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**Dr.R.SELVAMANI**

Department of Mathematics

Karunya University

Karunya Nagar

Coimbatore – 641 114

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He obtained his Ph.D. award for his research in Solid Mechanics from Bharathiar University, Coimbatore. He has eleven years of Teaching Experience for UG and PG students. He has published two books which are available in the amazon.com and has published a number of research papers in journals of national and international repute. His research area includes Wave propagation in cylinder, panel, plate, composite cylinder and arbitrary cross section.

Personal Information:

Name : Dr.R.SELVAMANI
Designation : Assistant Professor
Department : Mathematics
Date of joining : 23-06-2004

Qualification with Specialization:

Degree	Major	Specialization	Year of Passing	College/ University
Ph.D	Mathematics	Solid Mechanics	2013	Bharathiar University
M.Phil	Mathematics	Fluid Mechanics	2004	Bharathidasan University
M.Sc.	Mathematics	Mathematics	2002	Bharathidasan University

Additional Qualification:

Qualification	Year
P.G.D.C.A	2001

Teaching Experience:

Classes	years		Institution	Department	Duration
	From	To			
UG	2003	2004	Raja serfoji Govt College Thanjavur	Mathematics	1 year
	2004	2017	Karunya University	Mathematics	13 years
PG	2008	2017	Karunya University	Mathematics	13 years

Total years of experience 14

Administrative Experience:

Position	Organisation	Duration	
		From	To
Member Board of studies	Karunya University	2009	Till date
Examiner U.G/P.G Valuation	Sri Ramakrishna engineering college, Coimbatore Kongu engineering college, perundurai, erode	2008	Till date
S.R.A	Karunya University	2004	2006
Programme officer - Journalism club	Karunya University	2005	Till date
Club co-coordinator Journalism club	Karunya University	2008	Till date
Department Admission Coordinator	Karunya University	2008	Till date

Courses Taught

U.G:

- All Engineering Mathematics
- Foundation Mathematics
- Numerical methods
- Discrete Mathematics
- Probability and random process
- Mathematical Transforms

P.G

- M.Sc Fluid Dynamics
- M.Sc Classical Mechanics
- M.Tech Computational Mathematics
Mechanical Engineering
Structural Engineering
Optimization Techniques
- M.Tech Mathematical and Statistical Methods
Renewable Engineering and Technology
- M.Tech Mathematics for Food Engineers.

Research

Wave propagation in cylindrical panel

The wave propagation in a cylindrical panel is discussed in case of homogeneous isotropic and transversely isotropic material using the linear three-dimensional theory of elasticity. Three displacement potential functions are introduced to uncouple the equations of motion. The frequency equations are obtained using the traction free, isothermal, thermally insulated and magnetic boundary conditions.

Ph.D Guidance

Supervisor

- ❖ Mrs. G.INFANT SUJITHA (Reg No. RP15MA001)
(Wave propagation in Non-Homogeneous material)
- ❖ Mr. B.PANNEERSELVAM (Reg No. RP15MA004)
(Dynamic Response of a composite material)
- ❖ Mrs.POONGOTHAI(Reg No. RP16MA001)
(Wave propagation in a Functionally graded material)
- ❖ Mr. R.MAHESH (Reg No. RP16MA004)
(Wave propagation in a Fiber reinforced material)
- ❖ Mr. N.Nicholas George (Reg No. RP14MA004)
(Chaotic vibration)

- ❖ Mr. M.MAHAVEER SREE JAYAN (Reg No. RP17MA001)
(Elastic waves in Nano material)

Research Coordinator

- ❖ Mrs. G. SHEEBA MERLIN (Reg No.RP10MA004)

Doctoral committee member

- ❖ MS.J.GRAYNA (REG NO: RP15MA002)
- ❖ Mr.A.KOILRAJ(REG NO:RP15ME009)

M.Sc project completed-4

Journal Publications:

