

Dr. Devanayagam Palaniappan

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Science & Engineering, Mathematics & Statistics
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Education

PhD, University of Hyderabad, 1991.

MS, Bharathidasan University, 1986.

BS, University of Madras, 1984.

Professional Employment

Assistant Professor, Texas A&M University, Corpus Christi. (January 2010 - Present).

Visiting Asst. Professor, Texas A&M University. (January 2007 - December 2009).

Visiting Asst. Professor, Texas A&M University - Qatar. (July 2004 - December 2006).

Professional Memberships

American Institute of Aeronautics and Astronautics
American Mathematical Society
International Union of Theoretical and Applied Mechanics

TEACHING

Teaching Experience

MATH 1314, COLLEGE ALGEBRA
MATH 1316, Trigonometry
MATH 2413, CALCULUS I
MATH 2414, CALCULUS II
MATH 3310, MATH ANALYSIS MECH ENGINEERING
MATH 3315, DIFFERENTIAL EQUATIONS
MATH 3470, CALCULUS III
MATH 5310, Differential Equations Leveling
MATH 5390, Analytical Methods in Applied Mathematics
MATH 5394, RESEARCH METHODS IN MATH
MATH 5396, DIRECTED INDEPENDENT STUDY
MATH 5995, THESIS
MATH 5997, DIRECTED RESEARCH
MEEN 3310, MATH ANALYSIS MECH ENGINEERING

Non-Credit Instruction

Partial Differential Equations. (May 2011 - July 2012).

SCHOLARLY AND CREATIVE ACTIVITIES

Publications

Refereed

Conference Proceedings

Padmavathi, B. Sri, Choudhuri, D., Palaniappan, D. (2012). *STOKESLET INDUCED SLIP FLOWS IN A SPHERICAL CONTAINER* (FM 10-029 ed., pp. 2 pages). Beijing: XXIII ICTAM.

Palaniappan, D. (2010). *Vortex Images in Intersecting Cylinder/Sphere Pairs via Successive-image Theory* (Art.No. USNCTAM 2010 - 1189 ed., pp. 2 pages). USNCTAM.

Journal Articles

Palaniappan, D., Trombly, C. (2015). Interaction of a straight line current with a superconducting sphere: Theoretical results. *Journal of Superconductivity and Novel Magnetism*, 28(12).

Palaniappan, D. (2014). On some general solutions of transient Stokes and Brinkman equations. *Journal of Theoretical and Applied Mechanics*, 52(2), 405-415.
www.ptmts.org.pl/jtam.html

Kim, S., Palaniappan, D. (2014). Hydrodynamic interactions between two slender tori in a viscous fluid. *American Institute of Chemical Engineers (AIChE) Journal*, 60(4), 1517-1522.

Palaniappan, D. (2012). Comment on "A theorem for a shear stress-free plane boundary in Stokes flow". *Mechanics Research Communications*.
<http://www.journals.elsevier.com/mechanics-research-communications/>

Palaniappan, D. (2012). 'Analytic Solutions for Some Basic Problems in Electricity Involving Intersecting Sphere and Circular Cylinder pairs'. *Electrical Engineering (Springer)*, 94, 107-116. <http://www.springerlink.com/content/4j38851j84461806/>

Palaniappan, D. (2011). 'A general Solution of Equations of Equilibrium in Linear Elasticity'. *Applied Mathematical Modelling*, 35(12), 5484-5499.
<http://www.journals.elsevier.com/applied-mathematical-modelling/>

Abstract

Palaniappan, D. (2015). *Oscillatory ow past a slip cylindrical inclusion embedded in a Brinkman medium* (21st ed., vol. 60). Bulletin of American Physical Society.

Palaniappan, D. (2014). *Axisymmetric rotational slow viscous flows around asymmetric fused dumbbells* (20th ed., vol. 59). Bulletin of the American Physical Society.
meetings.aps.org/Meeting/DFD14/Event/229146

Palaniappan, D. (2013). *Oscillatory Stokes Flow Past a Slip Cylinder* (18th ed., vol. 58). 66th Annual Meeting of the APS Division of Fluid Dynamics: Bulletin of the American Physical Society. meetings.aps.org/Meeting/DFD13/Event/202655

Palaniappan, D. (2012). *Streamline Patterns and Eddies in Slipping Stokes Flow* (17th ed., vol. 57). 65th Annual Meeting of the APS Division of Fluid Dynamics: Bulletin of the American Physical Society. meeting.aps.org/Meeting/DFD12/Session/M11.8

Palaniappan, D. (2010). *Vortex Induced Flows Involving Fused Cylinder/Sphere Pairs* (16th ed., vol. 55). 63rd Annual Meeting of the APS Division of Fluid Dynamics: Bulletin of the American Physical Society. meetings.aps.org/Meeting/DFD10/Event/134807

Presentations

Palaniappan, D., "Oscillatory flow past a slip cylindrical inclusion embedded in a Brinkman medium," American Physical Society - Division of Fluid Dynamics, Boston, MA. (November 2015).

Johnson, D. (Author & Presenter), Palaniappan, D. (Author), Chen, L.-D. (Author), "Explicit Forms of Solutions for the Temperature Field in a Bioflow Reactor Model," The 95th Texas Section Meeting of the Mathematical Association of America, San Antonio, Texas. (April 10, 2015).

