

### Recrystallization of polystyrene using the carbon dioxide as an anti solvent

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Polystyrene is able to be used as a source for toner when its particle size is about 5 $\mu$ m. The object of this study is to find out the condition which produced particles having about 5 $\mu$ m. DCM (dichloromethane) and toluene were used as a solvent for the polystyrene while CO<sub>2</sub> was used as an anti solvent. To find it initial temperatures were ranged from 32 °C to 50 °C with 5°C increment and pressures were ranged from 100bar to 250bar with 50bar increment. Polystyrene initial concentrations in DCM and toluene were varied from 0.3wt% to 2wt%. Solution injection rates were varied from 0.2ml/min to 2ml/min to investigate the effect on particles by relative ratio of L-PLA solution and CO<sub>2</sub>. The polystyrene row materials were tabular habit and its size were varied from 3.0mm to 1.5cm. After SAS process, the particles were analyzed by a SEM (scanning electron microscope) and PSA (laser diffraction particle size analyzer).