

# Soft.Matter@PT 2015

## Manuel A. Alves

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**Expertise:** Computational rheology; Microfluidics with complex fluids; Non-Newtonian Fluids

	Colloids	Liquid Crystals	Polymers and Gels	Interfaces, surfactants	Foams, emulsions	Granular materials	Biological	Other (specify)
Experimental	✓		✓	✓	✓	✓	✓	
Computacional			✓	✓		✓	✓	
Theoretical			✓					

### Description of expertise:

- Theoretical, Experimental and Computational Fluid Dynamics.
- Computational Rheology; Purely Elastic Flow Instabilities; Elastic Turbulence.
- Transport Phenomena in Porous Media.

### Selected Publications (max 5):

- J. Zilz, C. Schäfer, C. Wagner, R. J. Poole, M. A. Alves, A. Lindner, "Serpentine channels: micro-rheometers for fluid relaxation times", *Lab on a Chip*, **14** (2014) 351-358.
- S. J. Haward, M. S. N. Oliveira, M. A. Alves, G. H. McKinley, "Optimized cross-slot flow geometry for microfluidic extensional rheometry", *Physical Review Letters*, **109** (2012) 128301.
- M. S. N. Oliveira, F. T. Pinho, M. A. Alves, "Divergent streamlines and free vortices in Newtonian fluid flows in microfluidic flow focusing devices", *J. Fluid Mechanics*, **711** (2012) 171-191.
- R. J. Poole, M. A. Alves, P. J. Oliveira, "Purely-elastic flow asymmetries", *Physical Review Letters*, **99** (2007) 164503.
- M. A. Alves, P. J. Oliveira, F. T. Pinho, "A convergent and universally bounded interpolation scheme for the treatment of advection", *Int. J. Numerical Methods in Fluids*, **41** (2003) 47-75.