

## Curriculum Vitae of Dr.P.Subramanian

1. *Present position* : Associate Professor in Physics

2. *Educational qualifications:* M.Sc.,Ph.D.

3. *Special training undergone:*

1. Microwave field



1982 : (1 to 14 June) In the participation of short term course on Microwaves got familiarization of microwave branch through the basic laboratory experiments as follows by x-band

1. Guide wave length determination
2. Free space wave length determination
3. Square law of detector verification
4. Load impedance determination
5. Propagation constant determination
6. Dielectric constant of Pol tetra flouroethylene (Teflon)
7. X and E band Dielectric constant Chlorobenzene
8. Impedance of a liquid using Smith chart
9. Radiation pattern of lobes
10. Reflex modes of reflex klystron
11. Coupling factor and directionality

1992 : To utilize the X band microwave bench units in Gandhigram. The technical know how was obtained in consultation with Prof. J. Sobhanadri, microwave laboratory IIT Madras. The following skills were learnt

1. Setting up the microwave benches.
2. Learned to use various detectors and known the standardization procedure
3. Measured the output and calculated to find wave guide wave lengths, free space wave length. Also known detect the crystal behavior of square law verification calculation.
4. Dielectric constant determination for solids and impedance for thickness of a sample where made and known the calculation procedure. Computer programme relevant to calculation of dielectric constant was measured.
5. Measurement and calculation for finding dielectric constant for liquids were learnt.
6. Solid fuel preparation methods were learned.
7. Variable temperature technique was learnt.
8. Method of radiation pattern measurement was made.
9. Solid sample holder making procedures was learnt.
10. Chart for guide wave length of free space wave length procedure was learnt.

1993 : Awarded ‘‘SERC visiting Fellowship’ by department of science and technology. Under this programme undergone training in Microwave laboratory Indian Institute of Technology Madras during 1<sup>st</sup> Nov’93 to 31<sup>st</sup> Jan ‘94 in the field of microwave molecular parameters, dipole moment and dynamical behavior of molecules through relaxation time were attempted to study. The polar liquid whose molecular parameters are designed were mixed under low concentration 2% to 7% with non polar liquid molecules in ccl<sub>4</sub>./Benzene. The chosen polar liquid may be mono liquid/binary liquid / tertiary liquid. Methanol + Acetone a binary liquid mixture was chosen. The parameters derived in three methods

1. Guggenheim Method – Using simple frequency (x band) measurement. It reveals dipole moment of the binary mixture.
2. Gopalakrishna Method - In single Frequency (x band) measurement for low concentration reveal dipole moment and relaxation times.
3. Cole Cole Arc Method - Various frequencies low frequency (100kHz) J band(5GHz), X band (10GHz), K band (20GHz), Q band (35GHz), E band measurement reveal relaxation times.

Apart from the work some more microwave experiments were tried

1. Large SWR measurements by calibration attenuator method and double minimum method.
2. Impedance matching by slide screw tuner
3. Insertion loss by attenuator.
4. Coupling and directivity of directional coupler

## 2. Astronomy

Installed and maintaining and servicing 8” Newtonian telescope

### 4. *Teaching and research experience:*

A. Teaching Experience : 22 years

B. Research Experience : 29 years

### 5. *New courses /Programme evolved/ Organized:*

1. Syllabus framed for under graduate course on the subject Astronomy and Astrophysics as an elective course/ regular course.
2. Member Board of studies at GRI regularly.
3. Pedagogical contributions:
  1. Steam trap modified
  2. Vernier coincidence model designed
  3. Adopter for high voltage measurement constructed for multimeter
  4. Low range voltmeter designed – using in pyranometer and microwave bench

5. Water level indicator designed
6. Constructed crystal systems models
7. Constructed Ewald sphere model
8. Constructed Brillouin zone models
9. Constructed atomic orbitals
10. Measured the Charge by mass ratio of and electron using Fabry Perot interferometer
11. Measured the speed of earth spin through Focault pendulum
12. Height of a hill is measured using Sextant.
13. Measured the distance of Jupiter using Kepler's law
- 14.. Measured distance of Venus from the recordings of transit of Venus 2004

6. Laboratories /Department established

Regular night sky observational classes for astronomy course students are being conducted.

