

Named at Last

The Newsletter Naming Competition ... Name This Space??? is now completed. The final tally from the voting showed that the name of choice for the newsletter by our readers was Haake Focus. The voting responses to the selected names are:

- **RheoBytes @ 14%**
- **Flow Times @ 14%**
- **Let's Torque @ 32%**
- **Haake Focus @ 40%**

It is with great pleasure that we award the prize of an exclusive Mont Blanc pen to Kevin Barber who is the winner. Thank you Kevin.

We are pleased to announce that the five voters selected are: David Mullen, Tony Evans, Mark B. Altman, Stefan Peetz, & Alves Vilson who also receive a Mont Blanc pen.

Thank you to all the entrants and voters, we appreciate your contribution.



Asia Pacific Sales Meeting

In March a group of keen and motivated distributors and sales staff from the Australian & Asia Pacific area met in Penang, Malaysia for the Thermo Haake Sales Meeting. The meeting provided a platform to showcase the newest product enhancements, demonstrate, operate and be trained on a range of products across all Business Units. Plus ... be dazzled

by the newest product from the Rheology Group called **RheoScope 1** (see page 3) and hear of the newest acquisition by Thermo Haake of **PRISM UK** (see page 4).

We are pleased to share this exciting news with you and look forward to your hearing your comments.



Here's a photo of the hard working team that attended the meeting in Penang.

To view this photo at full screen size visit www.haake.de/penang.htm. This page will also provide you with a list of each of the attendees at the meeting and the company and country they represent.

Our thanks are again passed to our Malaysian host agent MS Instruments who ensured the meeting was professionally organised, fun and most rewarding.

New Products

- "See The Viscosity" with RheoScope 1. It provides full rheological capabilities of a High-Tech Stress Rheometer PLUS Visualisation!

Software Updates

- Circulator Application Software - ThermStar95plus
- New R&D Scientific Software Package - RheoSoft

Summer Promotion

- Upgrade your old viscometer and reap the benefits

Application Papers

- Measurements on Thin Viscoelastic Fluids
- Test Methods for the Characterisation & Optimisation of Recycled Polymers

Product highlights

- Automated MVR Measurements – Meltflexer ST
- Mobile Torque Rheometer – PolyDrive Mixer
- Mobile Lab Scale Extruder – PolyDrive Extruder

Preference Guide

- External Temperature Control Matrix for Viscometers & Rheometers – a quick reference and guide for selecting the correct circulator

K Show 2001

**Düsseldorf – Germany
from 25 Oct. – 1 Nov.**

Thermo Haake will again be participating at this internationally renowned plastics and rubber trade show. The show will provide a forum for the industry launch and demonstration of their newest products, software and instruments. If you are planning to visit the K Show 2001 then drop by our stand, you will find us at [Stand/Booth 10D 26](#).

For further information on the K Show 2001 and details on the Thermo Haake products being displayed visit www.thermohaake.com and follow the links in the News & Events section.

We Are Pleased to Present ...

Dr. Alexandra Hess and Dr. Cornelia Küchenmeister who joined Thermo Haake Rheology Business Unit in April and May 2000 respectively. In celebration of over 1 year at Thermo Haake a profile on each follows.

Dr. Cornelia Küchenmeister studied chemistry at the University of Rostock, and received her Ph.D. in physical chemistry (measurements of the viscosity of different gases and gas mixtures using oscillation viscometer and vibration wire viscometer, correlation of viscosity surfaces).

Dr. Alexandra Hess studied chemistry at the University of Bayreuth, and completed her masters at the University of Delaware, and received her Ph.D. from the Max-Planck-Institute in Mülheim an der Ruhr.

Both Cornelia and Alexandra are available to assist in the organisation and presentation of seminars in rheology



in domestic and foreign markets. They also provide product demonstrations, full technical and application support to their agents and customers.

Alexandra and Cornelia discussing test results



ThermStar95plus

THE Application-Software for all Thermo Haake Circulators of the Phoenix, F/N- and DC-Line

With ThermStar95plus it is possible to connect Thermo Haake circulators of the Phoenix-line (P1 and P2), the F/N-line (F6, F8, N6 and N8) as well as circulators DC30, DL30 and DC50 under Windows 95, 98 or NT to a PC.

