

FACULTY PROFILE TEMPLATE

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- ❖ **Please mention year of passing (Educational Qualifications)**
- ❖ **In case of Updating Existing Faculty profiles, please send the new additions in 'Highlighted Form/Text'.**

Basic Details:

- **Name:** P. Devaki
- **Designation:** Associate Professor
- **Phone Number:** 9985010199
- **Email ID:** devakip@srmist.edu.in
- **Area or Subject:** Biofluid Dynamics
- **Affiliation:** Department of Mathematics, SRM Institute of Science and Technology, Ramapuram.

Educational Details:

- **Degree** – M. Sc., M. Phil., Ph. D.
- **Area or Subject** – Mathematics
- **University**

Ph. D. Applied Mathematics – 2013, Sri Venkateswara University, Tirupati.

M. Phil. Applied Mathematics – 2010, Sri Venkateswara University, Tirupati.

M.Sc. Applied Mathematics – 2006, Sri Venkateswara University, Tirupati.

B.Sc. Mathematics, Statistics, Computers – 2004, Sri Padmavathi Women's Degree College, Tirupati.

Other Details:

Courses:

- Algebra
- Topology
- Functional Analysis
- Number Theory
- Ordinary Differential Equations
- Partial Differential Equations
- Operations Research
- Advanced Operations Research
- Discrete Mathematics
- Probability and Statistics
- Advanced Calculus
- Fourier Series & Integral Transforms
- Linear Algebra
- Differential Equations and Complex Analysis

Research Interests: Fluid Dynamics, Computational Fluid Dynamics

Selected Publications:

- With Vajravelu. K, Sreenadh. S, and Prasad, K.V., Mathematical model for a Herschel-Bulkley fluid flow in an Elastic tube, "Central European Journal of Physics", 9(5), 1357-1365 (2011).
- With S. Sreenadh and D. Venkateswarulu Naidu, Peristaltic Transport of Two Immiscible Jeffrey Fluids in an Inclined Circular Tube, "International Journal of Mathematics and Scientific Computing", VOL.1, NO.2., MSC 2010 Codes – 76Txx, 76Zxx, 101-105 (2011).
- With S.Sreenadh, Mathematical Model for the Peristaltic transport of a viscous fluid in an elastic tube,Atti Della "Fondazione Giorgio Ronchi", Anno Lxvii, - N. 2, 163 – 173 (2012).
- With Badari Narayana, CH and S. Sreenadh, Finite difference analysis of steady flow of a Jeffrey fluid in an inclined two-dimensional channel, "Global Journal of Engineering & Applied Sciences",: 2(1)68-71 (2012).
- With C. H. Badari Narayana and S. Sreenadh, Oscillatory flow of a Jeffrey fluid in an elastic tube of variable cross-section, "Advances in Applied Science Research",3 (2), 671-677 (2012).
- With N. Naga Jyothi and S.Sreenadh, Effect of porous lining on the peristaltic transport of a casson fluid in an inclined channel,"International Journal of Mathematical Archive (IJMA)" – 4(4), 262-275 (2013).
- With K. Lalitha Jyothi, P. Devaki and S. Sreenadh, Pulsatile flow of a Jeffrey fluid in a circular tube having internal porous lining, "International Journal of Mathematical Archive (IJMA)"4(5), 75-82 (2013).
- With N. Naga Jyothi, and S.Sreenadh, High frequency unsteady peristaltic flow of a Jeffrey fluid in uniform and tapered tube, "Elixir Fluid Dynamics" 60, 16152-16166 (2013).