Telescopic observation sessions are being regularly arranged on astronomically special days

7. Involvement in Institute development:

Sr.No	Nature of service	From	To	Period
1	Chief Superintendent for Semester Examinations, Gandhigram	7.11.2003	15.11.2003	9 days
2	Member of Board of studies, Department of Physics, Gandhigram	18.2.2002	17.2.2005	3 Years
3	Set up Science exhibitions at GRI			
4	Department library in-charge	July 2004	July 2006	2 Years

8. Research guidance:

1. Ph.D awarded : 2
2. Ph.D under guidance : 1
- 3 M.Phil -- : 1
- 4 M.Phil under guidance : 1
5. PG projects : 27
6. UG projects : 19

Project Guidance for M.Phil:

1. EPR studies of  $\text{Cu}^{2+}$  in semiorganic amino acid single crystal – S. Kavitha (2008)

Project Guidance for PG:

1. Low range voltmeter using FET – S.Manimaran (1989)
2. Electron paramagnetic resonance studies of  $\text{VO}^{2+}$  ions in bis(glycine) cadmium(II) chloride crystal – V.Subbulakshmi (1990)

3. EPR study of  $Mn^{2+}$  ion in ammonium cadmium sulfate hexahydrate – S. Stella Marry (1991)
4. Study of properties of tannery polluted soil – S. Ramasamy (1991)
5. Dielectric measurements on amorphous solids. A. V. Vimala (1992)
6. Dielectric measurement on some organic liquids in X band microwave unit – R. Shanmugapriya (1992)
7. Study of characteristics of X band microwave unit – C. Sripriya (1993)
8. X band microwave studies to obtain electric dipole moment of methanol – R. Rajesh Varadarajan (1995)
9. X band microwave studies on methanol-acetone binary liquid mixture for electric dipole moment and relaxation time – I. Simi (1996)
10. Electric dipole moment and relaxation time studies on ethanol-acetone binary liquid mixture through X band microwave measurements – R. Prema (1996)
11. Calculation of dipole moment and relaxation time for acetone – methanol mixture by various methods – S. Surya Narayanan (1997)
12. EPR studies of  $VO^{2+}$  ions in ammonium magnesium sulfate hexahydrate – A. Josephine Surganya (1998)
13. FTIR studies on acetone-methanol binary liquid mixture in benzene solvent – M. Katireshan (1999)
14. Molecular parameters of isopropanol acetone binary liquid mixture at various frequencies and impedance of silver thin film through X band microwave studies – K. Sundararajan (2000)
15. X band microwave studies to electric dipole moment of methanol – K. Jeyakumar and R. Subbiah (2000)
16. Gravitational lensing of cosmologically distant radio sources by foreground cluster of galaxies – N. Kirupanand (2000)
17. Microwave measurement on loss of power and VSWR values – V. Sugasanthi (2001)
18. Permittivity and dielectric loss of ammonium magnesium sulfate crystal by X band microwave measurement – S. Aji
19. An organometallic compound – An Electron Paramagnetic Resonance Study – R. Saraswathi (2003)
20. X band microwave studies on binary liquid mixture n butanol-acetone molecules – I. Solomon Krubhakar (2004)
21. Spin Hamiltonian parameters of  $Cr^{3+}$  in ammonium cobalt sulfate hexahydrate single crystal – P. Prahasini (2005)
22. EPR study of  $Cr^{3+}$  in ammonium cobalt sulfate hexahydrate crystal – G. Jamuna Pandi (2005)
23. X band microwave studies on acetone-octanol binary liquid mixture – S. Kavitha (2006)
24. Dispersion studies on acetone-octanol binary liquid mixture to obtain relaxation time – P. Chitra (2006)
25. Zero field splitting parameters from EPR forbidden transition of methyl ammonium aluminum sulfate – A. Philonina Rani (2008)
26. EPR studies of bisglycine barium chloride – K. N. Sreedevi (2009)

27. Perturbation method of approach on ESR studies for identification of occupational lattice site of  $Mn^{2+}$  in potassium thiocyanate bromide single crystal – R. Periasamy (2009)