Highlights of ThermStar95plus:

- ✗ Simultaneous control of up to eight circulators.
- ✗ On line-graph with zoom function and display of temperature- and time values.
- ✗ Temperature ramp programs with up to 99 segments and 99 repetitions.
- ✗ Long distance diagnosis possible with recorded service data.
- ✗ Export of measured values as ASCII-file.
- ✗ Automatic identification of connected circulator.
- ✗ Circulator connection to Intranet / Internet available ("remote control").
- ✗ Monitoring of various circulators via Intranet from one place.

Description of the functions:

The use of the program is very easy due to a synoptical arrangement of the program options by a register card system. Selection between ramp function, pure measuring mode and on line mode with set point specification is possible during the running of ThermStar95plus. Any number of temperature ramp programs can be created and stored. The programs can consist of up to 99 segments, each with a running time of max. 23h:59min:59s, which can be programmed accurately to the second. You can choose between temperature- or time-oriented execution of the segments.

Additionally it is possible to use ThermStar95plus as pure data acquisition software. Settings are made directly at the circulator and the program will record the temperature development of set temperature, internal and external temperature.

On line mode allows to set new temperature values, start/stop the circulator or send commands via the terminal program.

Matrix for Viscometers & Rheometers and External Temperature-Control

Application Temperature Range °C	Model of Viscometer and or Rheometer	
Below 0 °C to typically down to -20 °C	Falling ball, VT01/02, VT6/7, VT550 DC30-K20 (-28 °C / -10 °C up to +150 °C): Lower cost version with RS232C port or DC50-K35 (-35 °C / -20 °C up to +200 °C): Wide temperature range, connection for external Pt100 sensor, RS232C port	RS1, RW1, RV1, RS300 P1-C35P (-35 °C / -20 °C up to +200 °C): Wide temperature range or P1-C40P (-40 °C / -25 °C up to +150 °C): High cooling capacity ✗ All models with connection for external Pt100 sensor, RS232C port, internal programmer, pressure and suction pump
0 °C to 100 °C	DC30-K10 (-10 °C / 0 °C up to +150 °C): With cooling and RS232C port or DC10-P5/U (up to +100 °C): Lower cost version with integral bath, just for heating	P1-C25P (-28 °C / -10 °C up to +150 °C): With cooling internal programmer, pressure and suction pump or DC50-K20 (-28 °C / -10 °C up to +150 °C): Lower cost version with cooling ✗ All models with connection for external Pt100 sensor, RS232C port
+100 °C to typically max. 200 °C	DC30-B3 (up to +200 °C): With RS232C port, 3 Litre bath, just for heating or DC50-B5 (up to +200 °C): Connection for external Pt100 sensor, RS232C port, 5 Litre bath, just for heating	P1-B5 (up to +250 °C): 5 litre bath, just for heating or P1-B7 (up to +250 °C): 7 litre bath ✗ All models with connection for external Pt100 sensor, RS232C port, internal programmer, pressure and suction pump

For more information on the circulators Email info@rheologysolutions.com and Quote no: 46.

Service data can be simultaneously measured and graphically shown for the mentioned functions at the same time as temperature value measurement occurs. Monitoring of various ThermStar95plus programs running on different PC's is possible via Intra- or Internet with the help of the monitor program which is delivered together with ThermStar95plus.

It is also possible for "remote control" of one circulator via Intra- or Internet by the COM-client, which is included in the ThermStar95plus package.

More Info? Quote no: 47

Screen Shot:

Hard- and software requirements:

One circulator of the Phoenix-line P1 or P2, one of the F6, F8, N6 or N8 series with the operating software version 1.53x or higher or a circulator of the DC30, DL30 or DC50 line.

A PC with operating system Windows 95, 98 or NT and CD-ROM drive. Minimum one available RS232C interface port with fitting connecting cable (9-pole SUB-D on circulator side).

NEW Scientific Software Package – RheoSoft

NEW Scientific Software Package – RheoSoft

A new software package specifically designed for R&D applications is now available. The software is called RheoSoft and it fully integrates with RheoWin software.

The software is suitable for use with all current models and extends the rheological parameters available to the users to include the following features:

- ASCII import data provision
- Mathematical treatment for regressions and curve smoothing

- Rheological analysis – G'-G'' crossover, Master Curves, Creep Analysis, MWD and more
- Time temperature superposition at specific temperatures
- Calculation of relaxation time spectra

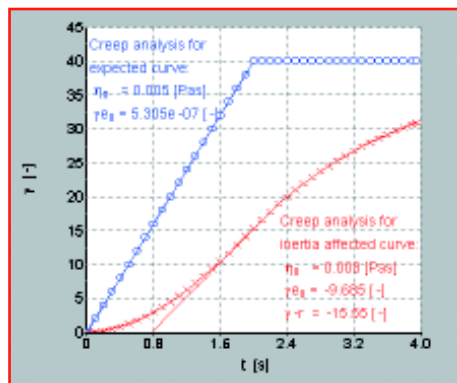
The new software eliminates the time consuming and meticulous task of carrying out these calculations manually. The software will perform the calculations and produce the files and graphs instantly-leaving more time for interpreting the results.

