



流变特性

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Malvern 2009 下半年流变学网上研讨会计划

2009 年 6 月

Non-Linear Rheology of Biopolymers

生物大分子非线性流变学

Rheology / 流变

2009-06-18

A simplified method to determine asphalt mixing & compaction temperatures

确定沥青热拌混合和压实温度的实验方法

Rheology / 流变

2009-06-23

Mr. John Casola

A new approach to determining laboratory mixing & compaction temperatures of hot mix asphalt binders will be discussed. This procedure will use the dynamic shear rheometer to predict working temperatures for both modified and un-modified, neat, liquid asphalt types. This procedure is the work product for NCHRP 9-39 researched by NCAT.

本讲座将讨论确定热拌沥青混合料混合和压实温度的实验方法, 该方法通过动态剪切流变仪预测改性沥青和未改性的纯沥青的工作温度。

rSolution: Making advanced rheological and microstructural characterisation of complex fluids easy

rSolution: 让复杂流体流变测量和微观结构表征变得简单

Rheology / 流变

2009-06-24

Samuil Amin, Ph.D

This presentation will illustrate how the Kinexus rSolution complex fluid sequences can be utilized to very simply carry out rheological and microstructural characterization for a range of complex fluids. Complex fluids such as worm like micelles, lamellar gel networks, cubic phases, emulsions, colloidal glasses etc find applications in a wide variety of industries ranging from home, personal care to oil recovery and drug delivery etc. Understanding how the rheological response is controlled by the underlying microstructure and how various additives may impact that microstructure is key to engineering the performance of such complex fluids. This presentation will show how simply this understanding and characterization of microstructure and rheology can be

gained through a library of built-in sequences that utilise the latest theoretical understanding, models and analysis.

本讲座将着重介绍使用 Kinexus 流变测量智能解决方案 rSolution: 复杂流体流变测试程序，来表征一些复杂流体的微观结构。复杂流体像蠕虫状胶束、片状凝胶网络、乳液、胶体应用很广泛，涵盖了家庭日用品、个人护理品、采油和药物输送等领域。了解微观结构和流变响应的关系，各种添加剂对微观结构的影响对这些复杂流体的应用至关重要。该讲座会演示通过使用具有最新流变理论模型和分析方法的流变测试程序对复杂流体的微观结构进行表征。

2009 年 7 月

Food Rheology

食品流变学

Rheology / 流变

2009-07-30

Mr. Chuck Rohn

Food rheology is such a broad topic that we need to narrow it down to what kind of food we want to test, and what we expect to learn from testing its rheology. This webinar will focus on food doughs made-up of different ingredients. It has been reported that the kinematics of the extensional deformation of doughs is preferred over shear deformation. Furthermore, greasy doughs can produce wall slip and therefore can not be tested in shear as well as extensional measurements. Reported are studies that were made on the extensional and shearing measurements of dough samples to determine which tests are more sensitive to their compositional variations.

食品流变学是一门内容非常广泛的学科。本讲座将着重介绍生面团流变学。实验证明生面团更容易发生拉伸变形，而不是剪切形变。含油脂较高的面团容易发生壁面滑移，所以很难进行剪切和拉伸流变测试。本研究对一系列的面团进行了拉伸和剪切流变实验，并讨论哪些流变测试对样品的配方组成更敏感。

2009 年 8 月

Reproducible Rheology Data: May the rForce be with you.....

流变测试数据重复性问题: rForce 可以帮助您.....

Rheology / 流变

2009-08-04

Adrian Hill, Ph.D

This presentation will demonstrate the importance of sample loading in achieving accurate and reproducible results on a rotational rheometer. Advantageous hardware, software and performance features will be highlighted which combine to achieve the most accurate and reproducible data possible. Of particular importance is the concept of a unique "cradle to grave" approach for all rheological data to allow automatic and complete sample history traceability for every sample tested. Examples will be shown to demonstrate how this approach can be used to evaluate consistency of results.

本讲座将讨论使用旋转流变仪测试时, 样品加载过程对准确和重复性结果的重要性。介绍 Kinexus 旋转流变仪人性化的软件、硬件设计可以帮助我们实现样品加载过程一致性, 更重要的是提出“样品完整受力历史”新的流变测试理念, 使我们可以保存样品完整的受力历史。并举例说明怎样通过该方法确保测试结果的一致性。

Understanding the process of asphalt mixing & compaction

沥青混合压实工艺介绍

Rheology / 流变

2009-08-27

Mr. John Casola

A theoretical approach to understand the process mechanism of mixing & compaction of asphalt binders with aggregate for paving. The process mechanism revolves around the liquid asphalt's internal relaxation time which controls its ability to uniformly coat the particles as well as controls its ability to orient the particles for density.

从理论角度理解沥青胶结料的混合压实的机理。沥青的特征松弛时间决定了是否能将集料颗粒均匀的包裹和排列形成最大密度级配的能力。

2009 年 10 月

The role of Rheology in Extrusion Flow Simulation

流变学在挤出流动模拟中的应用

Rheology / 流变

2009-10-07

Don Leming, Ph.D, Fleming Polymer Testing and Consultancy

In this presentation, attendees will learn about the fundamentals of polymer melt rheology, and how from even a basic understanding, very real practical benefits can be realized and applied to everyday extrusion processes. In order to successfully exploit rheology we must ideally have a method of reproducing the deformations we see in our processes, to this end we use a rheometer. This course will focus on the capillary rheometer and how the important measurements of shear and elongational viscosity can be determined. The Talk will further show how these important parameters can be used to either simply distinguish materials or be used to simulate complex processes such as pipe (both mono and multilayer) and profile extrusion using the Compuplast Virtual Extrusion Laboratory

本讲座将向大家介绍聚合物熔体流变学基础，怎样将流变测试和挤出过程联系起来。为了更好的发挥流变学的作用，我们必须使用流变仪模拟挤出过程。该讲座会着重介绍使用毛细管流变仪测试剪切粘度和拉伸粘度的原理。还会介绍使用流变测试结果怎样区分不同的材料，怎样使用流变测试结果在 Compuplast Virtual Extrusion Laboratory 软件中模拟管材、型材挤出等复杂的加工过程。

Correlating Relative Viscosity with Traditional Kinematic Viscosity

相对粘度与传统的动力学粘度的相关性

Rheology / 流变

2009-10-28

Jason Sanchez, Ph.D

Traditional kinematic viscosity measurements have been a standard quality control analytical technique in the polymer industry for many years. This measurement is typically taken using a glass capillary viscometer, also known as an Ubbelohde tube. The accuracy and precision of this method is based on human analysis. A modern alternative to this traditional analytical technique is to measure relative viscosity using a fully automated dilute solution viscometer (DSV). This instrumentation removes the human element from the analysis, providing improved precision and accuracy. The relative viscosity data can be correlated back to the traditional kinematic values, providing a smooth transition from the bench-marks set by traditional quality control standard operating procedures in most industrial settings.

许多年以来，传统动力学粘度测试一直是高分子行业的标准的质量控制测试方法，该方法使用玻璃制的毛细管粘度计，也叫 U 型管，精确度很大程度上受到人为影响。现在测试相对粘度的方法是采用全自动稀溶液粘度计（DSV），避免了人为误差影响，提高了精度和准确性。相对粘度可以转换为传统的动力学粘度值，为工业标准测试提供了新方法。