Project Guidance for UG:

1. Low range voltmeter – design and construction – K. Anitha (1988)
2. DC voltmeter high range for adaptor – S.Usha & P.Mahalakshmi (1989)
3. Construction and study of double exposure flat plate collector – S. Mahalakshmi & S. Premalatha (1990)
4. Stagnation temperature behaviour of double flat plate collector – S.Kannan & S. Sakthivel (1991)
5. Crystal system models – G. Gopakumar and P. Muniandi (1992)
6. Crystal diffraction models – K.Nanda Kumar & P. Muralidharan (1993)
7. Motor speed control by induction tapping method – I. Juliet Shanthi & K. Kahkashan (1995)
8. Constant and variable pulse width generator – D. Lalitha & M. Malini (1997)
9. Methods of determination of the stellar properties by photometric method – M. Ramesh (1998)
10. Verification of Kepler's law – J.N. Jerald Vinoth Kumar (1999)
11. Determination of wavelength and charge by mass ratio of electron in sodium using Fabry Perot interferometer - M.M. Punitha & A. Sheeba (2000)
12. Brillouin zone models – V.P. Anto Abishek & S. Iyyappan (2001)
13. Performance study of transmission line – A.Mercy Carolin & P.Nalini (2003)
14. Physical models of few atomic orbitals of hydrogen like atoms – M. Prema & Rakhi (2004)
15. Determination of astronomical parameters from transit of venus A.Selvam & A. Vimala (2005)
16. Introductory idea of vector atom model – P.A. Kalaividhya, S. Radhika, G.Ramadevi (2006)
17. Three dimensional unit cell crystal model construction – Bis(Glycine) Cadmium (II) Chloride – P. Nagarajan, T. Parthiban, P. Ramakrishnan & M. Saravanan (2007)
18. Speed of earth spin through Foucault pendulum – V.Thiruppathi & R. Venkatesan (2008)
19. Height measurement through sextant – S. Sajina, T. Saranya & S.M.Sathya

9. *Research projects undertaken:* Nil

10. *List of Publications:*

A. Research articles published in journals

**1 EPR studies of Cu (II) doped in glycine lithium sulphate single crystal: a case of low hyperfine coupling constant**  
P.N.Selvakumar, B.Natarajan, P.Sambasiva Rao, & **P. Subramanian**  
Crystal research technology **9999** (2008) (Online published)

- 2 Electron Paramagnetic Resonance and optical studies of Cu<sup>2+</sup> in bis (thiourea) cadmium chloride single crystal**  
S. Ravi & P. Subramanian  
Solid state sciences **9** 961(2007)
- 3 EPR study of Cu<sup>2+</sup> in glycine zinc sulphate single crystal**  
S. Ravi & P. Subramanian  
Solid state communications **143** 277(2007)
- 4 Theoretical studies of EPR site center for Mn<sup>2+</sup> doped potassium thiourea bromide single crystal**  
S. Ravi & P. Subramanian  
Physica B **399** 143 (2007)
- 5 Raman spin-lattice relaxation time and Debye temperature studies of Cr<sup>3+</sup> in ammonium cobalt sulphate hexahydrate single crystal**  
S. Ravi & P. Subramanian  
J phy chem.of solids **68** 1549 (2007)
- 6 An EPR and Optical study on VO<sup>2+</sup> in bis(Glycine) Cadmium Chloride Single Crystals**  
P.N.Selvakumar, V.P. Subbulakshmi , P. Subramanian  
Zeitschrift fur Naturforsh A **62a** 462 (2007)
- 7 Theoretical explanation of EPR parameters for Cr<sup>3+</sup> in (NH<sub>4</sub>)<sub>2</sub> Co(SO<sub>4</sub>)<sub>2</sub> crystal**  
S. Ravi & P. Subramanian  
Physica B **393** 275 (2007)
- 8 Electron paramagnetic resonance study oo manganese doped tetrathiourea copper(I) chloride single crystal**  
S. Ravi & P. Subramanian  
Spectrochim.Acta A **67** 1150 (2007)
- 9 Theoretical explanation of EPR and optical parameters for Cu<sup>2+</sup> in LiNbO<sub>3</sub> single Crystal**  
S. Ravi & P. Subramanian  
Pramana **69** 313 (2008)
- 10 Electron paramagnetic resonance study of Cr<sup>3+</sup> ions in (NH<sub>4</sub>)<sub>2</sub> Co (SO<sub>4</sub>)<sub>2</sub> 6H<sub>2</sub>O single crystal**  
S. Ravi, P.N. Selvakumar & P. Subramanian  
Solid state communications **138** 129 (2007)

