



Dewetting as the key to surface QC: new Stood-up Drop method from KRÜSS

KRÜSS contact angle measuring instruments use a new dosing system to measure the retraction behavior of dosed drops in a matter of seconds. The method complements conventional contact angle methods and expands the application possibilities of wetting measurement for testing material surfaces.

Hamburg, September 2024 - Coatability, cleanliness, adhesiveness: many industrially relevant surface properties are directly or indirectly linked to wettability, which is therefore often tested as part of quality assurance. In contrast, *dewetting*, i.e. the contraction and possible run-off of the liquid from the material, has rarely been investigated to date. This is true even though dewetting behavior is particularly informative for many materials, such as hydrophobic and self-cleaning surfaces. Dewettability also reacts sensitively to material pretreatment and is therefore an ideal test criterion. The result relevant for dewetting is the so-called receding angle, a variant of the contact angle. The Hamburg-based measuring instrument manufacturer KRÜSS has now developed the Stood-up Drop for the optical measurement of this angle.

The new dosing unit for the Stood-up Drop places a drop of water on the sample with high, controlled dynamics. The liquid initially spreads out flat and then contracts at lightning speed to form a defined drop. A camera captures the drop in a video image, which is analyzed to determine the receding contact angle. The measured value is available within seconds.

Thanks to the speed of the Stood-up Drop, the receding angle, which was previously rather cumbersome to measure, can now be used for quality tests, even with large numbers of samples. In addition, the measuring sequence and dosing parameters are predefined, which ensures user-independent results. As the method does not use any harmful substances, it is also safer than using test inks whose areas of application overlap with those of the Stood-up Drop.

Measuring the receding angle has the potential to supplement or even replace other test methods for surfaces. In extensive preliminary investigations, the measured value showed good correlations with pretreatment parameters, such as for corona, plasma and flame treatments, but also with the results of common test methods. For example, prescreening with the receding angle has already reduced the amount of elaborate material testing in some applications. These include, for example, measurements of the *Moisture Vapor Transmission Rate (MVTR)* to quantify moisture protection and breathability.

The dosing unit for the Stood-up Drop is now available as an accessory for all KRÜSS Drop Shape Analyzer measuring instruments.

KRÜSS is offering a free, three-part webinar on the new Stood-up Drop method, which provides more in-depth information on the wide range of possible applications. Those interested can register at the following address:

visit.kruss-scientific.com/sud

Images



A Stood-up Drop reveals a lot about the dewetting of a surface

About KRÜSS

Advancing your Surface Science. As specialists in interfacial chemistry and the world's leading supplier of measuring instruments for surface and interfacial tension, we not only provide high quality product solutions – our offer is a combination of technology and scientific consulting. These include seminars and technical service as well as our Applications & Science Center for trainings and professional measurement services. Our exclusive distribution network and our locations in Hamburg (Germany), the US, China, and many more countries allow us to provide fast, flexible support for R&D labs and in quality control throughout the world. Our expertise, precision, and passion have already convinced many prestigious companies in countless industries.

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