SCOPUS Author ID: 36991778900

1. Dispersion analysis of magneto-electro elastic plate of arbitrary cross-sections immersed in fluid **World Journal of Engineering** (accepted)(2017). (*SCI&Scopus*)
2. Exponential Synchronization of Lure's complex dynamical networks with uncertain inner coupling and pinning impulsive control **Applied Mathematics and Computation** 307 (2017)217-231. (*SCI&Scopus*)
3. Mathematical modeling of HIV infection using Fractional Order Differential equation **Metro Journal of Modern Sciences**, 4(1) (2017) 21-23.
4. Mathematical modeling of thermo elastic waves in a Nano plate **Metro Journal of Modern Sciences**, 4(1) (2017) 11-14.
5. Study on Fuzzy Topological relation in meteorology applications **Metro Journal of Modern Sciences**, 4(1) (2017) 17-19.
6. Study on vibration signature analysis using fast Fourier transform Indo **Global Journal of Applied Engineering**, 5(1) (2017) 265-268.
7. Mathematical Modeling of Forced Vibration of a Piezoelectric Circular Rod, **Journal of Statistics and Mathematical Engineering** Volume 3 Issue 1(2017).
8. Modeling of elastic waves in a fluid-loaded and immersed piezoelectric circular fiber, **International Journal of Applied and Computational Mathematics** (Accepted). (*Springer*).

9. Stress waves in a generalized thermo elastic polygonal plate of inner and outer cross sections, **Journal of Solid Mechanics** (Accepted). (**Scopus**).
10. Dispersion Analysis in a Fluid Filled and Immersed Transversely Isotropic Thermo-Electro-Elastic Hollow Cylinder, **Mechanics and Mechanical Engineering** 20(3)(2016) 209-231. (**Scopus**).
11. Free Vibration in a Non-Homogeneous Piezoelectric Plate of Polygonal Shape, **Journal of Statistics and Mathematical Engineering** 2(2016) 1-15.
12. Influence of thermo-piezoelectric field in a circular bar subjected to thermal loading due to laser pulse, **Materials Physics and Mechanics** 27 (2016) 1-8. (**Scopus**)
13. Modeling of elastic waves in a rotating disc of polygonal cross-section, **Journal of Statistics and Mathematical Engineering** 2(2016) 1-14.
14. Wave propagation in a transversely isotropic magneto-electro-elastic solid bar immersed in an inviscid fluid, **Journal of Egyptian Mathematical Society** 24(2016) 92–99 (**Elsevier**)
15. Free vibration analysis of rotating piezoelectric bar of circular cross section immersed in fluid, **Materials Physics and Mechanics** 24 (2015) 24-34. (**Scopus**)
16. Wave propagation in a rotating disc of polygonal cross- section immersed in an inviscid fluid **Cogent Engineering** (2015), 2: 1002162 (**SCI&Scopus**)
17. Wave propagation in a generalized piezothermoelastic rotating bar of circular cross-section, **Multidiscipline Modeling in Materials and Structures** (2015) Vol. 11 Iss: 2, pp.216 - 237 (**Scopus**)
18. Dynamic response of a heat conducting solid bar of polygonal cross sections subjected to moving heat source, **Materials Physics and Mechanics** 21 (2014) 177-193. (**Scopus**)
19. Modeling and Analysis of waves in a heat conducting thermo-elastic plate of elliptical shape ,**Latin American Journal of Solids and Structures** 11 (2014) 2589-2606. (**SCI&Scopus**)
20. Wave propagation in a homogeneous isotropic finite thermo-elastic thin cylindrical shell **International Journal of Advances in Engineering & Technology** 7(2)(2014) 438-448.
21. Flexural wave motion in a heat conducting doubly connected thermo-elastic plate of polygonal cross-sections **Materials Physics and Mechanics** 19 (2014) 51-67. (**Scopus**)
22. Mathematical modeling and analysis of single beam piezo electric energy harvesting **International journal of Mathematics and Computer Research** 2(4)(2014)389-393.

