

# Curriculum vitae di Pietro Poesio

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## Dati personali

Nome: Pietro Poesio

Data e luogo di nascita: 7 Aprile 1975, Desenzano d./G. (BS), Italia

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## Posizioni accademiche

**Novembre 2016 - presente:** Professore Ordinario di Fisica Tecnica Industriale (Ing-IND/10), Università degli Studi di Brescia (Italia).

**Dicembre 2010 - Ottobre 2016:** Professore Associato di Fisica Tecnica Industriale (Ing-IND/10), Università degli Studi di Brescia (Italia).

**Gennaio 2004 - Novembre 2010:** Ricercatore di Fisica Tecnica Industriale (Ing-IND/10), Università degli Studi di Brescia (Italia).

## Incarichi di ricerca presso altri Atenei

**Agosto 2015 - Novembre 2015:** Visiting Associate Professor, Petroleum Engineering Department, University of Tulsa.

**Dicembre 2012 - Gennaio 2013:** CariploMITUniBS Visiting Associate Professor, Mechanical Engineering Department, Massachusetts Institute of Technology.

**Ottobre - Dicembre 2011:** CariploMITUniBS Visiting Associate Professor, Mechanical Engineering Department, Massachusetts Institute of Technology.

**Luglio - Ottobre 2009:** CariploMITUniBS Visiting Assistant Professor, Mechanical Engineering Department, Massachusetts Institute of Technology.

**Luglio - Agosto 2008:** Visiting Scholar, Mechanical Engineering Department, Massachusetts Institute of Technology.

## Studi

**2004 :** Dottorato di ricerca (Ph.-D.) *cum laude* in Dinamica dei Fluidi presso la Delft University of Technology. Tesi: "Ultrasonic flow stimulation and particles removal in a porous material" sotto la supervisione dei prof. dr. ir. G. Ooms e prof. dr. ir. M.E.H. van Dongen.

**2000** : Laurea (M.-Sc.) *cum laude* in Ingegneria Meccanica (curriculum Energia) presso Università degli Studi di Brescia. Tesi: "Studio della frammentazione dendritica indotta da moti convettivi naturali e simulazione del riempimento di una lingottiera con acciaio liquido" sotto la supervisione del prof. dr. G.P. Beretta.

## Finanziamenti per la Ricerca

- Responsabile del progetto "Analysis of two-phase flow for industrial applications". Progetto sponsorizzato da MIUR, 2004-2006.
- Responsabile del progetto "Investigation of core annular flow for heavy-oil transportation". Progetto sponsorizzato da E.N.I., 2007-2008.
- Responsabile del progetto "Core annular flow: an energy efficient way to transport heavy oil". Progetto sponsorizzato da MIUR, 2009-2010.
- Responsabile del progetto bilaterale Italy-India "Investigation on core annular flow – an energy efficient mode of transporting highly viscous oil", Indian partner prof. P.K. Das (Indian Institute of Technology, Kharagpur) 2008-2010.
- Co-Principal Investigator (with prof. Beretta) of the research project "Heat transfer enhancement in small-scale devices: a collaborative experimental/numerical approach", Progetto sponsorizzato da U.S. Air Force, 2010-2012.
- Responsabile del progetto "Heat transfer enhancement in small-scale devices using a diffuse interface approach", Progetto sponsorizzato da ISCRA (Italian SuperComputing Resource Allocation), 2011.
- Responsabile del progetto "Macro-scale approach to study heat enhancement in micro-devices", Progetto sponsorizzato da ISCRA (Italian SuperComputing Resource Allocation), 2011.
- Responsabile del progetto "Enhancing heat transfer rates by spinodal decomposition – application to cooling of concentrated photovoltaic power systems ", Progetto sponsorizzato da MAE under the Italian-Israeli bilateral agreement, 2012.
- Responsabile del progetto "Advanced one-dimensional two-fluid models and experiments for complex industrial scenarios". Progetto sponsorizzato da E.N.I., 2012-2014.
- Responsabile del progetto "Study and analysis for micro-bubbles generations". Progetto sponsorizzato da BioKavitus s.r.l., 2012-2014.
- Responsabile del progetto "Experimental characterization of a cooling machine". Progetto sponsorizzato da Celli S.p.A., 2012.
- Responsabile del progetto (Responsabile di Unità) "Trasporto di calore e di massa in nano-strutture mediante dinamica molecolare, riduzione sistematica dei modelli e termodinamica di non-equilibrio: Una collaborazione internazionale per lo sviluppo di autentiche ricette multi-scala ingegneristiche in grado di colmare il divario tra le scale e per la loro validazione nei leganti carboniosi usati nello stoccaggio termico e nei nano-filtri a base carbonio". PRIN2012. Progetto sponsorizzato da MIUR, 2013-2015.
- Responsabile del progetto "Investigation of very viscous oil in pipelines". Progetto sponsorizzato da TEA-Sistemi, 2014-2016.

