

CURRICULUM VITÆ

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Morada Institucional:

Centro de Estudos de Fenómenos de Transporte
Departamento de Engenharia Mecânica
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Graus Académicos:

2004 Agregação em Engenharia Mecânica pela Universidade de Coimbra
1990 Doutoramento pela Universidade de Londres (Imperial College).
1990 DIC (Diploma of Imperial College - Universidade de Londres).
1987 Mestrado em Engenharia Térmica pela FEUP.
1984 Licenciatura em Engenharia Mecânica, opção de Fluidos e Calor, pela FEUP.

Posição Actual:

2008- Professor Associado com agregação no Departamento de Engenharia Mecânica e Gestão Industrial da Faculdade de Engenharia da Universidade do Porto desde 27 de Agosto de 2008

Principais Posições Anteriores:

2003- Investigador estrangeiro do Núcleo de Excelência em Turbulência, Pronex E-26/171.198/2003 da Universidade Federal do Rio de Janeiro, Brasil desde Dezembro de 2003..
2004-08 Professor Associado com agregação do Departamento de Engenharia Mecânica da Escola de Engenharia da Universidade do Minho entre Julho de 2004 e Agosto de 2008
2000-04 Professor Associado Departamento de Engenharia Mecânica e Gestão Industrial da Faculdade de Engenharia da Universidade do Porto de Janeiro de 2000 a Janeiro de 2004.
1996-00 Professor Auxiliar do Departamento de Engenharia Mecânica e Gestão Industrial da Faculdade de Engenharia da Universidade do Porto de Novembro de 1990 a Janeiro de 2000.
1993-4 Coordenador do CETERM (Unidade de Térmica Industrial) do INEGI (Instituto de Engenharia Mecânica e Gestão Industrial) de 10 de Setembro de 1993 a 7 de Novembro de 1994.
1991-2 Coordenador do CETERM (Unidade de Térmica Industrial) do INEGI (Instituto de Engenharia Mecânica e Gestão Industrial), criado no âmbito do programa de reapetrechamento solicitado ao PEDIP, entre 1 de Março de 1991 e 31 de Agosto de 1992.
1988-90 Assistente de Investigação no Departamento de Engenharia Mecânica do Imperial College of Science, Technology and Medicine da Universidade de Londres;

Principal área científica de Investigação: Engenharia Mecânica: Mecânica dos Fluidos e Energia

Outras áreas científicas de Interesse (I&D): Engenharia Química: Fenómenos de Transporte

Organismos Científicos

Membro do "Engineering Peer Review College" do "Engineering and Physical Sciences Research Council" (EPSRC) do Reino Unido desde 1 de Janeiro de 2006;

Revistas Científicas

Membro do Conselho Editorial da Revista Científica "Journal of Non-Newtonian Fluid Mechanics" da Elsevier, desde Janeiro de 2007;
Membro do Conselho Editorial da Revista Científica Electrónica "International Journal of Chemical Engineering", anteriormente "Research Letters in Chemical Engineering", Hindawi, desde Novembro de 2007;
Membro do Conselho Editorial da Revista Científica Electrónica "Open Mechanical Engineering Journal", Bentham Science Publishers Ltd, desde Fevereiro de 2007;
Membro do Conselho Editorial da Revista Científica Electrónica "Open Enzyme Inhibition Journal", Bentham Science Publishers Ltd, desde 2008;

Publicações em Revistas com Revisão e Capítulos de Livros:

- 105) Cruz DO e Pinho FT 2012. Analysis of isothermal flow of a Phan-Thien—Tanner fluid in a simplified model of a single-screw extruder. *J. Non-Newt. Fluid Mech.*, 167-168, 95-105.
- 104) Cavadas AS, Pinho FT e Campos JBLM 2012. Laminar non-Newtonian impinging jet flow confined by sloping plane walls. *J. Non-Newt. Fluid Mech.*, 169-170, 1-14.
- 103) Galindo- Rosales FJ, Campo-Deaño L, Pinho FT, van Bokhorst E, Hamersma PJ, Oliveira MSN e Alves MA 2012. Microfluidic systems for the analysis of viscoelastic phenomena in porous media. *Microfluidics and Nanofluidics*, 12, 485-498.
- 101) Sousa PC, Pinho FT, Oliveira MSN e Alves MA 2012. High performance microfluidic rectifiers for low inertia viscoelastic fluid flow. *RSC Advances*, 2, 920-929.
- 100) Afonso AM, Pinho FT e Alves MA 2012. The kernel-conformation constitutive laws. *J. Non-Newt. Fluid Mech.*, 167-168, pp 30-37.
- 99) Coelho PM, Alves MA e Pinho FT 2012. Forced convection in electro-osmotic/Poiseuille micro-channel flows of viscoelastic fluids: fully-developed flow with imposed wall heat flux. *Microfluidics and Nanofluidics*, 12, 431-449.
- 98) Oliveira MSN, Alves MA e Pinho FT 2012. Microfluidic flows of viscoelastic fluids. Chapter 6 in *Transport and Mixing in Laminar Flows: From Microfluidics to Oceanic Currents*. Roman Grigoriev (Editor), Heinz Georg Schuster (Editor da Série), pp 131-174, ISBN 978-3-527-41011-8, Wiley-VCH Verlag
- 97) Campo- Deaño L, Galindo- Rolales FJ, Pinho FT, Alves MA e Oliveira MSN 2011. Flow of low viscosity Boger fluids through a microfluidic hyperbolic contraction. *J. Non-Newt. Fluid Mech.*, 166, 1286-1296.
- 96) Resende PR, Kim K, Younis BA, Sureshkumar R e Pinho FT 2011. A FENE-P k - e turbulence model for low and intermediate regimes of polymer-induced drag reduction. *J. Non-Newt. Fluid Mech.*, 166, 639-660.
- 95) Afonso AM, Oliveira PJ, Pinho FT e Alves MA 2011. Dynamics of high Deborah number entry flows — A numerical study. *J. Fluid Mech.*, 677, 272-304.
- 94) Sousa PC, Pinho FT, Oliveira MSN e Alves MA 2011. Extensional flow of blood analogue solutions in microfluidic devices. *Biomicrofluidics*, 5, 14108.
- 93) Afonso AM, Alves MA e Pinho FT 2011. Electro-osmotic flow of viscoelastic fluids in microchannels under asymmetric zeta potentials. *J. Engineering Mathematics, Edição especial em Complex Flows*, 71, 15-30.
- 92) Afonso AM, Alves MA, Poole RJ, Oliveira PJ e Pinho FT 2011. Viscoelastic flows in mixing-separating cells. *Journal of Engineering Mathematics, Edição especial em Complex Flows*, 71, 3-13.
- 91) Sousa JJ, Afonso AM, Pinho FT e Alves MA 2011. Effect of the skimming layer on electro-osmotic-Poiseuille flows of viscoelastic fluids. *Microfluidics and Nanofluidics*, 10, 107-122.
- 90) Sousa PC, Pinho IS, Pinho FT, Oliveira MSN e Alves MA 2011. Flow of a blood analogue solution through microfabricated hyperbolic contractions. In *Computational Vision and Medical Image Processing: Recent Trends*, Computational Methods in Applied Sciences, Volume 19, pp 265-279, DOI 10.1007/978-94-007-0011-6_15, Springer.
- 89) Afonso AM, Alves MA e Pinho FT 2010. Purely elastic instabilities in three-dimensional cross slot geometries. *J. Non-Newt. Fluid Mech.*, 165, 743- 751.
- 88) Sousa PC, Pinho FT, Oliveira MSN e Alves MA 2010. Efficient microfluidic rectifiers for viscoelastic fluid flow. *J. Non-Newt. Fluid Mechanics*, 165, 652-671.
- 87) Dhinakaran S, Afonso AM, Alves MA e Pinho FT 2010. Steady viscoelastic fluid flow between parallel plates under electro-osmotic forces: Phan-Thien—Tanner model. *J. Colloid Interface Science*, 344, 513-520.
- 86) Tomé MF, Paulo GS, Pinho FT e Alves MA 2010. Numerical solution of the PTT constitutive equation for unsteady three-dimensional free surface flows. *J. Non-Newt. Fluid Mech.*, 165, 247-262
- 85) Pinho FT e Coelho PM 2008. Non-Newtonian Heat Transfer. Capítulo 17 em *Reologia* [Ed. Crispulo Gallegos], in Volume 2, Encyclopedia of Life Support System (EOLSS), Desenvolvido sob os auspícios da UNESCO, Eolss, Oxford, UK [http://www.eolss.net], ISBN: 978-1-84826-770-1.
- 84) Poole RJ, Pinho FT, Alves MA e Oliveira PJ 2009. The effect of expansion ratio for creeping expansion flows of UCM fluids. *J. Non-Newt. Fluid Mech.*, 163, 35-44.
- 83) Oliveira MSN, Pinho FT, Poole RJ, Oliveira PJ e Alves MA 2009. Purely elastic flow asymmetries in flow-focusing devices. *J. Non-Newt. Fluid Mech.*, 160, 31-39.
- 82) Afonso A, Alves MA e Pinho FT 2009. Analytical solution of mixed electro-osmotic/ pressure driven flows of viscoelastic fluids in microchannels. *J. Non-Newt. Fluid Mech.*, 159, 50-63.