- With D.Venkateswarlu, and S.Sreenadh, Effects of Heat Transfer and Peristalsis on the Flow of Power-Law Fluid in Contact with Newtonian Fluid in an Inclined Channel with Permeable Walls, International Journal of Engineering Science and Innovative Technology 2(6), 5535-543 (2013).
- With S.Sreenadh and D.Venkateswarlu Naidu, Peristaltic transport of two immiscible power law fluids in a circular tube with permeable wall, International Journal of Scientific Research Engineering & Technology 2(9), 568-577 (2013).
- With N. Naga Jyothi and S.Sreenadh, Effects of Porous Lining and Elasticity on the Peristaltic Transport of a Jeffrey Fluid in an Elastic Tube, International Journal of Engineering and Interdisciplinary Mathematics 5(2), 75-86 (2013)
- With C. H. Badari Narayana and S. Sreenadh, Peristaltic Transport of a Herschel-Bulkley Fluid in Contact With a Newtonian Fluid in a Circular Tube "International Journal of Engineering Sciences & Research Technology", 575-581, 3(2) (2014).
- With S.Sreenadh, Hagen Poiseuille flow through an elastic circular pipe having internal circular porous lining, Atti della "Fondazione Giorgio Ronchi" Anno LIX, 2, 1-9, (2014).
- With K.Vajravelu, S. Sreenadh and K.V.Prasad, Peristaltic transport of Herschel Bulkley fluid in an elastic tube, Heat transfer Asian Research, 44(7), 585-598, (2015).
- With K.Vajravelu, S. Sreenadh, and K.V.Prasad, Peristaltic transport of Casson fluid in an elastic tube Journal of Applied Fluid Mechanics 9(4), 1897-1905 (2016).
- With N. Naga Jyothi, and S.Sreenadh, Analysis of magnetic field on the peristaltic transport of Johnson-Segalman fluid in an inclined channel bounded by flexible walls, International Journal of Current Research 8(2), 26617-26634 (2016).
- With N. Naga Jyothi, and S.Sreenadh, Effect of Thickness of Porous lining on the peristaltic transport of a conducting fluid in an inclined channel bounded by flexible walls coated by porous material, International Journal of Engineering Research and Management, 3(9), 40-46, (2016).
- With C. H. Badari Narayana and S. Sreenadh, Flow of Bingham fluid in contact with a Jeffrey fluid in a circular tube, International Journal of Engineering Research and Management, 3(6), 96-99, (2016).
- With C. H. Badari Narayana and S. Sreenadh, Effect of Elasticity on Herschel-Bulkley Fluid Flow in a Tube, International Journal of Advanced Research in Innovative Discoveries in Engineering and Applications, 1(2), 9-16, (2016).
- With C. H. Badari Narayana and S. Sreenadh, Effect of Elasticity and inclination on Herschel-Bulkley Fluid Flow in a Tube, International Journal of Advanced Information Science and Technology 6 (2), 6-12, (2017).
- With S. Sreenadh, K.Vajravelu, K.V.Prasad, and Hanumesh Vaidya, Wall Properties and Slip Consequences on Peristaltic Transport of a Casson Liquid in a Flexible Channel with Heat Transfer, Applied Mathematics and Nonlinear Sciences, 3(1) (2018) 277–290.
- With K.Lalitha Jyothi and S. Sreenadh, The influence of wall properties on the peristaltic pumping of a casson fluid in an inclined channel, International Journal of Research and Analytical Reviews, E-ISSN 2348-1269, P- ISSN 2349-5138, Volume.6, Issue 1, Page No pp.217-223, (2019)
- With B Venkateswarlu, S Srinivas, and S Sreenadh, MHD Peristaltic flow of a nanofluid in a constricted artery for different shapes of nanosized particles, Nonlinear Engineering, (2019) 9 (1), 51-59.
- With A. Subbarao, Ramprakash Sharma and S. Sreenadh, Impact of Hematocrit on the flow of Casson fluid in Contact with Jeffery Fluid over a narrow pipe, Indian Journal of Pure and Applied Physics, Vol. 58, October 2020, pp.

