Physics (March 18 – 19, 2011) held at Shivani Engineering College, Trichy**  
Use of domestic microwave oven for the preparation of semiconductor quantum dots  
**C. K. Mahadevan**
35. **Seminar on Nanoscience and Nanotechnology (May 05, 2011) held at Udaya College of Engineering, Vellamodi**  
What are nanostructured materials?  
**C. K. Mahadevan**
36. **National Seminar on Luminescent and Lasing Materials (August 19 – 21, 2011) held at St.Aloysius College, Edathua**  
Single crystals for second harmonic generation  
**C. K. Mahadevan**
37. **E.James R.Daniel Endowment Lecture (September 6, 2011) held at Scott Christian College, Nagercoil**  
Solid state ordering and second harmonic generation

- C. K. Mahadevan**  
38. **One week Workshop on Nanotechnology in Engineering Applications (November 14-19, 2011) held at Government College of Engineering, Tirunelveli**  
Nanostructured magnetic semiconductors
- C. K. Mahadevan**  
39. **International Conference on Advanced Materials (January 5-7, 2012) held at Loyola College, Chennai**  
Preparation by a simple method and properties of II-VI compound quantum dots
- C. K. Mahadevan**  
40. **XVI National Seminar on Crystal Growth (January 19-21, 2012) held at Aditanar College of Arts and Science, Tiruchendur**  
Preparation and properties of pure and doped  $ZnS_xO_{1-x}$  quantum dots
- C. K. Mahadevan and G.Janita Christobel**  
41. **One Day Seminar on Nanophysics (February 08, 2012) held at Malankara Catholic College, Mariagiri**  
Fundamentals of nanophysics
- C. K. Mahadevan**  
42. **One Day National Level Workshop on Nanoscience and Nanotechnology (March 07, 2012) held at Sri GVG Visalakshi College for Women, Udumalpet**  
Synthesis and characterization of nano materials
- C. K. Mahadevan**  
43. **National Seminar on Current Trends in Materials Science ( March 07-08,2012) held at NSS College, Changanacherry**  
Superionic conductors from alkali-alkaline earth halides
- C. K. Mahadevan**  
44. **National Conference on Physics of New Materials (April 20-21,2012) held at Noorul Islam University, Kumaracoil**  
A novel solvothermal method to prepare simple and composite nanoparticles
- C. K. Mahadevan**  
45. **Emerging Nanoscience and Its Future in Biology (August 21-23, 2012) held at St.Aloysius College, Edathua**  
Quantum dots for life science applications
- C. K. Mahadevan**  
46. **National Seminar on New Materials Research and Nanotechnology (September 12-14, 2012) held at Government Arts College, Ooty**  
Preparation by a simple method and characterization of pure and doped CuS nanocrystals
- C. K. Mahadevan and M.Annie Freeda**  
47. **International Workshop on Crystal Growth and Characterization of Advanced Materials and Devices (December 16 – 19, 2012) held at CGC, Anna University, Chennai**  
Nanocrystals prepared using a domestic microwave oven
- C. K. Mahadevan**  
48. **Twenty Fourth National Conference on Crystal Growth (December 20 – 22, 2012) held at CGC, Anna University, Chennai**  
Cadmium based metal organic crystals – Growth and characterization