11 Electron **paramagnetic resonance study of free radicals in  $\gamma$ -irradiated single crystal of tris(glycine) calcium(II) dibromide**

**P.Subramanian** & N.Hariharan and J.Sobhanadri

Pramana **26** 367 (1986)

12 **EPR Spectra of Single Crystal Bis(Glycine) Calcium(II) Dichloride Tetrahydrate with Cu(II) ion**

**P.Subramanian** & N.Hariharan

Physica status solidi(b) **135(1)** 731 (1986)

12 **EPR studies of  $VO^{2+}$  ions in bis (glycine) cadmium(II) chloride**

**P.Subramanian** & N.Hariharan

Crystal lattice defects and amorphous materials **11 (4)** 351(1986)

14 **Electron paramagnetic resonance study of  $Mn^{2+}$  in kainite**

**P.Subramanian** & N.Hariharan

Pramana **26(6)** 555 (1986)

15 **Electron paramagnetic resonance study  $Cr^{3+}$  in ammonium alum**

S.Dhanuskodi, **P.Subramanian** & N.Hariharan

Indian J.Phys **57A** 75 (1983)

16 **Magnified vernier coincidence model**

**P. Subramanian**

J.Inst.Soc. of India **37(3)**, 164(2007)

17 **Modified steam trap**

**P. Subramanian**

Bull.IAPT **21** 285 (2004)

B. Seminar/Workshop/Symposium/paper presentation

Sr. No	Particulars	From	To	No . of days
1.	<p><b>a. International level</b></p> <p>International conference on Optoelectronics, Fibre optics and Photonics-2006 School of Physics, University of Hyderabad, Hyderabad</p> <p>“EPR Study of manganese doped tetra thiorea copper (I) Chloride”</p> <p>S.Ravi, P.Subramanian</p>	13 Dec2006	16 Dec2006	4

2	International conference on microwaves-2006, National Institute of Mental Health and Neuro Science Convention Centre, Bangalore Dielectric Relaxation Studies on Two Binary Liquid mixtures P.N.Selvakumar, Sundarajan, P.Chitra and P.Subramanian	15 Dec2006	17 Dec2006	3
1	<b>b. National level</b> National Seminar on "Novel trends in synthesis, structure, reaction dynamics and biological studies of coordination compounds" Department of Chemistry, Gandhigram Rural Institute, Deemed University, Gandhigram  Electron Paramagnetic Resonance study of Cr <sup>3+</sup> in (NH <sub>4</sub> ) <sub>2</sub> Co(SO <sub>4</sub> ) <sub>2</sub> .6H <sub>2</sub> O single crystal  S.Ravi, P.N. Selvakumar, P.Prahashini, G.Jamunapandi and P. Subramanian(OP41)p.43	3.3.2005	4.3.2005	02
2	National Seminar on "Recent Trends and issues in the evolution of appropriate Technologies for Integrated Rural Development" Faculty of Agriculture and Animal Husbandry, Gandhigram Rural Institute, Deemed University, Gandhigram  Dynamic and stagnation study of double exposure flat plate collector  <u>P. Subramanian, A. Mahalakshmi, S. Premalahtha, K. Kannan and S. Sakthivel</u>	4.3.2005	5.3.2005	02
3	National seminar on modern trends in applied spectroscopy. Faculty of engineering & technology, Annamalai university, Annamalai nagar  Bonding parameters calculations of bis (glycine) cadmium (II) chloride VO <sup>2+</sup> ions using epr and optical data.  P. Subramanian, V. subulakshmi & P.N. Selvakumar (G9), p.75	25.3.2004	26.3.2004	02
4	National seminar on material science –An Indian scene Department of Physics, Bharathidasan university, Trichy,  EPR study of an aminoacid compound –Bis(Glycine) cadmium (II) chloride – VO <sup>2+</sup> ions  P.Subramanian and V.Subbulakshmi B3, p.33	19.1.1998	20.1.1998	02

