



Rheology Solutions Pty Ltd

Focused on providing our customers with materials characterisation solutions through knowledge, experience and support.

Rheology Solutions

Our vision is to recognise the importance of specialisation and dedication to a specific science and to provide full technical support and service to every customer.



Our company goal is to integrate industry experience and materials characterisation techniques to provide practical solutions for customers.

Rheology Solutions is a private company owned and managed by Patrick Griffin and Kaye Griffin. Rheology Solutions was established in April, 1998 as a specialist sales and service organisation dedicated to the science of materials characterisation and are the exclusive Australian distributors for Thermo Scientific, Optical Control Systems, Marimex Industries Corporation and Schleibinger Gerate range of equipment and instrumentation.

Rheology Solutions has an established contract testing service and applications laboratory, equipped with a comprehensive range of rheology instruments to meet the requirements of materials characterisation testing.

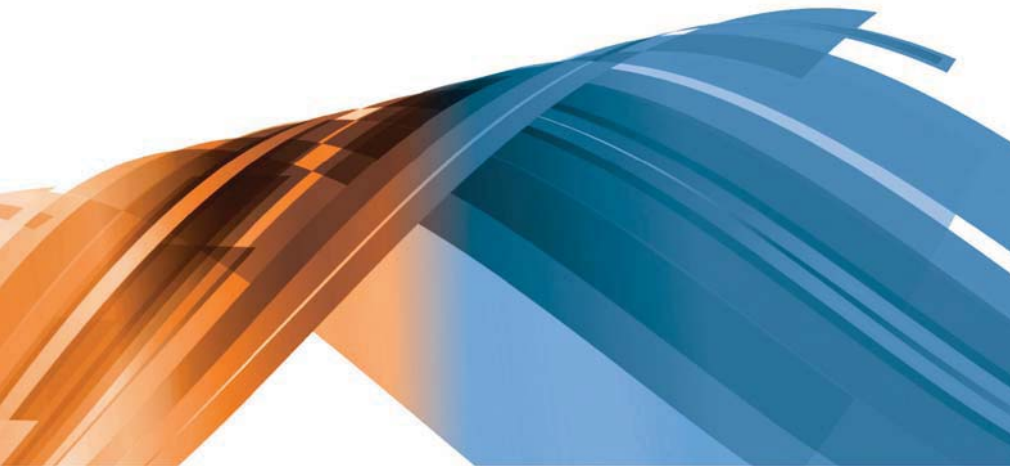
Seminars and application specific workshops are regularly offered and are designed to meet the needs of specific customer and industry applications.

Rheology Solutions has its head office near Melbourne in Victoria Australia. Rheology Solutions provide customers with access to the right products to ensure that the best technical solution, technical support and service are provided.

The product range and technical specialities are targeted to the following applications and industries:

- Building & Construction
- Chemical & Allied Industries
- Food
- Mineral Slurries
- Pharmaceutical, Cosmetic & Allied Industries
- Polymer
- Surface Coatings





Our Partners

The Partners that Rheology Solutions work with are at the forefront of materials characterisation technology and product development. They are;



MARIMEX INDUSTRIES CORP

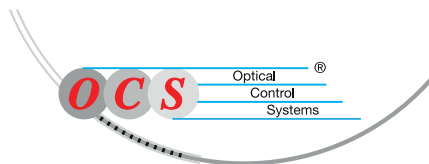
Marimex Industries Corp specialise in the production of torsional motion process viscometers, and have many successful installations worldwide within chemical, petrochemical, pharmaceutical and food industries. They have many years of experience with process viscosity measurements which allows users to measure the most difficult and demanding applications. Together with their customers Marimex determines the measurement requirements and work towards a constructive solution for each application. The selected instrument configuration assures a quick and effective solution for each project.

Schleibinger Geräte

Building Materials Testing Systems

SCHLEIBINGER GERATE

The Schleibinger range of testing systems is specifically designed for the testing of construction materials such as cement paste, mortar, fine concrete, plaster etc. The range includes rotational viscometers, compact viscometers, freeze/thaw units, shrinkage cones and shrinkage/expansion units.



