

T.AMARANATH

Books Published :

An Elementary Course in Partial Differential Equations

Narosa Publishing House, 1997 (first edition), 2000 (reprinted).
2003 (second edition), Reprinted in 2004, 2005, 2006, 2007, 2009,
2010, 2011, 2012, 2013.

US Edition published by Jones and Bartlett Publishers in 2009.

List of important research publications :

- 1 (with N.R.Rajappa) A Study of Taylor Instability of Superposed Fluids
- **Acta Mechanica**, Vol. 24 ,1976, pp 87 - 97.
- 2 (with N.R.Rajappa) A Three Dimensional Study of Standing Surface
Waves of Finite Amplitude - **Jl. of the Aero. Soc. of India**, Feb.
1977, No. 1, 2, pp 63 - 66.
- 3 (with N.R.Rajappa) Nonlinear Theory of Taylor Instability of Super-
posed Fluids of Different Densities in Three Dimensions - **Quart. Jl.
Mech. appl. Math.**, Vol. 30, Part 2, May 1977, pp 131 - 141; Cor-
rigendum, **Quart. Jl. Mech. appl. Math.**, Vol. 32, Part 1, 1979,
p93.
- 4 Taylor Instability of Superposed Fluids for Wave Numbers Near Linear
Cut-off Wave Number - **Acta Mechanica**, Vol. 37, 1980 , pp 169 -
177.
- 5 (with S.D.Nigam) On a Differential Equation of Bergman and Schiffer
- **Jl. Math. Phy. Sci.**, Vol. 14, No. 3, June 1980, pp 225 - 238.
- 6 Nonlinear Theory of Taylor Instability Near the Linear Cut-off Wave
Number in Three Dimensions - **Jl. Math. Phy. Sci.**, Vol. 15, No. 2,
April 1981, pp 133 - 144.
- 7 (with S.D.Nigam) A Note on the paper of Jaswon and Shidfar - **Jl.
Math. Phy. Sci.**, Vol. 17 , No. 1, Feb. 1983, pp 71 - 72.

- 8 (with R.Usha and S.D.Nigam) Quadratic Free Surface Flows - **Jl. Math. Phy. Sci.**, Vol. 18, No. 6, Dec. 1984, pp 555 - 561.
- 9 (with M.V.S.L.D.N.Raju) Diffusion of Vorticity in Two dimensions -An exact solution of Navier-Stokes' equation - **Jl. Math. Phy. Sci.**, Vol. 22 , No. 2 , April 1988, pp 275 - 281.
- 10 (with R.Usha, K.Hemalatha and R.Nigam) Pressure Drop in Stenosed Narrow Passages - **Fluid Dynamics Research**, Vol. 5, 1989, pp 83 - 89.
- 11 (with S.D.Nigam) A Constructive Proof of the Circle Theorem - **Mechanics Research Communications**, Vol. 16, No. 6, Nov-Dec 1989, pp 329 - 331.
- 12 (with D.Palaniappan and S.D.Nigam) A Theorem for Inviscid Flow Past Two Orthogonally Intersecting Unequal spheres - **Jl. Math. Phy. Sci.**, Vol. 24, No.5, Oct. 1990, pp 289 - 295.
- 13 (with D.Palaniappan, S.D.Nigam and R.Usha) Sphere Theorem for Stokes Flow - **Mechanics Research Communications**, Vol. 17, No. 3, May - June 1990, pp 173 - 174.
- 14 (with D.Palaniappan, S.D.Nigam and R.Usha) A Theorem for a Shear - free Sphere in Stokes Flow - **Mechanics Research Communications**, Vol. 17, No. 6, Nov.- Dec.1990, pp 429 - 435.
- 15 (with R.Usha and B.S.Padmavathi) Shear - Free Stokes Flow - Circle Theorems - **Jl. Math. Phy. Sci.**, Vol. 26, No.1, 1992, pp 9 - 18.
- 16 (with B.S.Padmavathi) Stokes Flow Past A Permeable Sphere - **Jl. Math. Phy. Sci.**, Vol. 26, No. 2, 1992, pp 139 - 146.
- 17 (with S.D.Nigam and Navneet Arora) A Note on Two Dimensional Circle Theorem in Stokes Flow - **Jl. Math. Phy. Sci.** , Vol. 26, No.6, 1992, pp 583 - 589.
- 18 (with D.Palaniappan, S.D.Nigam and R.Usha) Lamb's Solution of Stokes Equations : A Sphere Theorem - **Quart. Jl. Mech. appl. Math.** , Vol. 45, No. 1, 1992, pp 47 - 56.