- Responsabile (locale) del progetto "MIRACLE: Microsystems meRging ACoustics and fLuidics to build human engineered tissuE". Progetto sponsorizzato nell'ambito del progetto strategico Health & Wealth Università degli Studi di Brescia, 2016-2018.
- Responsabile del progetto "CHC: Closed Head Casting". Progetto sponsorizzato dalla regione Lombardia nell'ambito del Cluster regionale: Smart Design and Fashion, 2017-2019.
- Responsabile del progetto "Ottimizzazione energetica di essiccatori industriali". Progetto sponsorizzato da Scolari s.r.l., 2017-2020.

## Altre informazioni relative al percorso scientifico e professionale

- **Organizzazione di Congressi e scuole estive**
  - Membro del Comitato Organizzatore della 28<sup>th</sup> UIT National Congress on Heat Transfer 2010.
  - Membro del Comitato Organizzatore della 12<sup>th</sup> Joint European Thermodynamics Conference, 2013.
  - Membro del Comitato Scientifico della 13<sup>th</sup> Multiphase Flow in Industrial Plant Conference, 2014.
  - Membro del Comitato Organizzatore della 8<sup>th</sup> International Conference on Multiphase flows, 2016.
  - Presidente del Comitato Organizzatore della 14<sup>th</sup> International Conference on Multiphase Flows in Industrial Plants, 2017.
  - Membro del Comitato Organizzatore della 1<sup>st</sup> International Summer School on CFD for energy applications, 2018
- **Commissario esterno per la discussione di tesi di dottorato**
  - Scuola di Dottorato in Ingegneria "Leonardo da Vinci", corso di Dottorato in Ingegneria Chimica e dei Materiali, Università di Pisa, 2005.
  - Scuola di Dottorato in Ingegneria "Leonardo da Vinci", corso di Dottorato in Ingegneria Chimica e dei Materiali, Università di Pisa, 2012.
  - Scuola di dottorato di Ricerca in Ingegneria Industriale, indirizzo Fisica Tecnica; Università di Padova, 2012.
  - Corso di Dottorato di Ricerca in "Tecnologie chimiche ed energetiche", Università di Udine, 2014.
  - Corso di Dottorato in "Energy and Nuclear Science and Technology", Politecnico di Milano, 2015.
  - Corso di Dottorato in "Energy and Nuclear Science and Technology", Politecnico di Milano, 2017.
  - Doctoral School of Politecnico di Torino, candidata: Annalisa Cardellini, 2017.
  - Norwegian University of Science and Technology, NTNU, candidato: Ivar Smith, 2017.
- **Attività di coordinamento del Dottorato di Ricerca in Ingegneria Meccanica e Industriale - DRIMI**
  - Coordinatore vicario del Dottorato di Ricerca in Ingegneria Meccanica e Industriale dal XXIX ciclo
  - Referente per la sezione *Energy, Fluid & Thermal, and Manufacturing Systems and Technologies* del DRIMI dal XXIX ciclo.
- **Referee per progetti Competitivi:**