OPTICAL CONTROL SYSTEMS

Optical Control Systems (OCS) supplies customised and complete solutions in the fields of digital image processing, optical measurement and automation. The systems ensure maximum product quality control, and with the aid of precision cameras in conjunction with high performance online image processing, the smallest defects in polymer products are detected, located and analysed in detail. The applications for OCS systems range from laboratory use to complete integration into the production process. OCS has a stated goal of providing the polymer industry with quality control systems that are optimised with regard to production and purpose, and offer complete solutions with robust and up-to-date technology.



THERMO SCIENTIFIC – MATERIALS CHARACTERISATION

Thermo Scientific, one of the pioneers in rheology, successfully supports a wide range of industries with its comprehensive material characterisation instrumentation and equipment, to analyse and measure viscosity, elasticity, processability and temperature related mechanical changes of plastics, food, cosmetics, pharmaceuticals and coatings, chemical or petrochemical products, plus a wide variety of other liquids or solids.

THERMO SCIENTIFIC – TEMPERATURE CONTROL

As an innovative leader in temperature control, Thermo Scientific have the expertise to enable you to optimise your liquid cooling and heating applications while increasing productivity and reducing operating costs.





Rheology Solutions established a dedicated OnLine Rheometer Group in July 2011. The goal of this group is to develop and commercialise an OnLine Rheometer (OLR) to meet the process monitoring, process control and quality control needs across various industry applications.

The OLR has been developed and manufactured by Rheology Solutions and is designed to continuously measure, plot and report the flow properties of process liquids in the pipe.

The OLR is designed to continuously measure, plot and report the flow properties of process liquids in the pipe. The OLR will provide instant and accurate rheological data in real time so that manufactured and processed products are produced and maintained within specification.

The OLR is designed for use in a process pipe, and it continuously measures and relays the data to the process operator through SOLR, their proprietary software for the OLR.

Rheology Solutions have expanded their product portfolio too include:

- Product Development
- Manufacturing
- International Distribution.



THE OLR HISTORY AND PROJECT BACKGROUND

The Rheology Solutions OLR is an on-line process monitoring and control instrument that delivers real-time data to achieve and maintain better quality control for production processes.

The OLR continuously measures and disseminates the flow properties of a liquid in a pipe, in real-time. The market need for this instrument is acute, and there are no direct competitors for the instrument. The OLR technology is now patent protected internationally.

The OLR technology was a development from work undertaken by the CSIRO*, who developed a functional α -prototype. Their early experiments and theoretical investigations demonstrated the technical possibilities, but applications development and refinement of the existing hardware and software were critical for the instrument to be commercialised. With this in mind, the CSIRO licensed the technology to Rheology Solutions to refine the OLR and take it to market.

**CSIRO, the Commonwealth Scientific and Industrial Research Organisation, is Australia's national science agency and one of the largest and most diverse research agencies in the world.*

The OLR is now a commercial reality and a significant new direction for Rheology Solutions. As a part of the commercialisation strategy strategic partnerships with companies have been sought out which has significantly accelerated the development and marketing of a commercial OLR. These partners are:

- **Industry Partner:** GlaxoSmithKline (GSK) – The central engineering resource for global GSK production facilities is at Brentford, UK and this has provided processing expertise, a processing plant test-sites, and direct feedback on the performance of the instrument and software, to develop the OLR, also allowing GSK to build a greater understanding of their product process.
- **Academic Partner:** University of Queensland (UQ) – UQ have an internationally recognised centre for rheology and materials characterisation, with distinguished researchers and excellent facilities. UQ provides independent verification of the OLR through testing and comparisons with existing technologies and a thorough examination of the theoretical basis for the OLR. UQ are also conducting further fundamental research around the OLR core technology, to enhance the features and benefits of subsequent OLR models.





OLR – Markets & Applications

Across key sectors e.g. food technology, mining, and petrochemicals, product quality is verified by measuring flow properties (rheology) of liquids. Currently, these measurements are either through laboratory analysis which is highly accurate, or real-time, through in- or on-line viscometers, where low quality data compromises reliable interpretation. The OLR will deliver high quality data in real-time, to maximise the benefits achieved with real-time process control.