- 19 (with B.S.Padmavathi) A Solution for the Problem of Stokes Flow Past A Porous Sphere - **Zeitschrift für Angewandte Mathematik und Physik**, Vol. 44, No. 1, 1993, pp 178 - 184.
- 20 (with B.S.Padmavathi and S.D.Nigam) Stokes Flow Past A Sphere with Mixed Slip-stick Boundary Conditions - **Fluid Dynamics Research**, Vol. 11, No. 5, 1993, pp 229 - 234.
- 21 (with B.S.Padmavathi and S.D.Nigam) Stokes Flow Past A Porous Sphere using Brinkman's Model - **Zeitschrift für Angewandte Mathematik und Physik**, Vol. 44, No.2, 1993, pp 929 - 939.
- 22 (with B.S.Padmavathi) Circle Theorems for Stokes Flows with Mixed Slip - stick Boundary Conditions - **Mechanics Research Communications**, Vol. 20, No. 6, Nov.- Dec. 1993, pp 439 - 446.
- 23 (with D.Palaniappan and S.D.Nigam) A Theorem for Fluid Sphere in Stokes Flow - **Jl. Aust. Math. Soc., Ser.B**, Vol. 35, 1994, pp 335 - 347.
- 24 (with B.S.Padmavathi and D.Palaniappan) Stokes Flow Past A Permeable Sphere, Non-Axisymmetric Case - **Zeitschrift für Angewandte Mathematik und Mechanik**, Vol. 74, No. 7, 1994, pp 290 - 292.
- 25 (with B.S.Padmavathi and D.Palaniappan) Stokes Flow about a Porous Spherical Particle - **Archives of Mechanics**, Vol. 46, No.'s(1-2), 1994, pp 201-209.
- 26 (with B.S.Padmavathi and D.Palaniappan) Motion inside a Liquid Sphere - Internal Singularities - **Fluid Dynamics Research**, Vol. 15, 1995, pp 167 - 176.
- 27 (with G.P.Rajasekhar, K.Tejeswara Rao and B.S.Padmavathi) Two Dimensional Stokes flows with Slip-stick Boundary Conditions - **Mechanics Research Communications**, Vol. 22, No. 5, Sept. - Oct. 1995, pp 491 - 501.
- 28 (with D.Palaniappan and S.D.Nigam) Shear-free Boundary in Stokes Flow - **Int. Jl. Math. Math. Sci.**, Vol. 19, No. 1, 1996, pp 145 - 150.

- 29 (with B.S.Padmavathi) Stokes Flow past a Composite Porous Spherical Shell with a Rigid Core - **Archives of Mechanics**, Vol. 48, No. 2, 1996, pp 311-323.
- 30 (with G.P.Rajasekhar) Stokes flow past a Porous Sphere with a Rigid Core - Darcy's Model, **Mech. Res. Comm.**, Vol. 23, No. 5, 1996, pp449-460.
- 31 (with G.P.Rajasekhar and B.S.Padmavathi) Complete General Solution of the Brinkman Equations, **Zeitschrift für Angewandte Mathematik und Mechanik**, Vol. 77, No. 7, 1997, pp555-556.
- 32 (with G.P.Rajasekhar and S.D.Nigam) Dirichlet Problem for Non - axisymmetric Irrotational Flows , **Ind. Jl. of Pure and appl. Math.**, Vol. 28, No. 3, 1997, pp423-427.
- 33 (with B.S.Padmavathi and G.P.Rajasekhar) A Note on Complete General Solutions of Stokes Equations, **Quart. Jl. Mech. appl. Math.**, Vol. 51, Pt. 3, 1998, pp383-388.
- 34 (with S.D.Nigam) On Compatible Systems of First-Order Equations. **Ind. Jl. of Pure and appl. Math.**, Vol. 29, No. 8, 1998, pp835-836.
- 35 (with G.P.Rajasekhar) Stokes Flow inside a Porous Spherical Shell **Zeitschrift für Angewandte Mathematik und Physik** Vol. 51., No. 3, 2000, pp481-490.
- 36 (with B.S.Padmavathi, G.P.Rajasekhar and S.D.Nigam) Group Structure in Circle Theorem, **Studies in Applied Mathematics**, Vol. 106, 2001, pp407-417.
- 37 (with B.S.Padmavathi, G.P.Rajasekhar and S.D.Nigam) Group Structure in Circle and Sphere Theorems, **Zeitschrift fr Angewandte Mathematik und Mechanik**, Vol.81, No.8, 2001, pp570-575.
- 38 (with B.S.Padmavathi) A Note on Decomposition of Solenoidal Fields, **Applied Mathematics Letters**, Vol. 15, 2002, pp803-805.
- 39 (with B.S.Padmavathi and A.Venkatalaxmi) Complete General Solution of Stokes Equations for Plane Boundaries, **Mechanics Research Communications**, Vol.31, 2004, pp465-475.

- 40 (with B.S.Padmavathi and A.Venkatalaxmi) Unsteady Stokes Equations : Some Complete General Solutions, **Proc. Ind. Acad. Sci.** (Math. Sci.), Vol.114, No.2 May 2004, pp1-11.
- 41 (with B.S.Padmavathi and A.Venkatalaxmi) A general solution of unsteady Stokes equations, **Fluid Dynamics Research**, Vol.35, 2004, pp229-236..
- 42 (with B.S.Padmavathi and A.Venkatalaxmi) A General Solution of Oseen Equations **Fluid Dynamics, Research**, Vol. 39, 2007, pp595606.
- 43 General Solutions of the Stokes Equations and their Applications, **PAMM, Proc. Appl. Math. Mech.**, Vol.7, 2007, pp1100701-1100702.
- 44 (with R.Radha and B.Sri Padmavati) New Approximate Analytical Solutions for Creeping Flow Past Axisymmetric Rigid Bodies, **Mech. Res. Comm.**, Vol.37, 2010, pp256-260.
- 45 (with R.Radha and B.Sri Padmavati) A New Approximate Analytical Solution for Arbitrary Stokes Flow Past Rigid Bodies, **Zeitschrift für Angewandte Mathematik und Physik** (published online 5 May 2012), doi:10.1007/s00033-012-0218-8, Vol.63, 2012, pp1103-1117.