49. **C. K. Mahadevan** and I.S.Prameela Kumari  
**Seventeenth National Seminar on Crystal Growth (January 9 – 11, 2013) held at Department of Physics, Anna University, Chennai**  
Growth and characterization of some new bimetallic thiocyanate single crystals  
**C. K. Mahadevan** and C.Latha
50. **III National Conference on Advanced Materials – Processing, Characterization and Applications (January 23-25, 2013) held at PSN College of Engineering and Technology, Tirunelveli**  
A facile method to prepare high quality semiconductor nanocrystals  
**C. K. Mahadevan**
51. **National Conference on Advanced Materials (February 15-16, 2013) held at St.Mary's College, Thoothukudi**  
Studies on epsomite ( $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ ) single crystals  
**C. K. Mahadevan** and M.Vaitheeswari
52. **National Conference on Recent Trends in Crystal Growth & Nano Materials**  
Nanocrystalline composites based on  $\text{Ni}(\text{OH})_2$  and  $\text{Mn}_3\text{O}_4$   
**C. K. Mahadevan** and K.Usha
53. **National Conference on Innovative Trends in Materials Science (August 23-24, 2013) held at Arignar Anna College, Aralvoimozhi**  
Preparation and properties of NiS nanoparticles  
**C. K. Mahadevan** and S.Nagaveena
54. **National Seminar on Current Developments in Physics (September 20, 2013) held at Women's Christian College, Nagercoil**  
A simple method to prepare nanostructured materials  
**C. K. Mahadevan**
55. **Second National Seminar on New Materials Research and Nanotechnology (September 25-27, 2013) held at Government Arts College, Ooty**  
Preparation and properties of spherical shaped hematite nanoparticles  
**C. K. Mahadevan** and S.I.Srikrishna Ramya
56. **National Seminar on Spectroscopic Techniques and its Applications for Material Characterization (October 03-04, 2013) held at University of Kerala, Thiruvananthapuram)**  
Preparation and optical properties of prominent NiS nanophases  
**C. K. Mahadevan** and S.Nagaveena
57. **Materials Process and Applications of Novel Technologies (November 07 – 08, 2013) held at HHMSPBNSS College for Women, Thiruvananthapuram**  
Nanoparticles prepared using a domestic microwave oven  
**C. K. Mahadevan**
58. **XVIII National Seminar on Crystal Growth (February 24-26, 2014) held at SSN College of Engineering, Chennai**  
ADP and KDP single crystals doped with insoluble inorganic impurities  
**C. K. Mahadevan**
59. **Seminar on Nanoscience and Nanotechnology (March 10, 2014) held at Udaya College of Engineering, Vellamodi**  
Semiconductor quantum dots  
**C. K. Mahadevan**

60. **Prof. A. James Endowment Lecture (September 16, 2014) held at Scott Christian College, Nagercoil**  
Nanostructured materials  
**C. K. Mahadevan**
61. **Interactive Workshop on Faculty Research Initiatives (December 8-9, 2014) held at PSN College of Engineering and Technology, Tirunelveli**  
Research, government funding and reporting  
**C. K. Mahadevan**
62. **National Seminar on Emerging Trends in Theoretical and Experimental Physics (January 08-09, 2015) held at Sree Ayyappa College for Women, Nagercoil**  
Preparation and properties of bulk mixed crystals  
**C. K. Mahadevan**
63. **National Conference on Emerging Trends in Applied Physics (February 19-20, 2015) held at Lekshmipuram College of Arts and Science, Neyyoor**  
Preparation and properties of cobalt oxide nanocrystals  
**C. K. Mahadevan** and S.Goma
64. **National Science Day Seminar (February 27, 2015) held at KCG College of Technology, Chennai**  
Nanostructured materials and their preparation by a simple method  
**C. K. Mahadevan**
65. **International Conference on Advances in Engineering and Applied Sciences (April 29-30, 2015) held at Noorul Islam University, Kumaracoil**  
Solid state materials-Our experience  
**C. K. Mahadevan**
66. **Three Day National Seminar on Materials Science with a Special Emphasis on Crystallography (September 9-11, 2015) held at Government College, Kottayam**  
Crystalline and nanostructured materials-Synthesis and characterization  
**C. K. Mahadevan**
67. **National Seminar on Design and Properties of Nanomaterials for Emerging Technologies (December 9-10, 2015) held at St. Thomas College, Ranni**  
Amorphous and crystalline nanophases of NiS  
**C. K. Mahadevan**
68. **National Conference on Advanced Materials (February 27, 2016) held at Nanjil Catholic College of Arts and Science, Kaliakkavilai**  
Solid state materials  
**C. K. Mahadevan**
69. **National Conference on Graphene and Liquid Crystals for Smart Nanoengineering Applications (November 7-9, 2016) held at Saveetha Engineering College, Thandalam**  
The prominent nanophases of Fe<sub>2</sub>O<sub>3</sub> and NiS: Preparation by a facile method and characterization  
**C. K. Mahadevan**
70. **XXI National Seminar on Crystal Growth and Applications (March 6-8, 2017) held at National College, Tiruchirappalli**  
Preparation and characterization of the prominent nanocrystalline phases of nickel sulfide  
**C. K. Mahadevan**
71. **National Seminar on Recent Trends in Nano and Other Materials for Energy**

