# Effects of the capillary force on the low-speed blade coating system

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Blade coating is one of the simplest methods to apply a uniformly thin liquid film on moving substrate, where an excess of the coating liquid is metered by a narrow channel formed between a blade and the substrate. Previous researches have been explored the effects of operating conditions and physical parameters to a wet film thickness by a simple lubrication model, but they ignored the capillary force around the gas-liquid interface. The hydrodynamic model without considering of surface tension is adequate for commercial high-speed blade coating where the viscous force is dominant. However, the model cannot describe the low-speed blade coating system in which the capillary force and the viscous force compete with comparable order of magnitudes. In the present study, we attempt to analyze the impact of the capillary force around the gas-liquid interface on the low-speed blade coating process by the theoretical approach.