

MICROTRAC

MEB

PARTICLE CHARACTERIZATION

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Particle size and zeta potential measurement of ink samples with the Nanotracs series at high and low concentration

Introduction

Microtrac Dynamic Light Scattering (DLS) instruments of the Nanotracs series are perfectly suitable for measuring the particle size of pigment suspensions used in printers. One big advantage is that measurements can be performed at high concentrations to avoid effects of dilution on dispersion.

Printing and writing have involved the use of color or black materials contained in various vehicles since the time of cavemen. The first pigment believed to be used was probably lampblack dating back as long as 4000 -5000 years. Modern printing inks contain many components each having a specific purpose in maintaining color, intensity, dispersion, viscosity, as well as acting as a milling aide.

Approximately 50% of the cost of inkjet ink is due to the coloring agent. The colorant can be of two types: pigment or dye. Dyes are very small molecules below 1 nm in size, which are usually considered to be in complete solution. Pigments are larger particles and in suspension (not solution). These may be either organic or inorganic in chemical composition. The type of black pigment used in the past was spinel, rutile, or iron. These have been substituted mostly by carbon black.