**Efficient Devices (July 20-22, 2017) held at St. Aloysius College, Edathua**

Preparation of various NiS nanophases – Role of XRD and TG/DTA measurements

**C. K. Mahadevan**

**72. XXII National Seminar on Crystal Growth and Applications (January 29-31, 2018) held at Sacred Heart College, Tirupattur**

On the preparation of single phased mixed crystals

**C. K. Mahadevan**

**73. National Seminar on New Materials Research and Nanotechnology (March 19-21, 2018) held at The Sethupathy Government Arts College, Ramanathapuram**

Preparation by a simple method and properties of pure and doped  $\alpha$ -NiS nanocrystals

**C. K. Mahadevan**

**74. One Day Lecture Workshop on Applications & Development of Advanced Materials (March 23, 2018) held at St. John's College, Palayamkottai**

Hybrid crystals

**C. K. Mahadevan**

**28. Impact of Contributions in the Major Field of Research and a Brief Account of Citations:**

Most of the research papers published have been well cited. As per Google Scholar Citations (as on November 07, 2018), the **h- and i10- indexes** are respectively **25 and 76**. Total citation is **2229** with a maximum of **121**. A group of scientists from Greece have used the experimental data reported by the candidate in 3 papers (on alkali halide mixed crystals) for theoretical modeling (published 5 papers). Moreover, the candidate has been considered as an expert collaborator to work on alkali halide mixed crystals by a research team from Changchun University of Science and Technology, China. It should be noted that the publications of the candidate have been cited in various articles appeared in several International journals and proceedings, books and Ph.D. theses, etc.

**29. List of Publications**

**A. Research review article in international journal**

1, 2 - Dithiolene complexes of transition metals – structural systematics and physical properties

**C. Mahadevan**

J. Crystallogr. Spectrosc. Res. (1986) **16**, 347-416

**B) Original research papers in international journals**

1. Dichlorodiphenyl-p-dimethylaminobenzaldehydetin(IV)  $C_{21}H_{21}Cl_2NOSn$

**C. Mahadevan**, M. Seshasayee and A.S. Kothiwal

Cryst. Struct. Commun. (1982) **11**, 1725-1730

2. Structure of trimethyl(phenyl)ammonium bis(dimercaptomaleodinitrilato (2-)-S, S')nickelate (III),  $[N(CH_3)_3(C_6H_5)][Ni(C_4N_2S_2)_2]$