- PRIN09 national project awarded by MIUR, 2011.
- Da novembre 2011, Referee for ISCRA (Italian SuperComputing Resource Allocation).
- **Membro del Comitato Direttivo dell' ANIMP-Multifase** (Associazione Nazionale Impianti - Sezione multifase), 2015-presente.
- **Vincitore dell' "International Exchange Scheme 2014"**, Royal Society (UK) su *Molecular dynamics simulation of slip velocity at liquid-liquid interfaces*.
- **Referee per numerose Riviste Internazionali:** Journal of Acoustical Society of America; Flow, Turbulence and Combustion; Geophysical Prospecting; Journal of Statistical Physics; Journal of Petroleum Science and Engineering; Geophysical Research Letters; Transport in Porous Media; Geophysics; SPE-Journal; Journal of Enhanced Heat Transfer; Experimental Thermal and Fluid Science; International Journal Multiphase Flow; Acta Meccanica; Physics of Fluids; Chemical Engineering Science; Chemical Engineering Research and Design.
- Membro aggregato della Commissione per "Esame di Stato per l'abilitazione alla professione di ingegnere" Ordine degli ingegneri di Brescia 2011-2012.
- Membro aggregato della Commissione per "Esame di Stato per l'abilitazione alla professione di ingegnere" Ordine degli ingegneri di Brescia 2012-2013.
- **Premio come migliore poster "Piezoelectric energy harvesting from von Karman vortices"** by M. Demori, V. Ferrari, S. Farisé, and P. Poesio, XVII AISEM annual conference, Brescia (Italy), 5-7 February 2013.

## Attività di supervisione e guida scientifica

### 1. Supervisione ad assegnisti di ricerca

- Andrea Aquino. Argomento di ricerca: Fluidi non Newtoniani per applicazioni industriali.
- Gianluca Losi. Argomento di ricerca: Metodi numerici per simulazioni fluidodinamiche.
- Khaled Issa. Argomento di ricerca: Metodi ibridi atomistico continui per la descrizione di flussi multifase.
- Strazza Domenico. Argomento di ricerca: Tecniche di misura in sistemi liquido-liquido.
- Dafne Molin: Argomento di ricerca: Decomposizione spinodale di miscele binarie.
- Silvia Farsetti. Argomento di ricerca: Sistemi gas-liquido ad elevata viscosità.
- Benedetta Grassi. Argomento di ricerca: Sistemi bifase liquido-liquido.
- Claudia Foletti. Argomento di ricerca: Sistemi gas-liquido ad elevata viscosità.

### 2. Supervisione tesi di Dottorato

- Grassi Benedetta: "Validazione sperimentale di modelli a due fluidi per flussi acqua/olio-molto-viscoso in condotti orizzontali". XXI Ciclo di Dottorato in Tecnologie e Sistemi Energetici per l'Industria Meccanica, Università di Brescia.
- Strazza Domenico: "Analisi del flusso anulare liquido-liquido per trasporto di greggio pesante". XXII Ciclo di Dottorato in Tecnologie e Sistemi Energetici per l'Industria Meccanica, Università di Brescia. Vincitore del premio Gustavo Sclocchi (Society of Petroleum Engineers - Italia) per la miglior tesi di Dottorato in ambito petrolifero dell'anno 2010.

- Margarone Michele: "Simulazioni mono-dimensionali di flussi bifase nel caso di fluidi complessi". XXIII Ciclo di Dottorato in Tecnologie e Sistemi Energetici per l'Industria Meccanica, Università di Brescia.
- Di Fede Fabio: "Utilizzo di miscele binarie per l'incremento dello scambio termico in scambiatori di calore compatti". XXIII Ciclo di Dottorato in Tecnologie e Sistemi Energetici per l'Industria Meccanica, Università di Brescia.
- Farisé Stefano: Microscale Heat Transfer enhancement using spinodal decomposition. XXVI Ciclo di Dottorato in Tecnologie e Sistemi Energetici per l'Industria Meccanica, Università di Brescia.
- Davide Picchi: "Theoretical and experimental investigation of two-phase gas/non-newtonian fluid flows in pipes". XXVIII Ciclo di Dottorato in Tecnologie e Sistemi Energetici per l'Industria Meccanica, Università di Brescia.
- Andriy Gordiychuk: "Optimisation of performance of air micro bubble generators based on experimental investigation into parameters affecting their operation". XXVIII Ciclo di Dottorato in Tecnologie e Sistemi Energetici per l'Industria Meccanica, Università di Brescia.
- Marco Ferrari: "One-dimensional code for slug capturing in pipes". XXIX Ciclo di Dottorato in Ingegneria Meccanica e Industriale, Università di Brescia.
- Davide Arnone: "Experimental study of two-phase flow air-oil in water emulsion in horizontal pipes". XXIX Ciclo di Dottorato in Ingegneria Meccanica e Industriale, Università di Brescia.
- Gianluca Losi: "Modelling and experiments on the influence of viscosity on horizontal slug flow". XXIX Ciclo di Dottorato in Ingegneria Meccanica e Industriale, Università di Brescia.
- Angelo Damone: In corso di svolgimento. XXX Ciclo di Dottorato in Ingegneria Meccanica e Industriale, Università di Brescia.
- Arianna Bonzanini: In corso di svolgimento. XXXI Ciclo di Dottorato in Ingegneria Meccanica e Industriale, Università di Brescia.