23. Dynamic response of a solid bar of cardioidal cross -sections immersed in an inviscid fluid, **Applied Mathematics and Information Sciences** 8(6)(2014) 1-11 (**SCI&Scopus**)
24. Generalized thermo elastic waves in a rotating ring shaped circular plate immersed in an inviscid fluid, **Materials Physics and Mechanics** 18 (2013) 77-92. (**Scopus**)
25. Elasto dynamic wave propagation in a transversely isotropic piezoelectric circular plate immersed in fluid **Material Physics and Mechanics**, Volume.17, 164-177,2013. (**Scopus**)
26. Flexural vibration in a heat conducting cylindrical panel resting on a Winkler elastic foundation, **Material Physics and Mechanics**, Volume.17, 121-134,2013. (**Scopus**)
27. Generalized thermo elastic waves in a rotating plate subjected to ramp type increase in boundary temperature, **Journal of Mechanical Engineering and Technology**, Volume 1(2),57-65,2013.
28. Longitudinal Waves in a Rotating Solid Cylinder Immersed in an Inviscid Fluid Using Chebyshev Polynomial, **Frontiers of Engineering Mechanics Research** Volume.2(2),42-50,2013.
29. Extensional waves in a transversely isotropic solid bar immersed in an inviscid fluid using chebyshev polynomial, **Material Physics and Mechanics** Volume.16,82-91,2013. (**Scopus**)
30. Generalized thermo elastic wave propagation in a cylindrical panel embedded on elastic medium, **J.KSIAM** Volume.17(1),1-15,2013.
31. Wave propagation in magneto thermo elastic cylindrical panel, **European journal of Mechanics-A solids** Volume.39,76-85,2013. (**SCI&Scopus**)
32. Wave propagation in a generalized thermo elastic circular plate immersed in fluid. **Structural Engineering and Mechanics** Volume.46(6),827-842,2013. (**SCI&Scopus**)
33. Dispersion of thermo elastic waves in a homogeneous isotropic rotating cylindrical panel. **International Journal of Advances in Applied sciences**. DOI: [10.11591/ijaas.v2i1.1539](https://doi.org/10.11591/ijaas.v2i1.1539) Volume.2(1),41-50,2013. (**Scopus**)
34. Dispersion analysis of a generalized magneto thermo elastic cylindrical panel, **Journal of thermal stresses**. Volume 35(12), 1119-1142.2012. . (**SCI&Scopus**)
35. Effect of rotation in an axisymmetric vibration of a transversely isotropic solid bar immersed in an inviscid fluid. **Material Physics and Mechanics**. Volume 15,97-106 ,2012. (**Scopus**)
36. Damping of generalized thermo elastic waves in a homogeneous isotropic plate **Materials Physics and Mechanics** Volume 14,64-73 ,2012. (**Scopus**)

37. Wave propagation in a generalized thermo elastic plate embedded on elastic medium, ***Interaction and multiscale mechanics***. Volume 5, 13-26, 2012. **(SCI)**
38. Wave propagation in a cylindrical panel embedded on elastic medium, ***International Journal of Mathematics and Scientific Computing***, Volume 1(2), 106-111,2012.
39. Wave propagation in a thermo elastic cylindrical panel embedded on elastic medium, ***International journal of applied mathematics and mechanics***, volume 7 (19): 83-96,2011.
40. Wave Propagation in a Homogenous Isotropic Thermo elastic Cylindrical Panel , ***International Journal of Computational Science and Mathematics***, Volume 3, Number 2 , 215-226, 2011.
41. Wave Propagation in a Homogenous Isotropic Generalized Thermo elastic Cylindrical Panel, ***Elixir journal of applied mathematics*** ,Volume 36,3429-3433,2011.
42. Wave Propagation in a Homogeneous Isotropic Cylindrical Panel, ***International Journal of Advances in Theoretical and Applied Mathematics.***, Volume 6, Number 2, 171-181,2011.
43. Mathematical modeling of waves in a homogeneous isotropic rotating cylindrical panel, ***Romanian journal of mathematics and computer science***, volume 1, p.12-28,2011.
44. Modeling of Flexural Waves in a Homogeneous Isotropic Rotating Cylindrical Panel, ***Advances in Physics Theories and Applications***, Volume 1,16-25,2011.
45. Thickness shear wave propagation in a transversely isotropic piezoelectric cylindrical panel, ***Proceeding of the international conference on Mathematical and Computational Models***. Narosa Publishing House,New Delhi,India. pp.518-532,2011.
46. Mathematical modeling of waves in circular plate embedded on elastic ***Proceeding of the international conference on Mathematical modeling and applied soft computing***. Shanga verlag,pp.699-706.2012.
47. Three dimensional vibration in generalized thermo elastic rotating circular plate. ***Proceeding of the international conference on mathematics-A global scenario***,pp.70-75.2012.
48. Thermo elastic waves in a homogeneous isotropic plate with one relaxation time. ***Proceeding of the 2nd World conference on applied science, Engineering&Technology***,pp.148-149.2013.
49. Modeling of ideal solar cell. ***Proceeding of the 2nd World conference on applied science, Engineering&Technology***,pp.119-120.2013.