- 81) Loureiro JBR, Monteiro AS, Pinho FT e Silva Freire AP 2009. The effect of roughness on separating flows over two-dimensional hills. *Exp in Fluids*, 46, 577-596.
- 80) - Afonso A, Oliveira PJ, Pinho FT e Alves MA. 2009. The log-conformation tensor approach in the finite-volume method framework. *J. Non-Newt. Fluid Mech.*, 157, 55-65.
- 79) - Cruz DOA e Pinho FT. 2009. Stoke's second problem with wall suction or blowing for UCM fluids. *J. Non-Newt. Fluid Mech.*, 157, 66-78.
- 78) Coelho PM e Pinho FT 2009. A generalized definition of Brinkman number for duct flow. *J. Non-Newt. Fluid Mech.*, 156, 202-206.
- 77) Alves MA, Pinho FT e Oliveira PJ 2008. Viscoelastic flow in a 3D square/square contraction: visualizations and simulations. *Journal of Rheology*, 52, 1347-1368.
- 76) Loureiro JBR, Monteiro AS, Pinho FT e Silva Freire AP 2008. Water tank studies of separating flow over rough hills. *Boundary Layer Meteorology*, 129, 289- 308.
- 75) Pinho FT, Li CF, Younis BA e Sureshkumar R 2008. A low Reynolds number turbulence closure for viscoelastic fluids. *J. Non-Newt. Fluid Mech.*, 154, 89-108.
- 74) Pinho FT, Sadanandan B e Sureshkumar R 2008. One equation model for turbulent channel flow with second order viscoelastic corrections. *Flow, Turbulence and Combustion*, 81, 337-367.
- 73) Tomé MF, Araujo MSB, Alves MA e Pinho FT 2008. Numerical simulation of viscoelastic flows using integral constitutive equations: a finite difference approach. *J. Computational Physics*, 227, 4207-4243.
- 72) Afonso A, Alves MA, Pinho FT e Oliveira PJ 2008. Uniform flow of viscoelastic fluids past a falling cylinder. *Rheologica Acta*, 47, 325-348.
- 71) Miranda AIP, Oliveira PJ e Pinho FT 2008. Steady and unsteady laminar flows of Newtonian and generalized Newtonian fluids in a planar T- junction. *Int. Journal Numerical Methods in Fluids*, 57, 295-328.
- 70) Poole RJ, Escudier MP, Afonso A e Pinho FT 2007. Laminar flow of a viscoelastic shear-thinning liquid over a backward-facing step preceded by a gradual contraction. *Physics of Fluids*, 19, 93101.
- 69) Oliveira MSN, Oliveira PJ, Pinho FT e Alves MA 2007. Effect of contraction ratio upon viscoelastic flow in contractions: the axisymmetric case. *J. Non-Newt. Fluid Mech.*, 147, 92-108.
- 68) Oliveira MSN, Alves MA, Pinho FT e McKinley GH 2007. Newtonian fluid flow through microfabricated hyperbolic contractions. *Experiments in Fluids*, 43 (2-3), 437-451.