5	<p>National Seminar on ferroelectrics and dielectrics Department of Physics, Indian Institute of Technology, Madras.</p> <p>Electric Dipole Moment and Relaxation time of acetone-methanol binary liquid mixture by X band microwave dielectric studies</p> <p>P.Subramanian,I.Simi PA 16.</p>	16.12.1998	8.12.1998	
6	<p>National Symposium on Instrumentation National Physical Laboratory, New Delhi,</p> <p>High voltage adaptor</p> <p>P.Subramanian,P.Mahalakshmi and S.Ushha P106</p>	22.10.1997	25.10.1997	04
7	<p>Indian Association of Physics teachers convention, Department of Physics, Midnapore college, Midnapur,</p> <p>Crystal diffraction model-Ewald Sphere</p> <p>P.Subramanian, P.Muralidharan, K.Nandakumar</p>	23.10.1997	25.10.1997	03
8	<p>National Symposium on Instrumentation Osmania University, Hyderabad,</p> <p>A simple inductance regulator for Fan motor speed control</p> <p>P.Subramanian ,I.Juliet shanthi,K.Kahkashan, c44,p24</p>	25.09.1995	28.12.1995	04
9	<p>Indian Association of Physics teachers convention Guru Nanak Dev University, Amritsar,</p> <p>Crystal systems models</p> <p>P.Subramanian ,G.Gopakumar,P.Muniandip.Theme C p.18</p>	19.12.1994	21.12.1994	03
10	<p>National Symposium on Instrumentation Sri Jayachamarajendra college of Engg., Mysore,</p> <p>Detector unit of pyranometer</p> <p>P.Subramanian, K.Anitha, H5,(1988)</p>	25.11.1988	28.11.1988	04
11	<p>Proc.Solid state phys.symposium, University of Nagpur, Nagpur)</p> <p>EPR study of some radicals in <math>\gamma</math>- irradiated Tris(Glycine) Calcium (II) Dibromide.</p> <p>P.Subramanian,N.Hariharan,J.Sobhanadri, 28C, 264</p>	1985		

12	<p>Proc.Solid state phys.symposium, University of Nagpur, Nagpur</p> <p>EPR study of Mn<sup>2+</sup> Kainite</p> <p>P.Subramanian,N.Hariharan ,28C,263</p>	1985		
13	<p>Proc.Solid state phys.symposium, Bhabaha Atomic Research Centre, Bombay,</p> <p>EPR studies of VO<sup>2+</sup> ions doped in Bis(Glycine) Cadmium (II) Chloride crystal</p> <p>P.Subramanian,N.Hariharan 27C, 157</p>	1984		
14	<p>Proc.Nuclear physics and Solid state phys.symposium, University of Mysore, Mysore.</p> <p>ESR studies of Cu<sup>2+</sup> ions in bis(Glycine) Calcium(II) Dichloride Tetrahydrate.</p> <p>P.Subramanian,N.Hariharan 26C,335</p>	1983		
16	<p>Proc.Nuclear physics and Solid state phys.symposium, Banaras Hindu university, Varanasi</p> <p>EPR of Mn<sup>2+</sup> in ammonium cobalt Tutton salt</p> <p>P.Subramanian, S.Dhanushkodi, N.Hariharan, 25C, 231,</p>	1982		
15	<p>Proc.Nuclear physics and Solid state phys.symposium, Banaras Hindu university, Varanasi,</p> <p>EPR line width anomaly of Cr<sup>3+</sup> in a ferroelectric alum</p> <p>P.Subramanian, S.Dhanushkodi,N.Hariharan 25C, 231</p>	1982		
16	<p>Proc.Nuclear physics and Solid state phys.symposium, Indian Institute of Technology, Delhi</p> <p>Electron Spin Resonance studies in some hydrated double sulfates</p> <p>S.Dhanushkodi, P.Subramanian, N.Hariharan, 23C,825</p>	1980		