**3. Relatore di 33 tesi di laurea specialisti/magistrale.** Tra questi si segnala:

- Bonzanini Arianna ha presentato la sua tesi di laurea al congresso internazionale "Numerical approximations of hyperbolic systems with source terms and applications 2015" ed ha ricevuto il premio volto alla copertura totale delle spese di partecipazione al Congresso. Inoltre, ha ricevuto la menzione d'onore per il premio Gustavo Sclocchi (Society of Petroleum Engineers - Italia) nell'anno 2015.
- Marco Ferrari ha ricevuto la menzione d'onore per il premio Gustavo Sclocchi (Society of Petroleum Engineers - Italia) nell'anno 2013.
- Bonetti Michele risultato vincitore del premio Gustavo Sclocchi (Society of Petroleum Engineers - Italia) per la miglior tesi di Laurea in ambito petrolifero dell'anno 2011.
- Zanetti Francesco risultato vincitore del premio Gustavo Sclocchi (Society of Petroleum Engineers - Italia) per la miglior tesi di Laurea in ambito petrolifero dell'anno 2007.
- Cominardi Giuseppe risultato vincitore (a pari merito) del premio della Unione Italiana Termofluidodinamica (UIT) per la miglior tesi di Laurea in ambito termofluidodinamico dell'anno 2005.

**4. Relatore di 35 tesi di laurea triennale.**

## Capitoli in libri

1. **P. Poesio** and M. Cinquini. *Metodi e Modelli per Simulazione Numerica Diretta (DNS) di Flussi Bifase*, in FONDAMENTI DI TERMOFLUIDODINAMICA COMPUTAZIONALE, Eds. Comini G., Croce, G. and Nobile E., SGE Pub., 2014.

## Brevetti

1. A. Ullman, N. Brauner, **P. Poesio**, G.P. Beretta, and S. Farisé. *Applying phase separation of a solvent system with a Lower Critical Solution with a lower critical temperature solution for enhancement of cooling rates by forced and free convection*, US PATENT No. 61/992,257 filed: 13/05/2014.

## Pubblicazioni su Riviste Internazionali

1. **P. Poesio**, G. Ooms, S. Barake, and F. v. Bas. "An investigation of the influence of acoustic waves on the flow through a porous material". *J. Acoust. Soc. Am.* 111(5):2019-2025, 2002.
2. **P. Poesio**, G. Ooms, A. Schraven, and F. v. Bas. "Theoretical and experimental investigation of acoustic streaming in a porous material". *Physical Review E* 66:016309, 2002.
3. G. Ooms, and **P. Poesio**. "Stationary core-annular flow through a horizontal pipe". *Physical Review E* 68:066301, 2003.
4. **P. Poesio**, G. Ooms, M.E.H van Dongen, and D.M.J. Smeulders. "Removal of small particles from a porous material by ultrasonic irradiation". *Transport in Porous Media* 54(3):239-264, 2004.
5. **P. Poesio**, and G. Ooms. "Permeability reduction of porous material due to formation of particle bridges". *J. Petroleum Sci. and Eng.* 45(4):159-178, 2004.
6. G. Ooms, and **P. Poesio**. "Effect of particle inertia and gravity on the turbulence in a suspension". *Physics of Fluids* 17(12):1-12, 2005.
7. **P. Poesio**, G. Ooms, J.C.R. Hunt, and A. ten Cate. "Interaction and collisions between particles in a linear shear flow near a wall at low Reynolds number". *J. Fluid Mech.* 555:113-130, 2006.
8. **P. Poesio**, G. Cominardi, A.M. Lezzi, R. Mauri, and G.P. Beretta. "Effects of quenching rate and viscosity on spinodal decomposition". *Physical Review E* 74(1):011507, 2006.
9. **P. Poesio**, and G. Ooms. "Removal of particle bridges from a porous material by ultrasonic irradiation". *Transport in Porous Media* 66(3): 235-257, 2007.
10. **P. Poesio**, A.M. Lezzi, and G.P. Beretta. "Convective heat transfer enhancement induced by spinodal decomposition". *Physical Review E* 75(6):066306, 2007.
11. G. Ooms, C. Vuik, and **P. Poesio**. "Core-annular flow through horizontal pipe: hydrodynamic counterbalancing of buoyancy force on core". *Physics of Fluids*, 19(9), 2007.
12. G. Ooms, C. Poelma, **P. Poesio**, M.J.B.M Pourquié, and J. Westerweel. "Experimental verification of a theoretical model for the influence of particle inertia and gravity on decaying turbulence in a particle-laden flow". *Int. J. Multiphase Flow*, 34(1):29-41, 2008.
13. **P. Poesio**. Walsh spectral analysis of signals arising from intermittent two-phase flow. *Int. J. Multiphase Flow*, 34(5):516-522, 2008.

