

**CURRICULUM VITAE**  
(as on April 2012)

**ACADEMIC DATA**

**Name** : P. Nithiananthi  
**Sex** : Female  
**Qualification** : M.Sc, Ph.D (Physics)  
**Qualification in NET/ SLET** : 'SLET' qualified in 2000.  
**JRF / SRF** : 'CSIR- SRF' awarded.



**EDUCATIONAL/PROFESSIONAL QUALIFICATION:**

Level	Institute	Subjects	Year of Passing	% of marks	Class/ Grade
S.S.L.C	Board Of Secondary Education	Maths, Science, Social Science.	Apr.1993	93.8	I
H.S.C	Board Of Higher Secondary Education.	Maths, Physics, Chemistry, Biology.	Mar.1995	86.5	I
B.Sc	G.T.N Arts College, Dindigul. (Madurai Kamaraj University)	Maj: Physics Anc: Maths, Chemistry	Apr.1998	84.4	I
M.Sc	Gandhigram Rural Institute (Deemed University).	General Physics Elective: Microprocessor	Apr.2000	76.6	I
Ph. D	Gandhigram Rural University	Semiconductor Nanostructures	07.06.07		

**Teaching experience** : worked as a lecturer in physics in  
1) **Gandhigram Rural Institute (Deemed University), Gandhigram – 624 302.**  
2) **Fatima College, Madurai.**  
3) **N.P.R. College of Engineering and Technology** for a period of about 3 years handling theory and practical classes for U.G and P. G courses.

**Research Experience** : **10 Years**

**Post Doctoral Research Experience** : **2 Years-** Worked as a Research Associate on the UGC-Major Research Project "Investigations on the electronic and impurity states in Semimagnetic Nanostructured System" in the Department of Physics, Gandhigram Rural Institute, Gandhigram

**Title of the Ph. D thesis** : Some Investigations on the Low Dimensional Semiconducting Systems.

**Citations in International journals** : **83**

- Membership in Scientific Bodies** : (i) **Life Member of Semiconductor Society of India**  
Reg. No: 201002607  
(ii) **Life Member of IAPT, India**  
(iii) **Life Member of Luminescence Society of India**
- Reviewer for Journals** : (i) Superlattices and Microstructures (ELSEVIER)
- Languages known** : Tamil, English, Hindi.
- Computer knowledge** : Language : 'C' language.  
Package : Mathematica, Grapher and Ms – office, origin.
- Membership Academic bodies** : Member, Board of studies in Physics, Gandhigram Rural University, Gandhigram.
- Participation in Extra-curricular activities** :  
- NSS program officer

### **International Assignments**

Served as a resource person in the in-service teachers training programme organized by Asst. High Commission of India, Kandy and the Ministry of Education Central Province, Hatton, Sri Lanka, August 10-19, 2010.

### **Extension Activities**

- 1) During M.Sc programme (1998 – 2000)
- (i) Participated in the study of present status of smokeless chulas installed in few villages.
  - (ii) Science Teaching Programme in Pithalaipatti Middle School for the classes VI, VII and VIII
  - (iii) Participated in the village camp at Anumantharayan Kottai during the year 1998-99.
  - (iv) Participated in the village camp at Muthalapuram during the year 1988-99.
  - (v) Participated in the village Camp at Thavasimadai during the year 1999-2000.
- 2) During Ph.D programme (2001 – 2007)
- Participated in the village camp at Michealpalayam - (2001)
  - Reddiyarchatram - (2002)
  - Kambaliampatti - (2005)
- 3) During Research Associateship (2007 – 2009)
- Participated in the village camp at Dharumathupatti during Aug, 2007 & 2008
- 4) Participated in the village camp at Silukkuvarpatti during Sep, 2010
- 5) Participated in the village camp at Silukkuvarpatti during Sep, 2011

### **Others**

- (i) Taken coaching classes for TNPCEE for Tamilnadu Entrance Examination during May 2000 & 2001
- (ii) Participated in Young students' Scientist programme to motivate school students