A demo version can be obtained at

rheology@thermohaake.com

More Info? Quote no: 48

Measurements on Thin Viscoelastic Fluids



Creep test with E7 oil from RW1 and traditional rheometer

In rotational rheometry measurements on water-like fluids often give unsatisfactory and unreliable results. In this paper "RheoWave 1 – Unmatched potential for measurements on thin viscoelastic fluids" a new

drive concept is presented where the technical requirements for measurements on low viscoelastic materials have been realised.

The influence of instrument inertia to creep and recovery experiments is analysed and a correction method is explained. First results with the new instruments are shown and compared with conventional controlled stress rheometer data.

These results confirm that the new RheoWave 1 is the ideal instrument to compliment conventional controlled stress rheometers for those applications – thin viscoelastic fluids.

More Info on the RheoWave 1? Quote no: 52

For a copy of the paper Quote no: 53

Customer Training?

The Thermo Haake Customer Training Program for 2001 is now scheduled. For more information on the times and available spaces visit www.thermohaake.com>AboutUs

Viscometers and Viscosity Measurements That Are Safe For The Future And Beyond

Users of older viscometers can upgrade their viscometer to current models. The new models all use the same sensors as currently in use, are safe and will be supported for the next 10 years.

If you work with one of the following viscometers, you should consider an upgrade or investment in the future with the following products:

Viscotesters – VT23, 24, 180, 181, 500 upgrade to a Viscotester 550 or RotoVisco 1

More Info? Quote no: 49

RotoVisco – RV2, 3, 11, 12, 20 upgrade to a RotoVisco 1 or RheoStress 1.

More Info? Quote no: 50

Haake users of these older viscometers should now ask themselves the following questions:

1. Can we document our results according to GLP/GMP?
2. Are we allowed to use our viscometer in the ISO 9000 Production?
3. Does the production continue if our viscometer fails?
4. Are our test results safe for the next three years even if our viscometer cannot be serviced any longer?
5. If we need to have our viscometer serviced are there spare parts still available some 15 years after we purchased the viscometer?

If you didn't answer yes to all of these questions, then you need to consider the benefits of our Summer Promotion. All users who participate in this program will receive free step by step instructions, certificate of guarantee, a free rheological reference book and much more.

Interested in how to make your viscosity measurements safe for the future and beyond? Email info@rheologysolutions.com and Quote no: 51

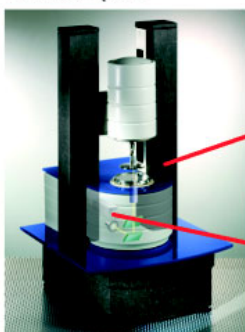
NEW See the Viscosity!

RheoScope 1 – The Rheometer plus Visualisation and Camera.

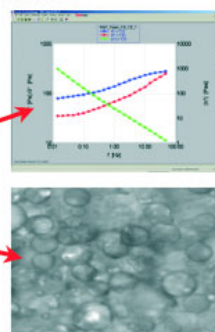
The combination of two analytical methods. The RheoScope 1 incorporates the RheoStress 1 Controlled Stress Rheometer, a Microscope and the software – RheoWin with a camera that allows for picture recording and more.

RheoScope 1 offers full rheological capabilities of a High-Tech Rheometer plus visualisation during the entire measurement.

RheoScope 1



Result



Capture structure and rheology simultaneously

RheoScope 1 is suitable for a broad range of products and applications which includes: Food, Cosmetics, Polymers, Pharmaceuticals, Asphalt, and many more such as Gels, Pastes, Solutions, Dispersions and Foam.

RheoScope 1 is ready for ordering now with delivery times of 2 months.

Interested? Further information on this exciting new product is now available. Email info@rheologysolutions.com and Quote no: 54

Thermo Haake Acquires PRISM (UK)

Thermo Haake is pleased to announce the acquisition of the business of the innovative British twin-



screw extruder manufacturer, PRISM. This acquisition further extends the market coverage and product range for the polymer and related industries.