14. **P. Poesio** and G.P. Beretta. "Minimal dissipation rate to correlate phase inversion data". *Int. J. Multiphase Flow*, 34(7):684-689, 2008.
15. B. Grassi, D. Strazza, and **P. Poesio**, "Experimental validation of theoretical models in two-phase high-viscosity ratio liquid-liquid flows in horizontal and slightly inclined pipes". *Int. J. Multiphase Flow*, 34(10):950-965, 2008.
16. **P. Poesio**. "Experimental determination of pressure drop and statistical properties of oil-water intermittent flow through horizontal pipe". *Experimental Thermal and Fluid Sciences*, 32(8):1523-1529, 2008.
17. **P. Poesio** and G. Ooms. "Fouling by external particles and ultrasonic cleaning of a porous material". *SPE-Journal*, 14(1):14-29, 2009.
18. **P. Poesio**, D. Strazza, and G. Sotgia. "Very-viscous-oil/water/air flow through horizontal pipes: pressure drop measurement and prediction". *Chem. Eng. Sci.*, 64(6):1136-1142, 2009.
19. **P. Poesio**, G. Sotgia, and D. Strazza. "Experimental investigation of three-phase mixtures of oil-water-air through a pipeline". *Multiphase Science & Technology*, 21(1-2):107-122, 2009.
20. **P. Poesio**, G.P. Beretta, and T. Thorsen. "Dissolution of a liquid micro-droplet in a non-ideal liquid-liquid mixture far from thermodynamic equilibrium". *Phys. Rev. Lett.*, 103(6):064501, 2009.
21. M. Demori, D. Strazza, V. Ferrari, and **P. Poesio**. "A Capacitive Sensor System for the Analysis of Two-Phase Flows of Oil and Conductive Water". *Sensors and Actuators A*, 163:172-179, 2010.
22. D. Strazza, B. Grassi, M. Demori, V. Ferrari, and **P. Poesio**. "Core-annular flow in horizontal and slightly inclined pipes: existence, pressure drops, and hold-up". *Chem. Eng. Sci.*, 66(12):2853-2863, 2011.
23. D. Strazza, M. Demori, V. Ferrari, and **P. Poesio**. "Capacitance sensor for hold-up measurement in high-viscous-oil/conductive-water core annular flows". *Flow Meas. Inst.*, 22(5):360-369, 2011.
24. M. Demori, V. Ferrari, and **P. Poesio**, D. Strazza. "A microfluidic capacitance sensor for fluid discrimination and characterization". *Sensors and Actuators A: Physical*, 172(1):212-219, 2011.
25. C. Foletti, S. Farisé, B. Grassi, D. Strazza, M. Lancini, and **P. Poesio**. "Experimental investigation on two-phase air-high viscosity oil flow in a horizontal pipe". *Chem. Eng. Sci.*, 66(23):5968-5975, 2011.
26. **P. Poesio**, D. Strazza, and G. Sotgia. "Two- and three-phase mixtures of highly-viscous-oil/water/air in a 50 mm i.d. pipe". *Applied Thermal Engineering*, 49, 41-47, 2012.
27. F. Di Fede, **P. Poesio**, and G.P. Beretta, "Heat transfer enhancement in a small pipe by spinodal decomposition of a low viscosity, liquid-liquid, strongly non-regular mixture". *Int. J. Heat & Mass Transfer*, 55(4):897-906, 2012.
28. G. Ooms, M.J.B.M Pourquie, and **P. Poesio**. "Numerical study of eccentric core annular flow". *Int. J. Multiphase Flow*, 42, 38-45, 2012.
29. D. Strazza and **P. Poesio**, "Experimental study on the restart of core-annular flow". *Chem. Eng. Res. Des.*, 90(11), 1711-1718, 2012.
30. S. Farisé, A. Franzoni, **P. Poesio**, and G.P. Beretta. "Heat transfer enhancement by spinodal decomposition in micro heat exchangers". *Exp. Thermal Fluid Sci.*, 42, 38-45, 2012.