Palaniappan, D., "Vortex interactions with topographic obstacles: Mathematics and applications," Faculty Research Development Program - TAMUCC, Harte Institute, TAMUCC. (December 17, 2014).

Palaniappan, D., "Axisymmetric rotational slow viscous flows around asymmetric fused dumbbells," American Physical Society - Division of Fluid Dynamics, San Francisco, CA. (November 23, 2014).

Palaniappan, D., 2014-2015 TAMUCC Faculty Research Development Program, Luis Cifuentes, TAMUCC, Coastal Bend Business Innovation Center, Corpus Christi, Texas. (October 25, 2014).

Palaniappan, D. (Author & Presenter), "Oscillatory Stokes Flow Past a Slip Cylinder," American Physical Society- Division of Fluid Dynamics, Pittsburgh, PA. (November 24, 2013).

Palaniappan, D. (Author & Presenter), "Computation of flow through porous particles," American Physical Society - Division of Particle Fields (APS_DPF) 2013, TAMUCC, Santa Cruz, CA. (August 2013).

Martinez, C. (Author & Presenter), Palaniappan, D., Chen, L.-D., "Analytical Results for a Coupled Non-Linear System of Ordinary Differential Equations Modeling Flame Propagation," 19th Annual Student Conference for Research & Creative Arts, TAMUCC, University of Houston - Clear Lake. (April 16, 2013).

Martinez, C. (Author & Presenter), Palaniappan, D. (Author), Chen, L.-D. (Author), "Some results for one-dimensional flame propagation model," International Conference on the Theory, Methods and Applications of Nonlinear Equations, Kingsville, Texas. (December 20, 2012).

Palaniappan, D. (Author & Presenter), "Streamline Patterns and Eddies in Slipping Stokes Flows," American Physical Society-Division of Fluid Dynamics, San Diego. (November 20, 2012).

Palaniappan, D., "Vortex flows," AIAA conference 2011, TAMUCC, Hawaii. (2011).

Palaniappan, D., "1. 'Vortex Induced Flows Involving Fused Cylinder/Sphere Pairs'," 63rd Annual Meeting of the APS Division of Fluids Dynamics, USNCTAM, Long Beach, California. (November 21, 2010).

Palaniappan, D., "2. 'Vortex Images in Intersecting Cylinder/Sphere Pairs via Successive-image Theory'," US National Congress of Theoretical and Applied Mechanics, USCNTAM, State College, Pennsylvania. (June 27, 2010).

Palaniappan, D., "3.'On Some Boundary Value Problems Involving Intersecting Spheres'," 18th Annual Meeting of the South Texas Mathematics Consortium, TAMIU, Texas A&M International, Laredo. (March 26, 2010).

Contracts, Grants and Sponsored Research

Grant

Palaniappan, Devanayagam (Co-Principal), "Development of Simulation Capability for Bio-flow Reactor," Sponsored by Photon8, Texas A&M University-Corpus Christi, \$49,859.00. (June 1, 2013 - January 31, 2014).

Palaniappan, Devanayagam (Principal), "Theoretical investigation of Viscous Fluid Transport in Porous Media," Sponsored by Research Enhancement Award, Texas A&M University-Corpus Christi, \$5,000.00. (September 1, 2012 - June 15, 2013).

Palaniappan, Devanayagam, "Vortex Ring Interactions with a Double Sphere: Topography Effects"., " Sponsored by TRDF, State, \$21,766.00. (August 31, 2011).

Scholarly and Creative Awards and Honors

Alexander von Humboldt Fellow, Humboldt Foundation, Germany. (1997).

SERVICE

Department

Committee Member, Graduate Program Committee. (October 2012 - Present).
Faculty Mentor, Engineering Tutors appointment committee. (August 2010 - Present).
Committee Member, Calculus. (January 2010 - Present).
Committee Member, Search Committee for Statistics position. (September 2012 - May 2013).

College

Committee Member, College of S&E Research Enhancement Committee. (August 2013 - July 2015).

University

Committee Member, Fast-Track MS program. (September 2015 - Present).

Professional

Reviewer, Journal Article, Numerical Methods for Partial Differential Equations. (November 2015 - Present).
Reviewer, Journal Article, Physics of Fluids. (August 2014 - May 2015).
Reviewer, Journal Article, Advances in Mathematical Physics. (October 2014 - March 2015).
Reviewer, Journal Article, Journal of Mathematical Analysis and Applications. (February 2014 - December 2014).
Reviewer, Journal Article, Physics of Fluids. (March 2013 - August 2013).
Reviewer, Journal Article, Journal of Fluid Mechanics. (November 2012 - June 2013).
Reviewer, Journal Article, International Journal of Engineering Science. (April 2012 - February 2013).

Reviewer, Journal Article, Journal of Physics. (February 2012 - 2012).

Reviewer, Journal Article, International Journal of Advances in Engineering Sciences and Applied Mathematics. (December 2011).

Reviewer, Journal Article, Sixtieth birthday for Prof. KR. Rajagopal. (December 2011).

Reviewer, Journal Article, Journal of Fluid Mechanics. (2011).

Reviewer, Journal Article, American Physical Society, 'Physics of Fluids'. (2010 - December 2011).