- With Kavitha A., Venkateswarlu Naidu D., and Sreenadh S. (2019) The Influence of Wall Properties on the Peristaltic Pumping of a Casson Fluid. In: Rushi Kumar B., Sivaraj R., Prasad B., Nalliah M., Reddy A. (eds) Applied Mathematics and Scientific Computing. Trends in Mathematics. (Chapter), 167-179.
- With S. Sreenadh, (2019) Mathematical Study of Biofluid Flows in Elastic tubes, Scholar's Press. ISBN: 978-613-8-84003-9. (BOOK) International
- With Devaki.P, C. H. Badari Narayana, A. Kavitha, and S. Sreenadh, (2020) Effect of Permeable Boundaries on the Flow of a Jeffrey Fluid in a Channel of Varying Cross-Section, Accepted in Advances in Fluid Dynamics. (Chapter)

Papers Presented:

- Presented a paper entitled "Poiseuille Flow through a Porous Medium Bounded by Parallel Plates" in a National Conference on "Recent Trends on Mathematical Modeling", March 20, 2009 held at Sri Venkateswara University, Tirupati.
- Presented a paper entitled "Non-Linear and Curvature Effects on Peristaltic flow of a Viscous Fluid in an Asymmetric Channel with permeable walls" in International Conference on "Advances in Mathematical and Computational Methods", 5-7 January, 2011 held at Sri Padmavathi Mahila Visvavidyalam, Tirupati.
- Presented a paper entitled "Hagen Poiseuille Flow Through an Elastic Circular Pipe having Internal Circular Porous Lining" in National Conference on "Advances in Mathematical Sciences", 28-29 March, 2011 held at Sri Venkateswara University, Tirupati.
- Presented a paper entitled "Unsteady Flow of a Jeffrey Fluid with Attenuation in an elastic tube with Stenosis" in a National seminar on "Recent Developments in Mathematical Sciences", 22-23, December, 2011 held at Sri Venkateswara University, Tirupati.
- Presented a paper entitled "Mathematical Model for the Peristaltic Transport of a Casson fluid in an Elastic tube" in National Seminar on "Recent Trends in Mathematics", December 22, 2012 held at Sri Venkateswara University, Tirupati.
- Presented a paper entitled "Pulsatile flow of a Jeffrey fluid in a circular tube having internal porous lining" in a National seminar on "Advances in Fluid Dynamics", 30th May 2013 held at Sri Venkateswara University, Tirupati
- Presented a paper entitled "Peristaltic transport of two immiscible power law fluids in a circular tube with permeable wall" in a National Conference on "Recent Developments in Mathematics and its Applications", 29th January, 2014 held at Sri Venkateswara University, Tirupati
- Presented a paper entitled "Flow of a Jeffrey fluid in a channel of varying cross-section with permeable boundaries" in International Conference "Fifty Nine Congress of The Indian Society of Theoretical and Applied Mechanic ISTAM", 17-20 December, 2014
- Presented a paper entitled "Pulsatile flow of a power-law fluid in a circular tube having internal porous lining" in a National Conference on "Mathematics and its Applications", 22-23, December, 2015 held at Sri Venkateswara University, Tirupati.
- Presented a paper entitled "Peristaltic Transport of A Magnetic Fluid in A Vertical Slot With Mixed Convection" in "National Conference On Recent Trends In Mathematics and Its Applications" 22-23, December, 2016 held at Sri Venkateswara University, Tirupati.
- Presented a paper entitled "Influence of wall properties on the peristaltic pumping of a Casson fluid " in International Conference on Advances in Mathematical Sciences, 1-3 December, 2017, VIT Vellore, India.
- Presented a paper entitled "Effect of permeable boundaries on the flow of a Jeffrey fluid in a channel of varying cross section" in International Conference on applications of Fluid Dynamics, 13-15 December, 2018, VIT Vellore, India.
- Presented a paper entitled "Influence of peristaltic wave on the flow of magnetic fluid in a vertical slot with mixed convection" in International Conference on applications of Fluid Dynamics, 13-15 December, 2020, VIT AP, India.