31. G. Ooms and **P. Poesio**. "Analytical study of slightly eccentric core-annular flow". *J. Math. Eng.*, 85, 65-81, 2013.
32. S. Farsetti, S. Farisé, and **P. Poesio**. "Experimental investigation of high viscosity oil-air intermittent flow". *Exp. Therm. Fluid Sci.*, 57, 285-292, 2014.
33. C. Sun, M. S. H. Boutilier, H. Au, **P. Poesio**, B. Bai, R. Karnik, N. G. Hadjiconstantinou. "Mechanisms of molecular permeation through nanoporous graphene membranes". *Langmuir*, 30 (2), 675-682, 2013.
34. P.N. Dadone, M. Reboldi, and **P. Poesio**. "Simulazione computerizzata di incendio in autosilo: confronto tra ventilazione naturale e ventilazione meccanica". *L'Antincendio* 11:48-61, 2013.
35. D. Picchi, S. Correrà, and **P. Poesio**, "Flow pattern transition, pressure gradient, hold-up predictions in gas/non-Newtonian power-law fluid stratified flow". *Int. J. Multiphase Flow*, 63, 105-115, 2014.
36. K.M. Issa and **P. Poesio**. "Algorithm to enforce uniform density in liquid atomistic subdomains with specular boundaries". *Phys. Rev. E*, 89, 043307, 2014.
37. P. Poesio and E.N. Wang. "Resonance induced wetting state transition of a ferrofluid droplet on superhydrophobic surfaces". *Exp. Thermal Fluid Sci.*, 57, 353-357, 2014.
38. D. Picchi, D. Strazza, M. Demori, V Ferrari, and **P. Poesio**. "An experimental investigation and two-fluid model validation for viscous oil in water dispersed pipe flow". *Exp. Thermal Fluid Sci.*, 60, 28-34, 2015.
39. A. Ullman, **P. Poesio**, and N. Brauner. "Enhancing heat transfer rates by inducing liquid-liquid phase separation: Applications and modeling" *Interfacial Phenomena and Heat Transfer* 3(1):41-67, 2015.
40. D. Picchi, Y. Manerba, S. Correrà, M. Margarone, and **P. Poesio**. "Gas/shear-thinning liquid flows through pipes: Modeling and Experiments". *Int. J. Multiphase Flow*, 73:217-226, 2015.
41. G. Losi and **P. Poesio**. "An experimental investigation on the effect of viscosity on bubbles moving in horizontal and slightly inclined pipes". *Exp. Therm. Fluid Sci.*, 75:77-88, 2016.
42. A. Gordychuk, M. Svanera, S. Benini, and **P. Poesio**. "Size distribution and Sauter mean diameter of micro bubbles for a Venturi type bubble generator". *Exp. Therm. Fluid Sci.*, 70:51-60, 2016.
43. G. Losi, D. Arnone, S. Correrà, and **P. Poesio**. "Modeling and prediction of high viscosity oil/air slug flow characteristics". *Chem. Eng. Sci.*, 148:190-202, 2016.
44. D. Picchi and **P. Poesio**. "Stability of multiple solutions in inclined gas/shear thinning fluid stratified pipe flow". *International Journal Multiphase Flow*, 84:176-187, 2016.
45. D. Picchi and **P. Poesio**. "A unified model to predict flow pattern transitions in horizontal and slightly inclined two-phase/shear-thinning fluid pipe flows". *International Journal Multiphase Flow*, 84:279-291, 2016.
46. A. Bonzanini, D. Picchi and **P. Poesio**, "Simplified 1D Incompressible Two-Fluid Model with Artificial Diffusion for Slug Flow Capturing in Horizontal and Nearly Horizontal Pipes". *Energies*,10(9)11372,2017
47. M. Demori, M. Ferrari, A. Bonzanini, **P. Poesio**, and V. Ferrari Autonomous Sensors Powered by Energy Harvesting from von Karman Vortices in Airflow. *Sensors*, 17(9):2100,2017
48. M. Ferrari, A. Bonzanini, and **P. Poesio**, "A 5-equation, transient, hyperbolic, 1-dimensional model for slug capturing in pipes". *International Journal for Numerical Methods in Fluids*, 85(6):327-362,2017.