- 67) Loureiro JBR, Pinho FT e Silva Freire AP 2007. Near-wall characterization of the flow over a two-dimensional steep smooth hill. *Experiments in Fluids*, 42 (3), 441-457.
- 66) Poole RJ, Alves MA, Oliveira PJ e Pinho FT 2007. Plane sudden expansion flows of viscoelastic liquids. *J. Non-Newt. Fluid Mech.*, 146, 79-91.
- 65) Cruz DOA e Pinho FT 2007. Fully-developed pipe and planar flows of multimode viscoelastic fluids. *J. Non-Newt. Fluid Mech.*, 141, 85-98.
- 64) Loureiro JBR, Soares DV, Fontoura Rodrigues JLA, Pinho FT e Silva Freire AP 2006. Logarithmic velocity profiles for flows over steep hills. *Boundary Layer Meteorology*, 122(2), 343-365.
- 63) Loureiro JBR e Pinho FT 2006. Fundamentos da anemometria laser-Doppler. Capítulo 5 de "Turbulência", Volume V-I, Editores A. P. Silva Freire, A. Ilha e M. J. Colaço, ABCM, 5ª Escola de Transição e Turbulência, ISBN 978-85-85769-24-6, pp 253-339.
- 62) Cruz DOA e Pinho FT 2006. Turbulência em Fluidos não-Newtonianos. Capítulo 6 de "Turbulência", Volume V-I, Editores A. P. Silva Freire, A. Ilha e M. J. Colaço, ABCM, 5ª Escola de Transição e Turbulência, ISBN 978-85-85769-24-6, pp 253-339.
- 61) Afonso AM e Pinho FT 2006. Numerical investigation of the velocity overshoots in the flow of viscoelastic fluids inside a smooth contraction. *J. Non-Newt. Fluid Mech.* 139, 1-20.
- 60) Costa NP, Maia R, Pinho FT e Proença MF 2006. Edge effects on the flow characteristics in a 90° tee junction. *ASME J. Fluids Engineering*, 128 (6), 1204-1217
- 59) Pinho FT e Coelho PM 2006. Fully-developed heat transfer in annuli for viscoelastic fluids with viscous dissipation. *J. Non-Newt. Fluid Mech.*, 138, 7-21.
- 58) Coelho PM e Pinho FT 2006. Fully-developed heat transfer in annuli with viscous dissipation. *Int. J. Heat and Mass Transfer*, 49, 3349-3359.
- 57) Rosa S e Pinho FT 2006. Pressure drop coefficient of laminar Newtonian flow in axisymmetric diffusers. *Int. J. Heat and Fluid Flow*, 27, 319-328.
- 56) Resende PR, Escudier MP, Presti F, Pinho FT e Cruz DOA 2006. Numerical predictions and measurements of Reynolds normal stresses in turbulent pipe flow of polymers. *Int. J. Heat and Fluid Flow*, 27, 204-219.
- 55) Cruz DOA, Pinho FT e Oliveira PJ 2005. Analytical solution for fully developed flow of some viscoelastic liquids with a Newtonian solvent contribution. *J. Non-Newt. Fluid Mech.* 132, 28-35.