**C. Mahadevan**, M. Seshasayee, B.V.R. Murthy, P. Kuppusamy and P.T. Manoharan

Acta Crystallogr. (1983) **C39**, 1335-1338

3. Structure of tris(ethylenediamine)zinc(II) chloride dihydrate,  $Zn(C_2H_8N_2)_3Cl_2 \cdot 2H_2O$

- C. Muralikrishna, **C. Mahadevan**, Shakuntala Sastry, M. Seshasayee and S. Subramanian  
Acta Crystallogr. (1983) **C39**, 1630-1632
4. Crystal and molecular structure of tetra-n-butylammonium bis(stilbenedithiolato)nickelate(III)  
**C. Mahadevan**, M. Seshasayee, P. Kuppusamy and P.T. Monoharan  
J. Crystallogr. Spectrosc. Res. (1984) **14**, 177-191
  5. Crystal and molecular structure of bis(tetramethylammonium) bis(maleonitrile dithiolato)cuprate(II). Structure of  $C_{16}H_{24}CuN_6S_4$   
**C. Mahadevan** and M. Seshasayee  
J. Crystallogr. Spectrosc. Res. (1984) **14**, 215-226
  6. Crystal and molecular structure of hexa(antipyrine)cadmium(II) perchlorate  $[(C_{11}H_{12}ON_2)_6Cd]^{2+}[ClO_4]^{-}_2$   
**C. Mahadevan**, Akella Radha and M. Seshasayee  
Z. Kristallogr. (1984) **169**, 159-163
  7. Structure of bis(tetraethylammonium) bis(dimercaptomaleodinitrilato (2-)-S, S') nickelate(II),  $[N(C_2H_5)_4]_2[Ni(C_4N_2S_2)_2]$   
**C. Mahadevan**, M. Seshasayee, Akella Radha and P. T. Manoharan  
Acta Crystallogr. (1984) **C40**, 2032-2034
  8. Structure of bis(N,N-bis(2-hydroxyethyl)dithiacarbamate)nickel(II),  $C_{10}H_{20}NiN_2O_4S_4$   
K. Ramalingam, K. Radha, G. Aravamudan, **C. Mahadevan**  
Ch. Subrahmanyam and M. Seshasayee  
Acta Crystallogr. (1984) **C40**, 1838-1839
  9. Structure of dichlorobis(P,P,P<sup>1</sup>P<sup>1</sup>-tetramethyl-o-phenylene(phosphine) nickel(III) hexafluorophosphate dihydrate,  $[NiCl_2(P_2(CH_3)_4(C_6H_4)_2)]PF_6 \cdot 2H_2O$   
**C. Mahadevan**, M. Seshasayee, B. L. Ramakrishna and P. T. Manoharan  
Acta Crystallogr. (1985) **C41**, 38-40
  10. Crystal and molecular structure of tris(ethylenediamine)cadmium(II) iodide,  $[Cd(NH_2CH_2CH_2NH_2)_3]I_2$   
**C. Mahadevan**, M. Seshasayee, Shakuntala Sastry and Ch. Subrahmanyam  
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**(E) Book Chapter/Books (All single authored/edited)**

**(i) Book chapter**

“Crystal Structure Analysis” in “Horizons of Physics – Vol. II’ Published (1996) New  
Age International Publishers, New Delhi.

**C. Mahadevan**

**(ii) Research book**

“Tiruvalluvarum Tirukkuralum” (in Tamil) – 1995 – Gaju Publications, Nagercoil (101  
pages)

**(iii) Text books**

1. “History of Science” - 1995 – Gaju Publications, Nagercoil (194 pages)
2. “Vignana Varalaru” – Translated version in Tamil language of the above book (1) – 1995  
- Gaju Publications, Nagercoil (256 pages) [Has won the Tamilnadu State Government  
Award]
3. “Research Methodology” – 2000 – Gaju Publications, Nagercoil (90 pages)
4. “Physics” – 2002 – NSV Publications, Coimbatore (201 pages)

**(vi) Books edited**

1. Proceedings of the South Indian Physics Teachers Convention (March  
13-15, 1992)” – 1992 – S.T. Hindu College, Nagercoil
2. “Proceedings of the Mano Research Forum 2000” – 2000 –  
Manonmaniam Sundaranar University, Tirunelveli

**(v) Other books**

1. “Panchamirdham” (in Tamil) – 1985) – Self (Hobby writings)
2. “Muppandhal Deviyin Aanmecha Vazhikatti” (in Tamil) – 1988 – Self (Spiritual)
3. “Muppandhal Annai Bakthi Padalgal” (in Tamil) – 1988- Self (Spiritual)
4. “Educational Reformation (for India)” – 1988 – Self (Educational planning)

**(F) Papers Presented in Conferences**

Not listed here as it is long.

**30. Major Award Photographs**

**Dr. C. K. Mahadevan receiving the Tamil Nadu State Government Award (year 1995) for the book ‘Vignana Varalaru’ in January 1997**



**Dr. C. K. Mahadevan receiving the D.Sc. degree in Physics (2002)  
from Madurai Kamaraj University**



**Dr. C. K. Mahadevan receiving the Prof. P. Ramasamy National Award for Crystal  
Growth (for the year 2006) in December 2006**



**Dr. C. K. Mahadevan receiving the Academic Achievement Award in the Sixth All India Conference of the Kanyakumari Academy of Arts and Sciences (2010)**



**Dr. C. K. Mahadevan receiving the Tamil Nadu Scientist Award (2008) and the Best Teacher Award (2008-2009) from the Tamil Nadu State Government**



**Dr. C. K. Mahadevan receiving the Life-Time Achiever Award (2012) from Scott Alumni Association**