49. M. Ferrari, A. Bonzanini, and **P. Poesio**, "A slug capturing method in unconventional scenarios: the 5escargots code applied to non-Newtonian fluids, high viscous oils and complex geometries". Accepted for publication in *Petroleum*, 2017.
50. D. Picchi, **P. Poesio**, A. Ullmann, and N. Brauner. "Characteristics of stratified flows of Newtonian/non-Newtonian shear-thinning fluids". *International Journal Multiphase Flow*, 97:103, 2017.
51. D. Picchi and **P. Poesio**, "Uncertainty quantification and global sensitivity analysis of mechanistic one-dimensional models and flow pattern transition boundaries predictions for two-phase pipe flows". *International Journal Multiphase Flow*, 90:64-78, 2017.
52. **P. Poesio**, A. Damone, and O.K. Matar, "Slip at liquid-liquid interfaces". *Physical Review Fluids*, 2(4):044004, 2017.

## Comunicazioni a Congressi Nazionali e Internazionali

1. S. Barake, F. van der Bas, G. Ooms, and **P. Poesio**. "An experimental and theoretical investigation of the influence of high-frequency acoustic waves on the flow of a liquid through a porous material". EAGE/SEG RESERVOIR ROCKS RES. WORKSHOP, in EXTENDED ABSTR. PAPER NO. PAU45SEG/EAGE, Pau (France), April 2001. ISBN: 90-73781-16-7.
2. **P. Poesio** and G. Ooms. "Experimental investigation of the ultrasonic cleaning of the near well bore region of an oil reservoir". 16<sup>th</sup> International Symposium on Non-Linear Acoustics, in NONLINEAR ACOUSTICS AT THE BEGINNING OF THE 21st CENTURY Vol.2, Editors: Rudenko and Sapozhnikov, pp. 1229-1232, Moscow (Russia), August 2002. ISBN: 5-8297-0035-4.
3. **P. Poesio**, G. Ooms, A. Schraven, and F. van der Bas. "Experimental and theoretical study of acoustic streaming in porous media". 2<sup>nd</sup> Biot Conference on Poromechanics, in POROMECHANICS II, Editors: Auriault et al., pp. 763-768, Grenoble (France), August 2002. ISBN: 9-0580-9394-8.
4. **P. Poesio** and G. Ooms. "Theoretical and Experimental Study of the Removal of Small Particles from a Porous Material by Ultrasonic Irradiation". A.I.Ch.E. Annual meeting. Indianapolis (Indiana - USA). November, 2002.
5. **P. Poesio** and G. Ooms. "Influence of ultrasonic waves on flow rate through porous media: experimental and theoretical study". IUTAM Symposium on Mechanics of Physicochemical and Electromechanical interactions in Porous Media. Eindhoven (The Netherlands), May 2003.
6. **P. Poesio** and G. Ooms. "Particle-bridges formation inside porous material". 5<sup>th</sup> Euromech. Fluid Mechanics Conference, in BOOK OF ABSTRACTS, p. 232, Toulouse (France), August 2003.
7. **P. Poesio** and G. Ooms. "Acoustic removal of clay particles from Berea sandstone". International Symposium on Formation Damage Control. SPE86490. Lafayette (Louisiana - USA), February 2004.
8. **P. Poesio** and G. Ooms. "The levitation force on the core in a stationary core-annular flow through a horizontal pipe". 3<sup>rd</sup> International Symposium on two-phase flow modeling and experimentation. Pisa (Italy), August 2004. ISBN: 88-467-1075-4.
9. G. Ooms and **P. Poesio**. "Streaming in a porous material". Inaugural Burgers Symposium, University of Maryland, USA, November 2004.
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