- 54) Alves MA, Pinho FT e Oliveira PJ 2005. Visualizations of Boger fluid flows in a 4:1 square/square contraction. *AICHEJ*, 51(11), 2908-2922.
- 53) Nóbrega JM, Carneiro OS, Covas JA, Pinho FT e Oliveira PJ 2004. Design of calibrators for extruded profiles. Part I: Modeling the thermal interchanges. *Polymer Eng. and Sci.*, 44 (12), 2216-2228.
- 52) Cruz DOA, Pinho FT e Resende PR 2004. Modelling the new stress for improved drag reduction predictions of viscoelastic pipe flow. *J. Non-Newt. Fluid Mech.*, 121, 127-141.
- 51) Oliveira PJ, Coelho PM e Pinho FT 2004. The Graetz problem with viscous dissipation for FENE-P fluids. *J. Non-Newt. Fluid Mech.*, 121, 69-72.
- 50) Nóbrega JM, Carneiro OS, Pinho FT e Oliveira PJ 2004. Flow balancing in extrusion dies for thermoplastic profiles. Part III: Experimental assessment. *International Polymer Processing*, 19 (3), 225-235.
- 49) Coelho PM e Pinho FT 2004. Vortex-shedding in cylinder flow of shear-thinning fluids. III- Pressure measurements. *J. Non-Newt. Fluid Mech.*, 121, 55-68.
- 48) Cruz DOA e Pinho FT 2004. Skewed Poiseuille- Couette flows of SPTT fluids in concentric annuli and channels. *J. Non-Newt. Fluid Mech.*, 121, 1-14
- 47) Alves MA, Oliveira PJ e Pinho FT 2004. On the effect of contraction ratio in viscoelastic flow through abrupt contractions. *J. Non-Newt. Fluid Mech.*, 122, 117-130.
- 46) Nóbrega JM, Pinho FT, Oliveira PJ e Carneiro OS 2004. Accounting for temperature-dependent properties in viscoelastic duct flows. *Int. J. Heat and Mass Transfer*, 47, 1141-1158.
- 45) Cavadas AS e Pinho FT 2004. Some characteristics of stirred vessel flows of dilute polymer solutions powered by a hyperboloid impeller. *Can. J. Chem. Eng.*, 82, 289-302.
- 44) Cruz DOA e Pinho FT 2003. Turbulent flow predictions with a low- Reynolds number $k-\epsilon$ model for drag reducing fluids. *J. Non-Newt. Fluid Mech.*, 114, 109-148.
- 43) Pinho FT 2003. A GNF framework for turbulent flow models of drag reducing fluids and proposal for a $k-\epsilon$ type closure. *J. Non-Newt. Fluid Mech.*, 114, 149-184.
- 42) Pinho FT, Oliveira PJ e Miranda JP. 2003. Pressure losses in the laminar flow of shear-thinning power-law fluids across a sudden pipe expansion. *Int. J. Heat Fluid Flow*, 24, 747-761.
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- 40) Carneiro OS, Nóbrega JM, Oliveira PJ e Pinho FT 2003. Flow Balancing in Extrusion Dies for Thermoplastic Profiles. Part II: Influence of the Design Strategy. *International Polymer Processing*, 18 (3), 307-312.
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- 38) Coelho PM e Pinho FT 2003. Vortex-shedding in cylinder flow of shear-thinning fluids. II- Flow characteristics. *Journal of Non-Newtonian Fluid Mechanics*, 110, 177-193.
- 37) Coelho PM e Pinho FT 2003. Vortex-shedding in cylinder flow of shear-thinning fluids. I- Identification and demarcation of flow regimes. *J. Non-Newt. Fluid Mech.*, 110, 143-176.
- 36) Alves MA, Oliveira PJ e Pinho FT 2003. Benchmark solutions for the flow of Oldroyd-B and PTT fluids in planar contractions. *Journal of Non-Newt. Fluid Mech.*, 110, 45-75.
- 35) Alves MA, Oliveira PJ e Pinho FT 2003. A convergent and universally bounded interpolation scheme for the treatment of advection. *Int. J. Num. Methods in Fluids*, 41, 47-75.
- 34) Alves MA., Cruz P, Mendes A, Magalhães FD, Pinho FT e Oliveira PJ 2002. Adaptive multiresolution approach for solution of hyperbolic PDE's. *Computer Methods in Applied Mechanics and Engineering*, 191, 3909-3928.
- 33) Escudier MP, Oliveira PJ, Pinho FT e Smith S 2002. Fully-developed laminar flow of non-Newtonian liquids through annuli: comparison of numerical calculations with experiments. *Exp. in Fluids*, 33, 101-111.
- 32) Pereira AS e Pinho FT 2002. The effect of the expansion ratio on a turbulent non-Newtonian recirculating flow. *Exp. in Fluids*, 32, 458-471.
- 31) Escudier MP, Oliveira PJ e Pinho FT 2002. Fully developed laminar flow of purely viscous non-Newtonian liquids through annuli, including the effects of eccentricity and inner-cylinder rotation. *Int. J. Heat and Fluid Flow*, 23, 52-73.
- 30) Pereira AS e Pinho FT 2002. Turbulent pipe flow of thixotropic fluids. *Int. J. Heat and Fluid Flow*, 23, 36-51.
- 29) Coelho PM, Pinho FT e Oliveira PJ 2002. Fully-developed forced convection of the Phan-Thien—Tanner fluid in ducts with a constant wall temperature. *Int. J. Heat and Mass Transfer*, 45(7), 1413-1423.

