

Charge Decay Properties of Meltblown Polylactic Acid (PLA) Fabrics

Peter P. Tsai
The University of Tennessee
USA

Yurong Yan
South China University of Technology
P.R. China

Abstract

We have shown that PLA polymers have good processability in meltblowing (MB) line. We have also investigated that MB PLA fabrics can be well electrostatically charged and have good charge retention life at room temperature or at 45C for a lengthy period of time. However, PLA is a polyester, that has some degree, e.g., 0.4% for PET, of moisture content, that contributes to a charge decay. This paper will further study how the charge retention life of a PLA MB fabric is affected by the environmental humidity and by the combination of temperature and humidity. MB PLA fabrics shrank at 70C in our first study. We will study the thermal stability of the MB PLA fabrics at different temperature and humidities.