

Characterization of toner particles prepared at various polymerization conditions

박준기, 안성호, 유재광¹, 김덕응¹, 김대수*
충북대학교; ¹(주)파켄오피씨
(dskim@chungbuk.ac.kr*)

Polymerized toners are being developed to solve the problems of pulverized toner and make high-speed and high-quality color laser printing possible. In this study, Styrene based polymerized toner was prepared using an inorganic suspending system composed of calcium chloride and trisodium phosphate. ADVN and DVB were used as an initiator and a crosslinking agent. High-quality image would be obtained when toners have a very small particle size within a narrow size distribution. To obtain the small particle size and a particle having a uniform particle size distribution, a syringe was used to form the droplet. Quantity of the inorganic suspending agent and rotating speed affected largely the shape of polymerized toner particles. Moreover, the polymerization of toner particles was considerably affected by pH and injection rate of oil phase. The effects of the inorganic suspending agent, rotating speed, injection rate and pH of the water phase on the characteristics of the polymerized toner were elucidated. High-quality polymerized toner could be prepared using the inorganic suspending system.