50. *Modeling and analysis of torsional waves in a piezoelectric solid cylinder immersed in an inviscid fluid. Proceeding of International conference on Mathematical sciences, pp.274-278.2014(Elsevier).*

PAPER PRESENTATION:

International:

1. Paper entitled, ‘**Three dimensional dynamic analysis of isotropic cylindrical panel**’ presented in International conference conducted by Allahabad University, Allahabad (2010).
2. Paper entitled, ‘**Thickness shear vibration in a transversely isotropic piezo electric cylindrical panel**’ in International conference conducted by PSG,Coimbatore. (2011).
3. Paper entitled, ‘**Mathematical Modeling of Waves in a Circular plate embedded on elastic medium**’ in International conference conducted by C.I.T ,Coimbatore.(2012).
4. Paper entitled “ **Three dimensional vibration in generalized thermo elastic rotating circular plate**”,in International conference conducted by D.G.Vaishnav College,Chennai.(2012).
5. Paper entitled “**Thermo elastic waves in a homogeneous isotropic plate with one relaxation time**”,in 2nd World conference conducted by Gitam University Hyderabad.(2013).
6. Paper entitled “**Modeling and analysis of torsional waves in a piezoelectric solid cylinder immersed in an inviscid fluid**”, in International Conference on Mathematical Sciences conducted by Sathiyabama University Chennai.(2014).
7. Paper entitled “**Mathematical Modeling of forced vibration of piezo electric circular rod**”, in International Symposium on Neoteric Notion in Algebra conducted by *Nandha College of Arts and Science* Erode–52.(2016).
8. Paper entitled “**Modeling and analysis of an electro elastic circular fiber guided with thin film**”, in International Conference on Strategic Shift In Business Excellence For Sustainable Development in Indo-Global Business and Technology by Ganesh School of Business Management Salem–111.(2017).
9. Paper entitled “**Mathematical Modeling of Thermo elastic Waves in a Nano plate**”, in International Conference on Strategic Shift In Business Excellence For Sustainable Development in Indo-Global Business and Technology by Ganesh School of Business Management Salem–111.(2017).

National:

1. Paper entitled, 'Vibration of generalized thermo elastic cylindrical panel' presented in National conference conducted by Govt Arts College ,Coimbatore.
2. Paper entitled, 'Vibration of isotropic cylindrical panel' presented in National conference conducted by Dept of Mathematics , Kalingar Karunanidhi Institute of Technology, Coimbatore.
3. Paper entitled, 'Wave propagation in a piezo composite cylindrical panel' presented in National conference conducted by IIT Madras.
4. Paper entitled, 'Wave propagation in a homogeneous isotropic cylindrical panel' presented in National conference conducted by karunya University,Coimbatore.
5. Paper entitled, "Torsional vibration of thermo elastic finite cylinder", presented in State level conference conducted by Nandha Arts and Science college, Erode.
6. Paper entitled "Real analysis-Change of variable", One day seminar on Mathematics and its applications, AVVM Pushpam College, Poondi.
7. Paper entitled, "Mathematical modeling and analysis of single beam piezo electric energy harvester.", presented in National conference on mathematical sciences and applications conducted by Karunya University, Coimbatore.
8. Paper entitled, "Mathematical modeling of quasi-static magnetic shape memory alloys", presented in National conference on mathematical sciences and applications conducted by Karunya University, Coimbatore.

Guest Lecture/Invited Talks:

1. Guest lecture delivered on **Applications of Transforms and Partial differential equations in mechanical engineering** on 12th Sep-2014 at SNS College of Technology(Autonomous),Coimbatore-35.
2. Guest lecture delivered on **Mathematical tools for Engineering fields** on 6th Feb-2015 at KPR Institute of Engineering and Technology,Coimbatore-407.

