



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

- 1. Name and Address** Dr. C. K. MAHADEVAN  
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Mobile: +91 9442161237  
(Date of Birth: July 25, 1958)
- 2. Educational Qualifications** M.Sc.(Physics)(1980, from Madras University)  
Ph.D.(Physics) (1984,from IIT Madras )  
D.Sc.(Physics)(2002,fromMaduraiKamaraj University)
- 3. Positions Held Previously**
  - (i) Junior Research Fellow, Senior Research Fellow and CSIR Research Associate in the Physics Department of IIT Madras, Chennai
  - (ii) Lecturer in the Nuclear Physics Department of Madras University, Chennai
  - (iii) Postdoctoral Fellow in the Biochemistry Department of University of California,Riverside,USA
  - (iv) CSIR Pool Officer in the School of Physics of MaduraiKamarajUniversity, Madurai
  - (v) Assistant Professor (Lecturer, Senior Lecturer & Reader) and Associate Professor in the Physics Department of S. T. Hindu College, Nagercoil [Also, Coordinator for Science Research].
- 4. Teaching Experience**

More than 28 years at PG level. Taught B.Sc., M.Sc., M.Phil. and Ph.D. Physics students and also Physics for Chemistry and Mathematics major students.
- 5. Research Experience**

More than 29 years at Postdoctoral level. Completed guiding 2 Postdoctoral Research Associates, several B.Sc. and M.Sc. projects, 116 M.Phil. projects and 26 Ph.D. projects and co – guiding 13 Ph.D. projects. Currently guiding 1 Ph.D. project and co-guiding 1 Ph.D. project. Major research field is *Solid State Materials-Crystalline and Nanostructured Materials (Materials Synthesis and Characterization)*. The publications are well cited and the h- and i10- indices are respectively 21 and 55. Major contributions are:  
Observed, for the first time,  $\lambda\lambda\lambda$  ring conformation in  $[M(en)_3]^{2+}$  systems and mixed stacking and double stacking in some 1,2 – dithiolene complexes.

Systematically studied the nucleation kinetics of several inorganic and organic compound crystals and grouped the results into four rules.

Proposed two simple methods (seeded free evaporation and gel-solution) and succeeded in growing several large crystals.

Fabricated a low-cost sample holder for the electrical (both AC and DC) measurements and derived the required formula for determining the dielectric constant.

Discovered that conducting inorganic crystals can be grown by combining alkali and alkaline earth halides non-stoichiometrically.

Grown, for the first time, multiphased ternary mixed crystals (leading to nanoparticles aggregation) of alkali halides with abnormal dielectric properties.

Discovered that proper solid solutions can be prepared directly from the reactants taken at suitable proportions even if the end members have lattice mismatching.

Succeeded in growing quasi binary mixed crystals in the form of  $Zn_xCd_{(2-x)}(SCN)_4$  with good size and quality and possessing useful optical and electrical properties.

Grown and characterized several organic and semi-organic NLO material crystals by modified Bridgman and solution methods.

Proposed a simple solvothermal method using domestic microwave oven and successfully prepared with reduced size, homogeneity and phase purity and characterized several important pure and doped II – VI compound and several other nanocrystals and all nanophases of  $Fe_2O_3$  and NiS.

By using the above method, nanocomposites like  $(ZnO)_x(CdO)_{1-x}$ ,  $(ZnS)_x(ZnO)_{1-x}$ ,  $(ZnS)_x(CdS)_{1-x}$ ,  $(ZnO)_x(CdS)_{1-x}$ ,  $(CdS)_x(CdSe)_{1-x}$ ,  $(PbS)_x(PbO)_{1-x}$ ,  $(Mn_3O_4)_x(Ni(OH)_2)_{1-x}$ ,  $(CdS)_x(MnS_2)_{1-x}$ ,  $(CdCO_3)_x(Mn_3O_4)_{1-x}$  and  $(MnS_2)_x(Mn_3O_4)_{1-x}$  have also been prepared successfully with reduced size, homogeneity and phase purity and characterized.

## 6. Number of Publications

- (i) In International journals: 1 research review article and 199 research papers
- (ii) In other journals and proceedings: 138 papers
- (iii) Books: 4 Text and 7 Others
- (iv) Presentations in Conferences: 634 (including 65 Invited/Keynote Talks)

## 7. Funded Projects Availed

4 minor research projects and 6 major research projects from UGC, CSIR, TNSCST, DST and DRDO

## 8. Conferences Organized

6 Regional, 1 State level and 4 National Conferences

## 9. Awards Received

From the Tamilnadu State Government,

- (i) Best Book Authorship Award (1995)
- (ii) Best Teacher Award (2008-2009)
- (iii) Best Scientist Award (TANSA) (2008)

From UGC, Research Award (2006)

From IACG, Prof.P.Ramasamy National Award for Crystal Growth(2006)

From KAAS, Academic Achievement Award(2010)

From SAA, Lifetime Achiever's Award (2012)

20 Best Paper Presentation Awards(through Ph.D.Scholars) and few other Awards

#### **10. Honours and Recognitions**

- (i) Life Member of The National Academy of Sciences, India
- (ii) Fellow of The Academy of Sciences, Chennai
- (iii) Chaired sessions in 50 national/international conferences
- (iv) Reviewed papers for 31 international journals and also reviewed 2 books
- (v) Served in several academic and research related Committees and Boards
- (vi) Selected as one of the Eminent Personalities of India by the International Biographical Research Foundation, India
- (vii) Life Fellow of ICS, OSI and SAEST
- (viii) Life member of IAPT, IACG, IPS, MRSI, SESI, KAAS, ISCA, IPA
- (ix) Council Member (1993-1996) and Vice President(2005-2006) of Indian Physical Society
- (x) Founder Vice President, Conference Organizing Committee Member and Editorial Board Member of the Kanyakumari Academy of Arts and Sciences (1996-Date)
- (xi) Member of the American Physical Society (1990-1997)
- (xii) Member of the Materials Research Society of Singapore (2011-2013)
- (xiii) Delivered several lectures in the Refresher courses conducted by the Anna University, University of Kerala and Pondicherry University and in the neighbouring institutions to encourage research activity by the young teachers of colleges and universities

#### **11. Special Contributions to S.T.Hindu College**

- (i) Succeeded in developing the Physics Department of S.T. Hindu College as a recognized Research Centre
- (ii) Succeeded in bringing to the College the UGC's Innovative Programme (M.Sc. Nanoscience and Nanotechnology)
- (iii) Played a main role in getting to the Physics Department the PG Development Grant of UGC during the VIII, IX, X and XI Five Year Plan periods
- (iv) Played a main role in getting the FIST-DST grant to the College
- (v) Made major contributions for the Physics Department to get the appreciation as 'The Best Department in the College' by the NAAC Peer Review Committee during both the visits in the past

#### **12. Countries Visited**

- (i) USA – Spent 1 year at University of California, Riverside
- (ii) Singapore – Spent 6 days at National University of Singapore