Founded 10 years ago, PRISM has pioneered the design of small bench-top-twin-screw systems for use in thermoplastics, powder coatings, chemical, pharmaceutical and food industries. Over 300 customers worldwide use PRISM extruders and ancillary equipment in research, development, production and quality control applications.

Now part of the Thermo Electron Corporation, the company will be known as Thermo PRISM and will be part of the Polymer Technology Business of Thermo Haake.

HAAKE has been manufacturing and supplying Rheo-cord torque rheometers for over 50 years. These instru-

ments use state of the art technology to support the whole polymer cycle, from laboratory through to production and quality control. The latest Thermo Haake PolyLab, System includes twin screw processing test equipment, and part of it includes the PRISM clamshell opening 16 mm twin-screw compounders.

Uniting the two companies will allow Thermo Haake to extend its offering in the compounding and mixing technology. The product range now covers all aspects from a micro compounder up to pilot scale extrusion systems to support the whole of polymer process applications.

Further information on the Thermo PRISM range of extruders can be found by visiting the web site on

www.twinscrew.com

More Info? Quote no: 55

New Lab Report Available ... Test Methods For The Characterisation & Optimisation of Recycled Polymers

Polymers are used daily in thousands of tons. Recycling of the used polymers is essential to reduce the amount of waste. One of the key problems in recycling is the separation of the polymers to defined types such as PE, PP, PVE and Polyesters.

Even sorted materials show a wide variation of flow behaviour, which eventually prevents a smooth processing of the recycled polymers.

The Lab Report details the test methods carried out to characterise and optimise the recycling of polymers. This includes:

- Melt Flow Rate
- Capillary Rheology
- Extruder Type Capillary Rheometers
- Laboratory Extruder Test
- Laboratory Mixer Test

The key to testing recycled material is obtaining a heterogeneous mixture of the collected materials. Compounding and homogenisation of the materials are important to achieve constant product quality and reproducible results.

The Lab Report details and explains how the use of modular test equipment using mixers and extruders will enable measurements to be obtained across a wide range.

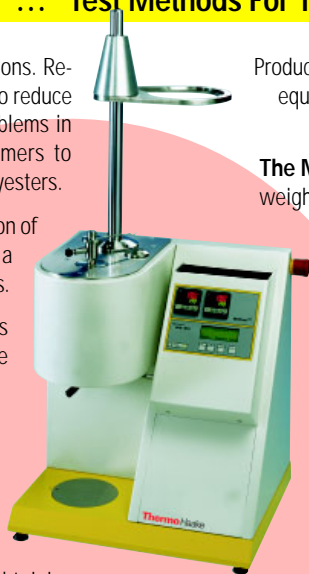
For a copy of the Lab Report ref: LR44E Quote no: 56

Reader Comments

Contributions to this newsletter are welcomed. Please send an Email to newsletter@thermohaake.com

Looking for Application Information?

Thermo Haake provides application support worldwide. If you would like to discuss your particular application and find out where Thermo Haake can offer technical product support contact your local distributor or Email newsletter@thermohaake.com



Product summaries of three of the key equipment and instruments used in this test method follows:

The Meltfixer ST offers automated weight-lift device and MVR measurements and provides MFR measurements, Melt Density, Viscosity and Shear Rate.

More Info on the Meltfixer ST? Email info@rheologysolutions.com and Quote no: 57

PolyDrive – The Mixer Specialist.

A dedicated stand alone mobile torque rheometer designed specifically for polymer, ceramic, food products and rubber applications. Typical processing applications include:

- Simulation of melt behaviour in the extruder
- Testing the plastifying and thermal/shear stability behaviour of PVC dry blends
- Determination of the influence of various additives on new formulations ... and much more.

More Info on the PolyDrive Mixer? Quote no: 58

PolyDrive – The Extrusion Specialist. The stand alone mobile extrusion instrument to partner the PolyDrive Mixer. The unit combines with specific accessories such as extruder barrel, screws, dies, post-extrusion units and feeding units for the extrusion of polymers, ceramics, food products and rubber applications.

The extrusion process can be followed on the large-scale display and documented via the interface in your production or lab control centre.



More Info on the PolyDrive Extruder? Email info@rheologysolutions.com and Quote no: 59

Full product information can also be obtained on the PolyDrive Mixer, PolyDrive Extruder and Meltfixer ST by visiting www.thermohaake.com

Editors Note:

There is no guarantee that comments or feedback received will be published. However, we will answer all communications direct.

