

Coating windows and frequency response for non-Newtonian fluids in slot coating flow

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Coating windows and sensitivity for both Newtonian and Non-Newtonian fluids in slot coating flow have been investigated using 1D/2D simulations and experiments. This theoretical and experimental approaches are very important to establish stable coating conditions by effectively controlling the unexpected disturbances. Coating windows have been constructed by checking the position of upstream meniscus of coating liquids in coating bead regime and sensitivity analysis has been carried out using frequency response method, which measures the amplitude of state variables with respect to the sinusoidal disturbances at flow rate, web speed, bead pressure, etc.