

PRESS RELEASE 4/2017

Leistritz Elongational Rheometer: Everything under control!

German Leistritz Extrusionstechnik GmbH will present the Leistritz Elongational Rheometer at the Fakuma 2017 for the first time.

Friedrichshafen/Germany (October 17, 2017) – Leistritz Extrusionstechnik GmbH will be presenting a new product: the Leistritz Elongational Rheometer. It is a state-of-the-art-measuring system that provides solid data to prove even the slightest variations in the compounding process. “As part of the continuous development of process technology and our Industry 4.0 activities, we paid close attention to the important issue of an intelligent process control,” explains Thomas Unger, Head of the Leistritz lab in Nuremberg. “In cooperation with the Austrian Johannes Kepler University in Linz we developed an online elongational rheometer with patented die geometry.” The range of applications extends to all plastics and supports the process reliability when working with both highly viscous pipe compounds as well as low viscous products for fiber and injection molding.

Features

During the extrusion process, a small amount of the melt flow is channeled off via a bypass system and pushed through the rheometer’s slot die. This die is based on a new, patented design with a hyperbolic narrowing. After the measurement, the material is transferred back into the process without losing any material.

The rheometer facilitates online measuring of the shear viscosity with shear rates in the range of 10 to 10,000 s⁻¹ and the elongational viscosity with elongation rates in the range of 5 to 75 s⁻¹. The novel die generates a constant elongational flow. So far, this has not been possible with current online measurement devices. During a continuous measuring process, the operator can query two measured values of shear viscosity and one value of extensional viscosity in the according, precisely defined shear and expansion ranges at the same time. „An intelligent automation in the online rheometer’s control unit allows the

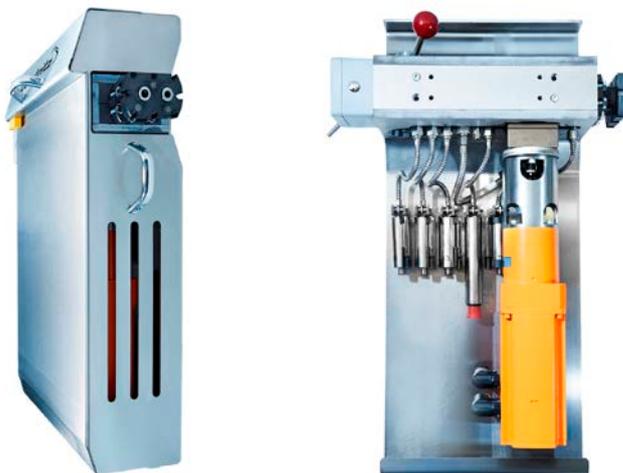
customer to obtain viscosity curves of the material being currently processed within a very short time. This is accomplished through targeted variation of the shear and elongational rates.” Moreover, the Leistritz Elongational Rheometer can also indicate the melt flow index as well as the IV value. The wide range of online analysis options is complemented by the determination of the melt density.

The online elongational rheometer can be mechanically integrated onto any given extrusion process, without having to undergo major retrofits. The software and visualization of the measured results is either part of the Leistritz extruder control unit or a separate stand-alone version.

„The online process and quality control has increasingly become an indispensable asset in the extrusion process, because it provides quick and efficient monitoring, which past installations of this measuring system have shown,“ says Unger.

Leistritz Extrusionstechnik GmbH at the Fakuma 2017 in **hall A6/booth 6302**

Images (© Leistritz):



The Leistritz Elongational Rheometer with a patented die geometry, closed and open.

Leistritz Extrusionstechnik GmbH

For 80 years Leistritz Extrusionstechnik GmbH with its headquarters in Nuremberg/Germany has been building twin screw extruders for the processing of plastics and pharmaceuticals. Leistritz customers benefit from the know-how in various areas of material processing such as masterbatch, compounding, direct, lab and pharmaceutical extrusion. The company employs around 190 people worldwide and keeps subsidiaries in the US. (Leistritz Advanced Technologies Corp.), China (Leistritz Machinery (Taicang) Co. Ltd.), and Singapore (Leistritz SEA Pte. Ltd.) as well as sales offices in Italy and France.

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