Working Papers:

- With S. Sreenadh influence of hematocriton the flow of casson fluid in contact with newtonian fluid in a pipe

Work in Progress:

- With S. Sreenadh, Flows in tubes and channels, 2020, Ongoing work

Academic Experience:

- Worked as Asst.Professor in KMM Institute of PG Studies, Tirupati from 22-09-2006 to 30-01-2008.(1.4 yr)
- Worked as Guest Faculty for M.Sc.Mathematics in Sri Vidyanikethan Engineering College A.Rangampeta, Tirupati from August 2012 to April 2013). (0.8 yr)
- Worked as Assistant Professor of Mathematics,Department of General EngineeringBasic Sciences & Humanities in Sree Vidyanikethan Engineering College,A.Rangampeta, Tirupati from 13-06-2013 to 31-03-2015. (1.9 yr)
- Worked as Assistant Professor of Mathematics, Department of Mathematics, Madanapalle Institute of Technology and Science, Madanapalle from 01-04-2015 to 23-07-2018. (3.3 yr)
- Worked as Associate Professor of Mathematics, Department of Mathematics, CMR University, School of Engineering and Technology, Bangalore, from 26-07-2018 to 25-06-2020. (1.11 yr)
- Working as Associate Professor of Mathematics, Department of Mathematics, SMRIST, SRM University, Chennai, from 23/11/2020 to till date.

Other Professional Experience:

- Worked done as DST JRF in DST Major Research Project, Sri Venkateswara Universtiy, Tirupati (3 yr)(2009-2012).

Workshops /Seminars/Conferences:**International Conference**

1. International symposium on recent trends in Mathematical Sciences, July 15-16, 2019 held at VIT University, Vellore.

National Conference

- National Conference on “Applications of Mathematics in Engineering, physical and Life Sciences and xx1 Congress of APSMS”, 7-9, December 2012 held at Sri Venkateswara University, Tirupati.
- National Seminar on “Recent Developments in Mathematical Sciences” 28th June, 2013held at Sri Venkateswara University, Tirupati.
- National Conference on “Women in Mathematics with Special Reference to Lilavati”, 7-8 March, 2015 held at SPW Degree and PG College, Tirupati.

- Silver Jubilee Congress of APSMS-2016 and National Conference on Emerging trends in Mathematical Science & Applications in Engineering Sciences, 9-11 December, 2016 held at NBKR Institute of Science and Technology, Vidyanagar.
- 104th Indian Science Congress, 3-7 January, 2017 held at Sri Venkateswara University, Tirupati.

Workshop Attended

- National Workshop on “Mathematical Models for Biofluid Flows and Applications”, 22-26-January, 2010 held at Sri Venkateswara University, Tirupati.
- National Workshop on “Ancient India Mathematics with Special Reference to Vedic Mathematics and Astronomy”, 20-24 September, 2010 held at Rashtriya Sanskrit Vidyapeetha, Tirupati.
- Science Academies’ Lecture Workshop on “Mathematical Modelling in Science and Engineering”, 24-25 January, 2012 held at Sri Venkateswara University, Tirupati.
- National Workshop on “Ancient Indian Mathematics with special focus on Vedic mathematics and Astronomy”, 24-28 February, 2012 held at Rashtriya Sanskrit Vidyapeetha, Tirupati.
- National seminar on “Recent Developments in Fluid Dynamics”, 14-15, March 2012 held at Sri Venkateswara University, Tirupati.
- National workshop on “Outcome Based Learning”, 17-18 April, 2015 held at BITS Pilani, Hyderabad.
- Science Academies’ Lecture workshop on Theoretical and Computational Fluid Dynamics, 21-22 March, 2016 held at Sri Venkateswara University, Tirupati.
- Science Academies Lecture Workshop on Applications of Differential Equations in Engineering and Biology, March 9-11, 2017 held at Sri Venkateswara University, Tirupati.

Faculty Development Programme Attended

- Faculty Development Programme on High accuracy, high performance computing of fluid flows, 30 Dec, 2019 – 3 Jan, 2020 held at Osmania University, Hyderabad.

Achievements and Awards:

- Best Outgoing Student award in 2006 by Sri Venkateswara University, Tirupati

Membership:

- Life member in International Association of Engineers (IAENG) with Membership Number : 170575, 2016
- Associate member of Universal Association of Mechanical and Aeronautical Engineers (UAMAE) with Membership Number: AM10100056470, 2016, 3 years
- Life member in The Indian Science Congress Association (ISCA) with Membership Number: L31588, 2017

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