



Press release: DataPhysics Instruments introduces new Portable Contact Angle Goniometer PCA 200 for precise determination of surface energy and surface cleanliness

DataPhysics Instruments Launches the Portable Contact Angle Goniometer PCA 200

DataPhysics Instruments has launched a world's first: the PCA 200 Portable Contact Angle Goniometer - a handheld, fully self-contained device for determining surface cleanliness and surface energy directly in manufacturing, on the production floor, or out in the field. Developed as an alternative to using traditional dyne pens for calculating surface energy in quality control and production, the PCA 200 enables the non-destructive testing of surfaces of any size, all in a size no larger than a typical digital camera.

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The scientific equipment manufacturer [DataPhysics Instruments](#) has expanded its product portfolio with the [Portable Contact Angle Goniometer PCA 200](#). The PCA 200 is a compact, self-contained measuring device that determines contact angles and surface energy at the touch of a button. 'The PCA 200 is a significant addition to our portfolio,' says Sebastian Schaubach, Chief Innovation Manager at DataPhysics Instruments. 'With the PCA 200, we can now offer a truly handheld device. Its compact design makes it the perfect companion for quality control of solid surfaces in production and incoming goods inspection.'

Alternative to Dyne Pens and Test Inks: Quantitative Analysis of Surface Properties

The measurement of surface energy has been established for characterizing the surface chemical properties of a solid substrate. The surface energy describes how easily a solid surface can be wetted. In the production and quality control of surfaces, dyne pens using test inks are often used for such wettability tests. However, using dyne pens, the wetting properties of solid surfaces can only be subjectively estimated.

Using the new PCA 200 Portable Contact Angle Goniometer, the surface energy can be very precisely determined using contact angle measurements with two test liquids. This measurement offers significant advantages over dyne pens: the procedure is objective, quantitative, reproducible and provides additional information, as the surface energy is divided into polar and dispersive components. This allows conclusions about whether the surface can be better wetted with aqueous or oil-based liquids, or how well a material can adhere to the surface.

Non-Destructive Testing of Large Surfaces Directly On-Site

In production and quality control, traditional laboratory measuring devices for precise, quantitative characterization of surfaces reach their limits when manufacturing parts are often too large or too heavy to easily transport to a laboratory for testing.

This highlights another major benefit of the PCA 200 Portable Contact Angle Goniometer: thanks to its compact design, the PCA 200 can determine the surface energy on large surfaces in a non-destructive manner. Thus, production parts such as car windshields, car body parts, large silicon wafers or advanced composite parts can be returned to production without being damaged after measurement with the PCA 200 and only simple cleaning.

Fits in Every Pocket: Self-Contained Measuring Device for Determining Surface Energy

The PCA 200 is completely self-contained and can be used wirelessly. With a powerful rechargeable battery, it is well-equipped for a full workday. In addition, each filling of the liquid cartridges is sufficient for over 1,000 measurements. Prior to measurement, the PCA 200 provides a live preview image of the surface on its integrated touchscreen display. This function allows a visual check to ensure that the measurement is being taken in exactly the right place.

The PCA 200 simultaneously dispenses both test liquids onto the surface. This makes it possible to determine the surface energy by pressing a single button, which increases the efficiency of work processes. After the measurement, the device displays the measurement results on the screen in a matter of seconds. This enables immediate evaluation of the coating quality or surface cleanliness right onsite. Sample identification is facilitated by the integrated barcode/QR code scanner or a numeric keypad on the touchscreen. Additionally, the device can be easily connected to a PC via a USB-C port. With its clear user-interface, accessible in any common web browser, device settings can be adjusted, and measurement results can be exported. DataPhysics Instruments also offers the expert software dpiMAX, a perfect complement for advanced analyses and systematic data management.

Background: Surface Energy in Detail

The surface energy makes it possible to precisely characterize the wetting behavior of a solid surface. A higher surface energy generally indicates better wetting and better adhesion. A high surface energy also indicates that the surface is well cleaned and free of grease, for example. Drops of liquid typically spread on such surfaces. Glass, ceramics and many metals are examples of materials whose surfaces naturally have a high surface energy.

A low surface energy indicates poor wetting and poorer adhesion. Drops of liquid lie spherically on such surfaces. Many plastics originally have a low surface energy before they are treated. Depending on the area of application, a high or low surface energy is desirable. Materials are easier to print on or stick to if they have a high surface energy. Bathroom ceramics or windscreens, on the other hand, should have the lowest possible surface energy so that liquid drops can roll off easily.

About DataPhysics Instruments GmbH

DataPhysics Instruments GmbH is a German company from the Stuttgart region. The company has been producing laboratory measuring devices used to analyze surfaces for over 25 years. The devices from DataPhysics Instruments can be used to determine important physical and chemical parameters such as surface tension and surface energy, adhesion force, static and dynamic contact angles, roughness profiles, zeta potential, and destabilization mechanisms.

In short, the devices from DataPhysics Instruments are used wherever a liquid meets another liquid or a solid surface. In addition to contact angle measuring devices, the product portfolio includes tensiometers, spinning drop tensiometers, dispersion stability analysis systems, zeta potential analyzers, and humidity generators. The company also offers contract measurements in all these areas.

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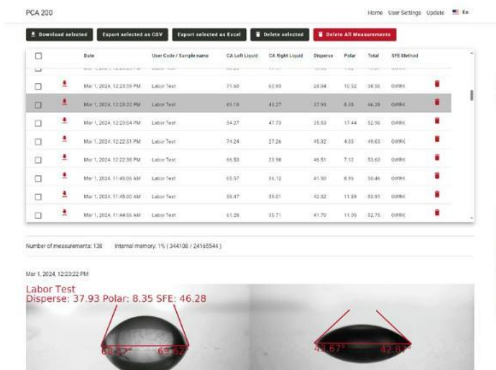
Picture 1: The Portable Contact Angle Goniometer PCA 200 is ideal for quality control during the production process. With a PCA 200, the surface energy can be measured quickly and a coating or cleaning process can be checked within seconds.

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Picture 2: The PCA 200's integrated touchscreen makes it easy to control measurements and display the results.

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Picture 3: Measurement data can be exported, and device settings changed in the browser-based, easy-to-use interface.

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