### C. Popular articles

1	“Encyclopedia of Physics in Tamil” Articles: 434,435,436,444,445,446,450, 454,456,457		Trichy	Bharathidasan University, edited by Prof. P.K.Ponnusamy.	1997
2	Hale Bopp’s trajectory		Science Express	Indian Express	1 April 1997
3	Tamil script on “vellikkole Kurikkidum Nigalchi”		Gandhigram	Edited by Self	3-5 June 2004
4	Comparision between earth Moon and mars		Gandhigram	Edited by Self	3 Sep 2003
5	“Simple water level indicator” in” Electronics Projects” ,18,131	81- 88152 -13-7	New Delhi	Electronics For You Enterprises Pvt Ltd	2002
6	“Emergency lamp cum charger” In Electronics projects,9,147		New Delhi	Electronics For You Enterprises Pvt Ltd	1988

### 11. Short term courses /Symposium/conferences attended

Institution	Period	Training area	Area of Specialization
ARIES observatory, Nainital	7 to 9 March 2008	Workshop	Milky way voyage
APCOST Hydrabad	18 <sup>th</sup> ,19 <sup>th</sup> March 2004	Workshop	Transit of Venus
Bharathiar University	8 <sup>th</sup> to 20 <sup>th</sup> Oct 1998	Refresher course	Recent trends in Physics
Gandhigram University	1997 -98	Certificate Course	Functional Hindi
IUCAA	14 <sup>th</sup> May to 3 <sup>rd</sup> June 1997	Refresher course	Astronomy & Astrophysics
IIT Madras	1 <sup>st</sup> – 14 <sup>th</sup> June 1982	Short Term course	Millimeter wave Generation & Applications
IISC Bangalore	23 <sup>rd</sup> Nov to 12 <sup>th</sup> Dec 1981	Short Term course	System design with analogue & Integrated circuits including Microprocessor

12. Short term courses /symposium/conferences organized

Sr No.	Title	Date	Sponsor	Beneficiaries	Nos
1	Workshop on “ <b>Resource Persons Training Programme on Transit of Venus</b> ” to Teachers of Namakkal district conducted at Vidhya Vikas Higher Secondary School, Thiruchengodu	3. 6.2004	Tamil Nadu State Council For Science & Technology	Physics Teachers in Government and Aided Higher Secondary Schools Of Namakkal district	12
2	Workshop on “ <b>Resource Persons Training Programme on Transit of Venus</b> ” to Teachers of Karur District conducted at St.TherasaGirls Higher Secondary School, Karur	4. 6.2004	Tamil Nadu State Council For Science & Technology	Physics Teachers in Government and Aided Higher Secondary Schools Of Karur district	16
3	Workshop on “ <b>Resource Persons Training Programme on Transit of Venus</b> ” to Teachers of Dindigul district conducted at Dudley Higher Secondary School, Dindigul	5. 6.2004	Tamil Nadu State Council For Science & Technology	Physics Teachers in Government and Aided Higher Secondary Schools of Dindigul district	17

13. Membership in Scientific bodies:

1. Life member in Instrument society of India
2. Life member of Indian Association of Physics Teachers

14. Resources person (Inaugural /Guest lecture/chairman)

1	Delivered two lectures as a resource person for a refresher course for University and college Teachers at the Department of Physics, Gandhigram Rural Institute, Gandhigram	27.11.2003	17.12.2003	21
2	Delivered two lectures as a resource person for a refresher course for University and college Teachers at the Department of Physics, Gandhigram Rural Institute, Gandhigram	2.5.2002	22.5.2002	21
3	Delivered two lectures as a resource person for a refresher course for University and college Teachers at the Department of Physics, Gandhigram Rural Institute, Gandhigram	3.12.2001	23.12.2001	21
4	Delivered an invited talk at an intercollegiate meet under the title “Magnetic Resonance studies” at the Palani Andavar College of Arts and Culture, Palani	March2000		1
5	Invited lecture in an intercollegiate meet under the title “Crystal models” at Jeyaraj Annapakkiam college for women, Periakulam	15Dec1995		1

15. Reviewer for journals:

- 1) Ionics and
- 2) Radiation effects and defects in solids

16. Recognition: Nil

17. Committee member:

- (i) Academic Council member at GRU
- (ii) Member of Board of Studies at GVG College, Udumalaipettai

18. Fellowship received:

Awarded “ Science Engineering Research Council(SERC) visiting fellowship for 3 months funded by Department of Science and Technology in 1993 -94.

