

Latex migration during drying of Li-ion battery slurry

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Latex has been used to enhance performance of a film in a variety of industrial. However, many problems such as crack, delamination heterogeneous particle distribution in film have been encountered during manufacturing process like coating and drying. In this study, we focused on the mechanism of latex migration of Li-ion battery slurry during drying using fluorescence microscopy. SBR latex which is one of the compositions of battery slurry plays a vital role to improve binding force, heat resistance and flexibility of the film. The fluorescent polystyrene particles were used as model particles for SBR latex. The laser was irradiated to the coating, and a fluorescence intensity emitted from the fluorescent PS particle in the coating was detected by CCD color camera. The development of fluorescence intensity represented the latex migration during drying. The latex migration, in addition, was influenced by the drying temperature and concentration of CMC in the slurry. The mechanism of latex migration of battery slurry depending on the drying temperature and the concentration of CMC will be debated in this presentation.