

Droplet Formation and Physical Characterization of Powder Suspensions

*Sarojini Deevi
Philip Morris, USA
Richmond, Virginia*

Abstract

Although the market for digital printing is expanding at a phenomenal pace, there have been no developments to enable printing digitally using metallic inks. While there are several challenges in meeting this objective, the major challenges are with respect to the formulation of stable suspensions using the highly dense metallic pigments, and the lack of a printhead that is capable of jetting these suspensions. In order to develop metallic inks for digital printing, an in-depth understanding of the behavior of powdered materials in suspension is required. The present paper describes the formulation of experimental suspensions, and the characterization of their physical properties such as viscosity, and surface tension. The experimental results on the jettability of some of these suspensions and their drop formation characteristics will be described. This

will help in the evaluation of these types of suspensions for ink jet printing.

Biography

Sarojini Deevi obtained her Ph. D. in materials science from the Indian Institute of Science, Bangalore, India, in 1984. Her thesis work involved thermal and mechanistic studies of elastomeric composites containing particulate materials. Her postdoctoral work in the University of California at Davis was in the combustion synthesis of industrially important nitride materials and their characterization. She was involved in the synthesis of carbides and nitrides by the fluidized bed process for the development of powders with specific characteristics. Presently her interests include digital printing materials and techniques.