19. Foreign countries visited: Nil

20. Administrative Experience:

1. Underwent “SERC visiting fellowship programme”
2. Conducted “Resource Persons Training Programme on Transit of Venus” workshop
3. Conducted semester examination at Gandhigram as a chief superintendent in November 2003

21. Others:

Extension activities

Sr.No	Nature of Extension work done	From	To	Period
1	Guided and Coordinated the school teaching Programme for the middle school students at Union middle school at Pithalaipatti, under the weekly extension programme	July 2005	March 2006	1 year
2	Guided and Coordinated the school teaching Programme for the middle school and high school students at Loyola High school, Anumandarayankottai, under weekly extension programme	July 2005	March 2006	1 year
3	Guided and Coordinated the school teaching Programme for the 6 <sup>th</sup> to 8 <sup>th</sup> standard students of the Union	July 2004	March 2005	1 year

	middle school, Pithalaipatti, under the weekly extension programme			
4	Guided and Coordinated the School teaching programme at the Sahayarni Middle School, Chinnalapatti for middle school students., under weekly extension programme	July 2003	March 2004	1 year
5	Users training programme and post installation maintenance of the Smokeless chulas in Piththaipatti and Vakkampatti and Gummampatti	July 1996	April 1997	1 Year
6	Coordinated the conduct of coaching classes for the higher secondary and SSLC students of Alamarathuppatti, Vakkampatti, Vellode.	July 1997	April 1998	1 Year
7	In-situ Performance analysis of Smokeless chulas in Piththaipatti and Vakkampatti and Gummamampatti	July 1998	April 1999	1 Year
8	Solar energy devices exhibition in Villages			
9	Initiating the formation of Self Help Groups in Vellodu			6 months
10	Training programme on cottage industries like Candle making and Agarbathy making to promote employment generation activities	1998		6 months

#### A BRIEF REPORT ON THE EXTENSION WORK

There are three main components of education, Teaching, Research and Extension. This institute was started with a view to cater to the needs of the rural poor in and around Gandhigram, to a larger extent covering few revenue blocks of Dindigul district. The Institute aims to improve the standard of living in the rural areas by

- i) providing quality higher education
- ii) training villagers on employment related skills
- iii) improving the standards of education in rural schools

In tune with the aims and objectives of the institute, the department of Physics renders services by carrying out various activities. A few are listed below.

1. Post installation performance analysis of smokeless chulhas
2. Users training programme of smokeless chulas
3. Village placement programme
4. Weekly extension programme
5. coaching classes for +2 and 10<sup>th</sup> standard village school students
6. Solar energy devices exhibition in villages

7. Motivation to start women self-help groups
8. Skills training for employment generation

### 1. Post installation performance analysis of smokeless chulhas

The Department of Physics of Gandhigram Rural Institute has installed over 7,000 smokeless chulhas with financial assistance from the Khadi and Village Industries Commission (KVIC) and The District Rural Development Authority (DRDA), Dindigul during period of five years from 1996. To ensure proper use and to help the user in appropriate maintenance user training programmes and post installation performance analysis and trouble shooting were carried out on a regular basis. These improved and smokeless chulhas were installed in Pithalaippatti, Vakkampatti, Gummampatti, Anumandarayan Kottai, Paraipatti to name a few.

### 2. Users training programme of smokeless chulhas

Various problem faced by the villagers in using the smokeless chulhas were identified and remedial measures were given to the villagers by our students.