3. Guest lecture delivered on **Real life Applications of Mathematics in Science and Technology** on 31st July -2015 at *Kovai Kalaimagal College of Arts and Science* Narasipuram, Coimbatore – 641109.(Accredited by NAAC with " A "Grade).
4. Invited talk delivered on **Mathematical Theory of Elasticity in the national conference on ADVANCED MATHEMATICAL TECHNIQUES IN CONTINUUM MECHANICS-AMTCM-16** on 29th Feb -2016 at *Nandha College of Arts and Science* Erode–52 (Accredited by NAAC with " A "Grade).
5. Guest lecture delivered on **Applications of statistics and numerical methods** on 19th MARCH-2016 at *SNS College of Engineering,Coimbatore-107*. (Accredited by NAAC with " A "Grade).
6. Guest lecture delivered on **Joy of learning Mathematics** on 17th AUGUST-2016 at *PKR Arts College for Women, Gobichettipalayam*. (Accredited by NAAC with " A "Grade).
7. Guest lecture delivered on **Application of Mathematics in Day to day life** on 2nd March - 2017 at *PKR Arts College for Women, Gobichettipalayam*. (Accredited by NAAC with " A "Grade).

National Conference/Workshops/FDP(participated):

1. **Workshop** on Matlab and its Application conducted by Department of Mathematics,Vinayaka Mission University,Salem.
2. **Workshop** on Revamping the mathematics syllabus conducted by Department of Mathematics, Karunya University,Coimbatore.
3. **Workshop** on Effective Teaching conducted by Department of Mathematics, Karunya University,Coimbatore.
4. **Workshop** on Joy of Teaching Transforms conducted by Department of Mathematics, P.S.G College of tech, Coimbatore.
5. **Workshop** on Recent trends in applied mathematics, conducted by Karunya University,Coimbatore.
6. **Workshop** on Journalism writing conducted by Department of Mathematics, Karunya University, Coimbatore.
7. **Training programme** on Aptitude Skill Course conducted by Career Launcher India Limited .
8. **National conference** on Recent Trends in Applied Mathematics conducted by Department of Mathematics, Annamalai University.

9. **National conference** Discrete and Fuzzy Mathematics conducted by Department of Mathematics, Karunya University, Coimbatore.
10. **National conference** on Mathematical Sciences – A Key to Engineering and Tech conducted by Department of Mathematics, Sona college of Tech,Salem.
11. **F.D.P** on Recent Trends in Applied Mathematics conducted by Department of Mathematics, Karunya University, Coimbatore.
12. **National conference** on Mathematical Sciences and Applications conducted by Department of Mathematics, Karunya University, Coimbatore.
13. **One day seminar** on Soft computing theory and Matlab conducted by Department of Mathematics, Karunya University, Coimbatore.
14. Acted as chair person in the national conference on **ADVANCED MATHEMATICAL TECHNIQUES IN CONTINUUM MECHANICS-AMTCM-16** on 29th Feb -2016 at *Nandha College of Arts and Science Erode-52 (Accredited by NAAC with " A “Grade)*
15. **Workshop on Improving Effectiveness of teaching and Quality of Education**,on24th-June 2016, conducted by Karunya University,Coimbatore.

Books Published:

1. **Basic Engineering Mathematics**, A. Hepzhiba christinal , R.Selvamani, K.Porselvi, H.S.I Publication, Mumbai, ISBN-818822315.
2. **Basic Theory of Equation**, R. Selvamani, LAMBERT Academic Publishers,Germany ISBN 978-3-65917450-6.

Membership Details:

Indian Mathematical Society (IMS)
 International Association of Engineers (IAENG)
 International Association for Computer Science and Information Technology (IACSIT)
 World Academy of Science and Technology (WASET)

Awards and Honours:

1. National Talent Exam -1995
2. Proficiency Prize in B.Sc-1997
3. Best Research paper Award 2012
4. Best Researcher Award 2013.

Editorial board member

1. International Journal of Electromagnetics (IJEL)
2. International Science Index(ISI)
3. Computational Science and Engineering Research Journal
4. Journal of Mathematical Sciences (JMS)]
5. International journal of Statistics and Engineering Mathematics

Referee's / Reviewer

S.NO	Position	Name of the journal society	Period	
1	Reviewer	Journal of Electromagnetic Waves and Applications	From 2013	Till date
2	Reviewer	Meccanica	From 2013	Till date
3	Reviewer	Structural engineering and mechanics	From 2012	Till date
4	Reviewer	World academy of science and technology	From 2013	Till date
5	Reviewer	Journal of Solid Mechanics	From 2014	Till date
6	Reviewer	Journal of Egyptian Mathematical Society	From 2013	Till date