## List of publications

### International Journals:

1. "Effect of Temperature on the binding energy of Low Lying Excited States in a Quantum Well"  
- P. Nithiananthi and K. Jayakumar  
- Int. J. Mod Phys. B30, 5811 (2003) **(10 Citations)**
2. "Effect of  $\Gamma$ - X crossover on the donor binding energy in a Quantum Well"  
- P. Nithiananthi and K. Jayakumar  
- Int. J. Mod. Phys. B19, 3861 (2005). **(5 Citations)**
3. "Diamagnetic Susceptibility of Hydrogenic donor impurity in Low Dimensional Semiconducting Systems"  
- P. Nithiananthi and K. Jayakumar  
- Solid State Commun. 137, 427 (2006). **(30 Citations)**
4. "Effect of  $\Gamma$  - X band crossover and impurity location on the diamagnetic susceptibility of a donor in a Quantum Well"  
- P. Nithiananthi and K. Jayakumar  
- Solid State Commun. 138, 305 (2006). **(11 Citations)**
5. "Diamagnetic Susceptibility of a hydrogenic donor in low lying excited states in a Quantum well"  
- P. Nithiananthi and K. Jayakumar  
- Superlattices and Microstructures 40, 174 (2006). **(3 Citations)**
6. "Semiconductor – metal transition in a Quantum Well"  
- P. Nithiananthi and K. Jayakumar  
- Physica B 391, 113 (2007). **(11 Citations)**
7. "Influence of pressure on the diamagnetic susceptibility of hydrogenic donor in some low lying excited states in a Quantum Well"  
- P. Nithiananthi and K. Jayakumar  
- International Journal of Nanoscience 6, 1 (2007). **(1 Citation)**
8. "Shape effect of diamagnetic susceptibility of a hydrogenic donor in nano structured semiconductor systems"  
- C. Rajamohan, A. Merwyn Jasper D Reuben, P. Nithiananthi and K. Jayakumar  
- Journal of Mathematical Chemistry 44, 743 (2008).  
**(IJSC / Gold Dust Rating:3 in 10 Pt Scale) (8 Citations)**
9. "Laser induced Semiconductor – Metal transition in a Quantum Well"  
- P. Nithiananthi, C. Rajamohan and K. Jayakumar  
- Journal of Nanoscience and Nanotechnology 9, 5669 (2009).
10. "Effect of dielectric screening on the diamagnetic susceptibility of a donor in Low Dimensional Semiconducting Systems"  
- P. Nithiananthi, P. Vickraman and K. Jayakumar  
- International Journal of Modern Physics B23, 2069 (2009).
11. "Pressure study on the Semiconductor – Metal transition in a Quantum Well"  
- P. Nithiananthi and K. Jayakumar  
- Physica Status solidi B246, 1238 (2009).  
**(One of the top 10: Most accessed paper during 2009) (2 Citations)**

12. "Effect of Laser Intensity on the Semiconductor – Metal Transition in a doped Quantum Well"  
- A. Merwyn Jasper D Reuben, **P. Nithiananthi** and K. Jayakumar  
- Superlattices and Microstructures **46**, 710 (2009). **(2 Citations)**
13. "Effect of laser on the nonparabolicity of the conduction band in hydrogenic impurity states in a Semiconductor Quantum Well"  
- A. Merwyn Jasper D Reuben, **P. Nithiananthi**, C. Rajamohan and K. Jayakumar  
- Int. J. Mod. Phys **B25**, No. 13, 1785–1790 (2011).
14. "Effect of Laser on the Diamagnetic Susceptibility of a donor in a Quantum Well"  
- C. Raja Mohan, **P. Nithiananthi** and K. Jayakumar  
- Journal of Material Science and Engineering - A1, 76-79 (2011).
15. "Excited states of a magnetic polaron in a Quantum Well"  
- K. Jayakumar and **P. Nithiananthi**  
- Journal of Nano and Electronic Physics – **3** No1, P. 383-387(2011)
16. "Laser induced Semiconductor –Metal transition in a Semimagnetic Quantum Well"  
- **P.Nithiananthi** and K.Jayakumar  
- International Journal of Nanoscience **10**, 611 (2011)
17. "Dielectric Study of Nano CdS in Chitosan Matrix"  
- C.Raja Mohan, **P.Nithiananthi**, S.Murugan, K.Ramaseshan and K.Jayakumar  
- Asian Chitin. J. **7** ,18 (2011)
18. "Effect of  $\Gamma - X$  Mixing on the Donor States of Quantum Dot"  
P. Kalpana, K.Jayakumar and **P.Nithiananthi** (accepted)

**Communicated:**

19. Excited states of laser induced magnetic polaron in a Semimagnetic Quantum Well  
- P. Kalpana, C. Harish kumar, K. Jayakumar and **P. Nithiananthi**  
- Physics Procedia (under revision)