The measured forces can be used to calculate the rheological profile of the liquid between the plates and the results can be compared with those from a standard laboratory test directly and easily. The OLR can be fitted in the main process pipe (shown schematically), or in a side-stream so that installation will be uncomplicated and low risk for the customer.

The OLR consists of two parallel plates, one of which oscillates axially at a fixed amplitude and variable frequency. The other measures the reaction of the process liquid to the oscillation. The process liquid is trapped between the plates during the measurement and flushed away afterwards by the process flow when the plates separate. The plates then come together again, trapping a new sample and the cycle continues.

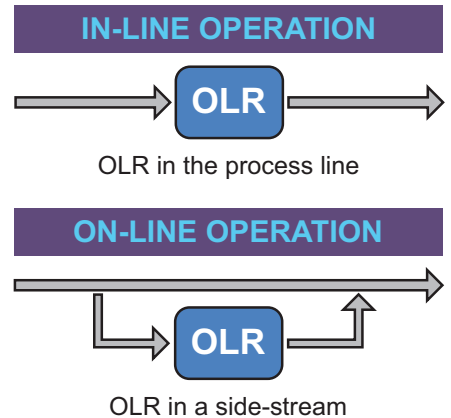


Figure 1. Schematic diagram illustrating the proposed operation of the OLR.



Our People



PAT GRIFFIN, MANAGING DIRECTOR AND OWNER, RHEOLOGY SOLUTIONS PTY LTD

- Proven experience in scientific instrumentation and process control with over 30 years involvement with local and international markets
- Key player in development of international markets for Australian scientific industry, senior management roles with local & international manufacturers
- International Export Manager with SGE International demonstrating a strong track record with establishment of worldwide sales and distribution networks
- Marketing & Sales Manager with ICI Instruments with key responsibility in new product development and international rollout of products to world markets
- Collaborated with local and international research institutions in developing new technology and facilitating commercialisation
- Member of the Board of Directors of other technology Companies across Australia



KAYE GRIFFIN, MARKETING DIRECTOR AND OWNER, RHEOLOGY SOLUTIONS PTY LTD

- Proven experience in scientific industry with over 20 years involvement in local and international marketing
- Key player in development of markets for Australian scientific industry, with senior roles with local and international distributors
- Marketing Manager and General Manager with multi-national public relations and advertising company developing strategies for national product and service launch
- Marketing & Sales Director with high technology company responsible for global marketing strategies
- Collaborated with local and international medical research organisations in developing global communication strategy for public health awareness programs and events
- Member of the Board of Directors of other technology companies across Australia



TIM KEALY, OLR PROJECT DIRECTOR, OLR GROUP, RHEOLOGY SOLUTIONS PTY LTD,

- Proven track record in rheology based research at leading Australian universities
- Three years as Project Leader for product development at a leading biodegradable polymer manufacturer
- Skilled at product commercialisation and project management in an international setting
- Worked with collaborative partners at the highest levels in large locally- and overseas-based multi-national companies
- Direct input for successfully taking concepts to market
- Extensive track record for applied rheology measurements in a variety of industries, illustrated by publications in learned journals
- Development of measurement techniques and installation of measurement systems for key industry sectors in Australia



PRADIPTO BHATTACHARJEE, SENIOR SCIENTIST, OLR GROUP, RHEOLOGY SOLUTIONS PTY LTD,

- Proven track record in rheology theory and measurement, novel measurement techniques and applied rheology
- Post-doctoral experience at Monash University in Melbourne and at MIT in Boston, USA
- Worked in demanding scientific environments, in collaboration with large multi-nationals and US Government agencies
- Extensive track record for applied rheology measurements, illustrated by publications in learned journals
- Speaker at national and international rheology meetings



The **OnLine Rheometer Group** is a division of **Rheology Solutions**
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www.rheologysolutions.com or **www.onlinerrheometer.com**