

## **Area Measurement of Colloids and Emulsions using a Novel NMR Technique**

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The surface area of particles is an important parameter which influences the properties of materials and products. Traditionally surface area measurements have been made on dry powders using a gas adsorption technique which usually takes several hours to complete and is unsuitable for emulsions and colloidal suspensions. A new technique for surface area measurement based on Nuclear Magnetic Resonance (NMR) which can be used to measure the surface area of particulates dispersed into liquid giving a truer idea of the particle properties in actual use. The new technique is both quick – results are available in typically 5 minutes – and easy to use with no expensive gases, liquid nitrogen etc required. The Acorn Area instrument utilises this new, patented technique to provide reliable surface area data together with volume fraction.

Based on the fact that liquid in contact with, or bound to, the particle surface behaves differently from the bulk liquid, the Acorn Area measures the NMR relaxation time of the bound and free liquid from which the surface area can be calculated. The sample size required is typically 0.1 ml. Comparisons with conventional techniques for samples such as Klebasol are given.