

Basics of Rheology Workshop

16th & 17th September 2026

Anton Paar UK, 950 Capability Green, Luton, LU1 3LU

Join Anton Paar for an immersive two-day rheology workshop designed for professionals at the start of their rheology journey, as well as those who want to refresh and strengthen their fundamentals. The focus throughout is practical understanding: why tests are chosen, how to run them correctly and what the results truly mean in real applications.

Day one introduces viscosity and flow behaviour using rotational rheometry. You will cover key concepts such as shear stress, shear rate and dynamic viscosity, alongside Newtonian and non-Newtonian behaviour, yield behaviour and temperature effects. A hands-on lab session focuses on correct sample loading, geometry selection and good measurement practice.

Day two explores viscoelastic behaviour and oscillatory testing. Core principles, including strain, shear modulus, G^* , G' , G'' and $\tan \delta$, are explained in a practical context. You will learn how amplitude and frequency sweeps are used for material characterisation and quality control, followed by a practical session running key oscillatory tests. Each delegate will receive a copy of Applied Rheology by Dr Thomas Mezger to support continued learning.

By the end of the workshop, you will be able to:

- Understand core rheology theory and link it to real material behaviour
- Design meaningful experiments with confidence
- Identify common measurement pitfalls
- Interpret data and translate results into practical insight

This workshop is most suitable for:

- Scientists and engineers new to rheology
- Experienced rheometer users strengthening best practice
- Formulators, R&D teams, QC professionals and process engineers
- Anyone working with polymers, emulsions, suspensions, coatings, inks, pastes, gels or structured fluids

Meet the Speaker



Joseph Hodges

Joseph Hodges is Product Manager for Rheology & Particle Characterisation in the UK & Ireland. With 7 years' experience, he has supported research and manufacturing institutions in adopting physical characterisation methods on rheometers and developing material strategies across the UK, US, Europe and South East Asia. In his current role he supports application development and technical enquiries within the UK & Ireland. Joey holds a degree in Biomedical Sciences from the University of Southampton.



Book Your Place

Spaces are limited to ensure an optimal delegate-to-tutor ratio for hands-on learning. To reserve your place please scan the QR code. Alternatively, please email info.gb@anton-paar.com.



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Day One

09.30	Welcome, Registration & Coffee on arrival.
10.00	Introduction – Safety Briefing An introduction to Anton Paar and learning objectives.
10.15	Messy play session - Breaking assumptions, building intuition and identifying key physical phenomena in everyday materials.
10.40	Rheology & viscous behaviour – The start of the rheology road, why do we measure viscosity?
11.00	Simple viscosity tests – A brief overview of viscosity measurement in industry, and progression into modern methods.
11.20	Rheometers & measuring geometries - Why rotational rheometers are the default standard for measuring rheological properties and why there are different measuring systems.
11.40	Definitions: shear stress, shear rate, (shear) viscosity - Explanations of common rheological terms, kinematic viscosity and common examples of rheological phenomena observed in ubiquitous and industrial applications.
12.00	Break.
12.15	Rotational tests - An explanation of a controlled shear test and a controlled stress test and why you would use one over the other.

12.30	Flow behaviour - An introduction to Newtonian and Non-Newtonian flow behaviour in polymer solutions, particle suspensions and emulsions. Including explanations of shear thinning, shear thickening, zero shear viscosity, infinite shear viscosity, the influence of particles and working with both flow curves and viscosity curves.
13.00	Yield Point - An introduction to elastic behaviour and regression models. Including an explanation of the 'yield stress' and 'yield strain'.
13.30	Lunch.
14.30	Time-dependent behaviour (rotation) - Shear equilibration and time-dependent shear thinning (thixotropy).
15.00	Temperature-dependent behaviour (rotation) – The importance of controlling temperature and its effects on rheological behaviour, with a focus on viscosity.
15.15	Break.
15.30	Lab briefing + instrument setup / grouping.
15.45	Lab 1 (Rotational): hands demo with the rheometer, introduce best practice including sample loading, trimming and understanding the measurement envelope of a rheometer + geometry pairing. We'll practice measuring samples we used earlier in the day.
17.00	Finish.

Day Two

09.30	Welcome, Registration & Coffee on arrival.
09.45	Rheology and Viscous Behaviour - Session Recap and Learning Objectives.
10.00	Viscoelastic Behaviour - Identifying key physical phenomena in application and its impact in material handling.
10.25	Definitions: Deformation, Strain, Shear Modulus - A quick recap followed by an introduction to new rheological terms more relevant to elastic behaviour. Including examples of moduli values in the real world.
10.45	Oscillatory Tests - An introduction to G^* , G' , G'' , $\tan \delta$ and a number of key parameters related to viscoelastic behaviour.
11.05	Amplitude sweeps - Identifying the limit of the linear viscoelastic range, and its application in QC, product development and process optimisation.
11.25	Frequency sweeps - Quantifying time dependent viscoelastic responses and using this information for molecular weight calculations in polymers, stability testing and other application areas.
11.45	Break.

12.00	Time-dependent behaviour (oscillation) - A better route to quantifying time dependent structural recovery and its application in controlled deposition processes (e.g. coating, spraying, 3D printing, etc.)
12.30	Temperature-dependent behaviour (oscillation) - A better route to quantifying temperature dependent structural changes such as melting, crystallisation, curing, glass transition and a number of other phenomena.
13.00	Lunch.
14.00	DMA in Torsion - Additional mechanical testing capability and turning the rheometer into a universal testing machine. Focus in torsional deformation.
14.15	DMA in Extension - A brief introduction to extensional testing and differences in extensional moduli (E^* , E' , E'') when compared to shear moduli.
14.30	Break - Option for early exit for long distance travellers.
14.45	Optional: Lab 2 (Oscillatory) - Amplitude sweeps, frequency sweeps, 3ITT tests and any outstanding areas of interest.
16.30	End of workshop - safe travels.