- 28) Pinho FT 2001. The Finite-Volume Method Applied to Computational Rheology: II-Fundamentals For Stress-Explicit Fluids. *e-rheo.pt*, 1, 63-100.
- 27) Alves MA, Pinho FT e Oliveira FT 2001. Study of steady pipe and channel flows of a single-mode Phan-Thien—Tanner fluid. *J. Non-Newt. Fluid Mech.*, 101, 55-76.
- 26) Pinho FT e Oliveira PJ 2001. The methodology of finite volumes applied to computacional rheology: I- Introduction. (in Portuguese) *e-rheo.pt*, 1, 1-15.
- 25) Pereira, AS e Pinho FT 2001. Recirculating turbulent flows of thixotropic fluids. *J. Non-Newt. Fluid Mech.*, 99, 183-201.
- 24) Carneiro OS, Nóbrega JM, Pinho FT e Oliveira PJ 2001. Computer aided rheological design of extrusion dies for profiles. *Journal of Materials Processing and Technology*, 114(1), 75-86.
- 23) Alves MA, Pinho FT e Oliveira PJ 2001. The flow of viscoelastic fluids past a cylinder: finite-volume high-resolution methods. *J. Non-Newt. Fluid Mech.*, 97, 207-230.
- 22) Escudier MP, Gouldson I, Pereira AS, Pinho FT e Poole RJ 2001. On the reproducibility of the rheology of shear-thinning liquids. *J. Non-Newt. Fluid Mech.*, 97, 99-124.
- 21) Pinho FT e Oliveira PJ 2000. Axial annular flow of a nonlinear viscoelastic fluid- an analytical solution. *J. Non-Newt. Fluid Mech.*, 93, 325-337.
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- 19) Oliveira PJ e Pinho FT 2000. Analysis of forced convection in pipes and channels with the simplified Phan-Thien — Tanner fluid. *Int. J. Heat and Mass Transfer*, 43(13), 2273-2287.
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- 15) Pereira AS e Pinho FT 1999. Rheology of thixotropic clay-based suspensions (Laponite). (in Portuguese) *Mecânica Experimental*, 4, 51-63.
- 14) Oliveira PJ e Pinho FT 1999 Plane contraction flows of upper convected Maxwell and Phan- Thien-Tanner fluids as predicted by a finite-volume method. *J. Non-Newt. Fluid Mech.*, 88, 63-88.
- 13) Oliveira PJ e Pinho FT 1999. Numerical procedure for the computation of fluid flows with arbitrary stress-strain relationships. *Numerical Heat Transfer*.Part B, 35, 295-315.
- 12) Oliveira PJ e Pinho FT 1999. Analytical solution for the fully developed channel flow of a Phan-Thien and Tanner fluid. *J. Fluid Mech.*, 387, 271-280.
- 11) Oliveira PJ, Pinho FT e Schulte A 1998. A General Correlation for The Local Loss Coefficient in Newtonian Axisymmetric Sudden Expansions. *Int. J. Heat and Fluid Flow*, 19, 655-660.
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- 9) Coelho PM e Pinho FT 1998. Rheological behaviour of some dilute aqueous polymer solutions (in Portuguese). *Mecânica Experimental* , 3, 51-60.
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- 6) Oliveira PJ e Pinho FT 1997. Pressure Drop Coefficient of Laminar Newtonian Flow in Axisymmetric Sudden Expansions. *Int. J. Heat and Fluid Flow* , 18, 518-529.
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- 1) Pinho FT e Whitelaw JH 1990. Flow of Non-Newtonian Fluids in a Pipe. *J. Non-Newt. Fluid Mech.*, 34, 129-144.