**National Journals:**

20. "Effect of pressure on the impurity states in Low Dimensional Semiconducting Systems"  
- S. Janaki Devi, **P. Nithiananthi** and K. Jayakumar  
- Solid State Physics (India) **45**, 463 (2002). **ISBN : 81-7764-484-X**
21. "On the impurity states of a Quantum Dot"  
- **P. Nithiananthi**, A. Siji and K. Jayakumar  
- Solid State Physics (India) **46**, 753 (2003). **ISBN : 81-7764-652-4**
22. "Effect of the location of donor impurity on diamagnetic susceptibility in a Quantum Well"  
- **P. Nithiananthi** and K. Jayakumar  
- Solid State Physics (India) **50**, 773 (2005). **ISBN : 81-8362-019-6**
23. "Effect of  $\Gamma - X$  crossover on Semiconductor – Metal transition in a Quantum Well"  
- **P. Nithiananthi** and K. Jayakumar  
- Solid State Physics (India) **51**, 769 (2006). **ISBN : 81-8372-030-7**
24. "Laser – induced Mott transition in a Quantum Dot"  
- **P. Nithiananthi** and K. Jayakumar

**International Conferences:**

25. "Diamagnetic Susceptibility of a hydrogenic donor in low lying excited states in a Quantum well"  
- **P. Nithiananthi** and K. Jayakumar  
- International Conference on Nanoscience and Technology – ICONSAT – 2006, India  
Habitat Centre, New Delhi, India (2006).
26. "Diamagnetic susceptibility of a hydrogenic donor in a Quantum Well Wire"  
- **P. Nithiananthi**, M. Parameswari, K. Anjana, T. Prem Kumar and K. Jayakumar  
- Eighth International Conference on Nanostructured Materials – NANO 2006, IISC,  
Bangalore (2006).
27. "Diamagnetic susceptibility of a hydrogenic donor in a Quantum Dot"  
- **P. Nithiananthi**, A. Merwyn Jasper D Reuben, C. Rajamohan, S. Saravana Kumar and K. Jayakumar  
- Eighth International Conference on Nanostructured Materials – NANO 2006, IISC,  
Bangalore (2006).
28. "Laser induced Semiconductor – Metal transition in a Quantum Well"  
- C. Rajamohan, **P. Nithiananthi**, and K. Jayakumar  
- International Conference on Nanoscience and Technology – ICONSAT– 2008, Chennai Trade  
Centre, Chennai, India.
29. "Laser dressed hydrogenic impurity states in a Semiconductor Quantum Well"  
- A. Merwyn Jasper D Reuben, **P. Nithiananthi**, C. Rajamohan and K. Jayakumar  
- International Conference on Nanoscience and Technology – ICONSAT– 2008, Chennai  
Trade Centre, Chennai, India.
30. "Effect of magnetic field on the laser – dressed donor in a Semimagnetic Quantum Well"  
- **P. Nithiananthi** and K. Jayakumar  
- International Conference on Advances in Nanotechnology, ICANAT-2008, Raipur, India
31. "Donor states in a semimagnetic quantum well"  
- **P. Nithiananthi** and K. Jayakumar  
- International Conference on Active / Smart Materials – 2009  
- Thiagaraja College of Engineering, Madurai.
32. Effect of laser on the diamagnetic susceptibility of a donor in a Quantum Well  
- C. Rajamohan, **P. Nithiananthi** and K. Jayakumar  
- International Conference on Active / Smart Materials  
Thiagarajar College of Engineering, Madurai, India (2009)
33. Laser induced Semiconductor –Metal transition in a Semimagnetic Quantum Well  
- **P. Nithiananthi** and K. Jayakumar  
- International Conference on Nano Science and Technology- ICONSAT2010  
Indian Institute of Technology- Bombay, Mumbai, India, Feb 17-20, (2010)
34. Laser-dressed spin polaron in CdTe – Cd<sub>1-x</sub>Mn<sub>x</sub>Te Quantum Well  
- **P. Nithiananthi**, Dinesh Varshney and K. Jayakumar  
- International Conference on Nanoscience and Nanotechnology –ICONN2010  
SRM University, Chennai, India, Feb 24-26 (2010)  
**Proc. of the International Conference on Nanoscience and**

