**Poster Presentation**

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*Particle sizing and counting with accurate SAXS measurements*

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Small Angle X-Ray Scattering (SAXS)[1] is a technique well suited for investigating the structure of materials in the range from 1 to beyond 100 nm. The technique gives information on sample structure parameters such as shape or size, size distribution, orientation and anisotropy, surface to volume ratio. X-ray radiation enables to penetrate sample and typically probes a sample volume from 0.1-1 mm3. The information on structure is therefore obtained from inside the sample and is statistically representative of the sample volume probed. Furthermore, little sample preparation is needed and the technique is non-destructive. Developments in instrumentation (sources and detection) enable to observe fast changes in the sample as a function of parameters such as (but not limited to) temperature. The capability of laboratory based solutions for characterization at the nano-scale is recognized in the ISO standard currently being drafted [2] on measurement of particle size. We will show different examples of particle sizing and size-distribution measurements with SAXS, including particle/matrix with low electronic contrast and poly-dispersity studies. Comparisons will be done with alternative methods such as light scattering techniques. Stable and accurate measurement of incident and scattering intensity offers capability for particle sizing, further it allows for counting or surface to volume ratio determination providing valuable information in industrial applications such as nanoparticle sizes quantification in complex matrix (automotive) or nano porous material structure characterization for catalysts as few examples.

***[1]** A. Guinier, G. Fournet, C. Walker, and K. Yudowitch. Small-Angle Scattering of X-rays . John Wiley and Sons, Inc., 1955,* ***[2]** DIS ISO/NP 17867 prepared by committee ISO/TC24/SC4/*

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