### 3. Village placement programme

Name of village	Year & duration	Activities
Kambiliampatti	1 -7 Oct'-05	The higher secondary school at Kambiliyampatti does not have enough infrastructure to efficiently and effectively conduct the practical classes for standards 11 and 12. In the camp the students of the school were trained to operate the instruments and have a first hand experience with instruments that were provided buy us. This training with our equipment helped them in taking the practical examinations with a good degree of confidence and comfort. In addition some demonstrations and experiements were arranged for the children of the 6 <sup>th</sup> to 10 <sup>th</sup> standard. In the camp the following other activities were also taken up. <ol style="list-style-type: none"> <li>1. Survey on educational and monetary status</li> <li>2. Planting of saplings</li> <li>3. A procession on the importance of Gandhian values and hygiene.</li> <li>4. The staff and students actively participated in the Gram Shaba meeting.</li> <li>4. Exhibition on Solar devices.</li> <li>5. Interaction with self-help.</li> </ol>
Vadipatti	21-27 Aug-04	Science teaching, Science exhibition, leveling and repairing of the playground, orgainizing quiz programme and survey of cluster villages
Narasingapuram	23-26 Jan-04	Teaching to 6 <sup>th</sup> to 8 <sup>th</sup> standard, cleaning of temple and school premises, Republic Day celebration
Athoor	13-19 Oct-03	Teaching, exhibition, exhibition at the RC school, Cleaning the Vandikaliammam temple, and kasi vishwanatha temple premises..

Kondamanayakkan patti	23-26 Jan 03	School teaching for 8 <sup>th</sup> to 12 <sup>th</sup> standard, construction of a soak pit near a hand pump inside the School premises, construction of a kutchha compound wall for the school to reduce the intruders,
Kathiranampatti	18-21 Dec-02	Construction of Soak pits on the roads that were too wet with the waste water flowing in the middle of the road. Arranging a meeting with the MLA
T.Puthupatti	24-27 Jan-02	School teaching at Muthurampatti primary school. Construction of number of soak pits and repair of few choked soak pits, repairing and laying of a 100 m long road. School teaching programmes were taken up at Thirumalai Rayapuram, an adjoining village also. Madical camp with the help of Arvind Eye hospital, Madurai
Chekkapatti Kannapatti	18-21 Aug-01	Play ground and 200m running track paved in school premises, soak pit at bore well pump point, science teaching in classes 8,9&10 <sup>th</sup> , tree plantation, school campus cleaning, cultural events.
Vannampatti	Jan 00	School teaching, tree plantation, soak pit
Muthalapuram	23-26 Jan-99	Training to coconut tree growers against insecticides, school teaching, soak pits
Thavasimadai	12-15 Aug 99	Widening of road linking between Kavarayapatti and Thavasimadai villages for about 75 m, shifting of fence to widen the road with the villagers, women development schemes, health camp, demonstration of science experiments for 6,7,8 <sup>th</sup> standards of R.C. Annai Middle School, Competitions to school children, plantation of tree saplings, Discussion on medicinal plants growth, cultural events.
Anumandhrayankotai	12-15 Aug-98	School teaching, tree plantation, cultural events

#### **4. Weekly extension programme**

On learning about our extension activities on Improving Science Learning at Rural Schools, the Head Master of the Panchayat Union Middle School at Piththalaipatti requested us to help their school. Hence extension programme was undertaken in that village From 2001 onwards. Influenced by our programme one student by name Maria Francis constructed a working model of the mixer grinder, a spring balance and a working model of a wet grinder.

#### **5. Coaching classes for +2 and 10<sup>th</sup> standard village school students**

Coordinated the conduct of evening coaching classes for students of villages including Alamarathuppatty, Vannampattya and Vellode, during 1997 -98.

#### **6. Solar energy devices exhibition**

In the villages Kotturavampatti, Kondamanaikkampatti, Thavasimadai and in many other villages solar thermal devices such as solar drier, solar cooker, solar still, solar

photovoltaic panel cells were exhibited in order to facilitate the rural populace to know about their use and advantages.

#### **7. Motivation to start women self-help groups**

The women of Narasingapuram and Devaalaganpatti Village were motivated to start women self help groups. In addition the youth of these villages were guided in the formation of youth clubs.

#### **8. Skills training for employment generation**

The women in Narasingapuram and Devalaganpatty were trained on Candle making and Agarbathy making so as to improve their ability to earn. These skills permitted them to work during their free time and helped them earn without moving out of their households.