35. Excited states of a magnetic polaron in a Quantum Well  
*K. Jayakumar and P. Nithiananthi*  
International Symposium on Semiconductor materials and Devices.(ISSMD 2011)  
M.S. University, Vadodara, Gujarat.
36. Effect of  $\Gamma - X$  Mixing on the Donor States of Quantum Dot  
*P. Kalpana, K.Jayakumar and P.Nithiananthi*  
Indo-Japan Conference on Frontier Nanomaterials for  
Energy(FNE-12), Sharada University, Noida , Jan9-11 (2012)
37. Effect of hydrostatic pressure on the binding energy of a donor confined in a parabolic Quantum Well  
*T.Raghuvaran, K.Jayakumar and P.Nithiananthi*  
International Conference on Nano Science and Technology , ICONSAT 2012  
ARCI,Hyderabad,Jan20-23(2012)
38. Influence of  $\Gamma$ -x band crossover on the Excited states of a Donor in a Quantum Dot  
*P.Kalpana, A. Merwyn Jasper D' Reuben and P.Nithiananthi*  
International Conference on Nano Science and Technology , ICONSAT 2012  
ARCI,Hyderabad,Jan20-23(2012)
39. Effect of  $\Gamma$ -x band mixing on the donor binding energy in a Quantum Wire.  
*R.Vijayashanthi, K.Jayakumar and P.Nithiananthi*  
International Conference on Materials Science and Technology, ICMST 2012, Kottaym,  
Kerala, June10-14.

**National Seminar / Symposia:**

40. "Effect of impurity location on the low lying excited states in a Quantum Well"  
- *P. Nithiananthi and K. Jayakumar*  
- National Conference on Spectroscopy, Pachappa's College, Chennai, India (2000).
41. "Donor binding energy of an excited state in a Quantum Well"  
- *E. Radha, P. Nithiananthi and K. Jayakumar*  
- National Conference on Material Science, Nehru Memorial College, Thiruchirapalli, India (2000).
42. "Binding energy of some low lying excited states in a Quantum Well"  
- *P. Nithiananthi, E. Radha and K. Jayakumar*  
- Current Trends in Material Science, Mahatma Gandhi University, Kottayam, India (2001).
43. "Effect of Temperature on the binding energy of a donor in a Quantum Well"  
- *P. Nithiananthi, E. Radha and K. Jayakumar*  
- National Seminar on Solid State Spectroscopy, Sri Venkateswara University,  
Tirupathi, Andhra Pradesh, India (2001). \
44. "Effect of  $\Gamma$ - X crossover on the ground state donor binding energy of a Quantum Well"  
- *P. Nithiananthi and K. Jayakumar*  
- National Symposium on Advanced Electronic Materials and Information  
Technology, Guru Ghasidas University, Bilaspur, Chattisgarh, India (2003).
45. "Modeling of donor binding in GaAs/Al<sub>x</sub>Ga<sub>1-x</sub>As Quantum Dot"  
- *P. Nithiananthi and K. Jayakumar*

- National Seminar on Novel Trends and Synthesis, Structure, Reaction Dynamics and Biological studies on Coordination compounds, Gandhigram Rural Institute, Gandhigram, Tamilnadu, India (2005).
46. “Study on the effective mass and subband energy in semiconductor nanostructures”  
- *C. Rajamohan, A. Merwyn Jasper D. Reuben, **P. Nithiananthi** and K. Jayakumar*  
- National Conference on Smart Materials and Recent Technologies, Sri Venkateswara University,  
- Tirupathi, Andhra Pradesh, India (2007).
47. “Effect of Laser Intensity on the Semiconductor – Metal Transition in a doped Quantum Well”  
- *A. Merwyn Jasper D Reuben, **P. Nithiananthi** and K. Jayakumar*  
- National Conference on Semiconductor Materials and Technology.  
- Haridwar, (2008).
48. Synthesis and characterization of CdS Quantum Dot  
- *G. Ramadevi, **P. Nithiananthi** and K. Jayakumar*  
- National Conference on Advanced Materials , Devices and Technologies, Sri Venkateswara University, Tirupathi , Andra Pradesh (2008)
49. Effect of Anderson localization on the Semiconductor-Metal Transition in a Quantum Well  
- *S. Prahasini , **P. Nithiananthi** and K. Jayakumar*  
- National Conference on Advanced Materials and Characterization, NCAMC 2008 Vellore Institute of Technology ,Vellore, Tamilnadu (2008)
50. “Mott transition in a Semiconductor Quantum Well under Laser field”  
- *A. Merwyn Jasper D Reuben, **P.Nithiananthi**, *C.Rajamohan and K.Jayakumar*  
- National Conference on current topics in Theoretical Physics – NCTP – 2009, University of Madras, Chennai.*
51. Excited states of laser induced magnetic polaron in a Semimagnetic Quantum Well  
- *C. Harish kumar, P. Kalpana, K. Jayakumar and **P. Nithiananthi***  
- National conference on Spintronic Materials: Nanostructures and Devices (SMND – 2011),  
- Kongu Engineering College, Perundhurai, Erode.