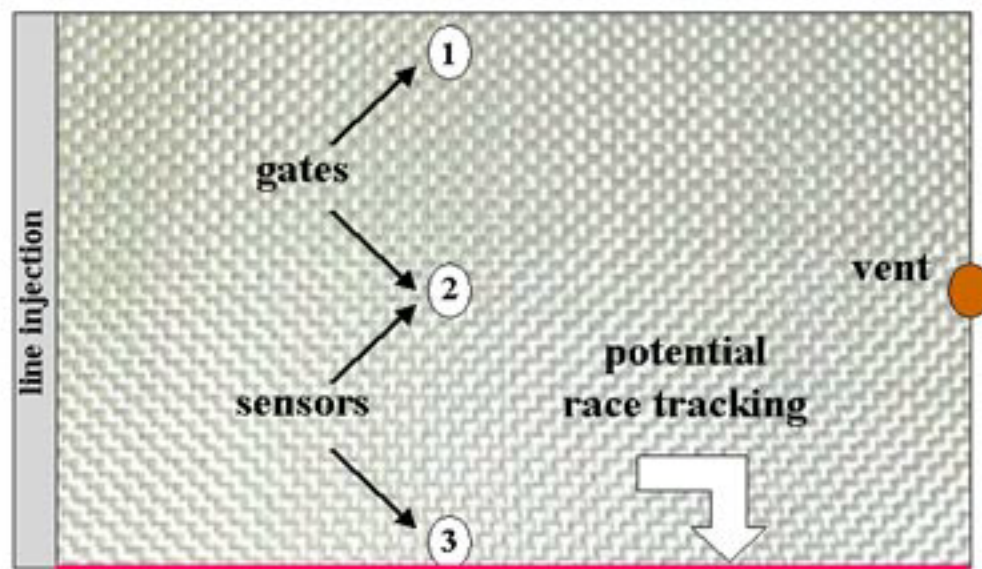


CONTROL STRATEGY FOR CORRECTING A RANGE OF LEVELS OF RACE TRACKING

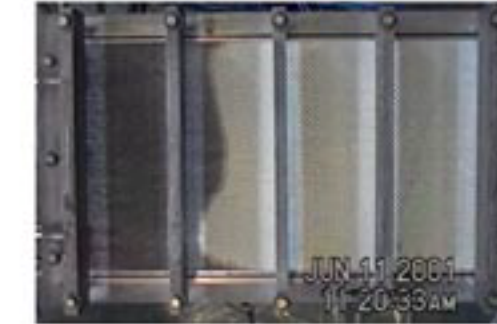
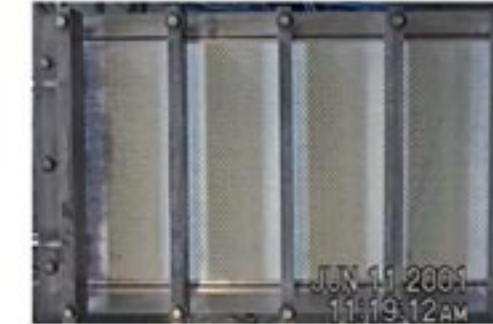
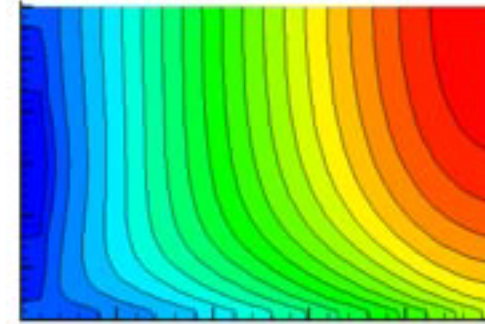
Jeffrey M. Lawrence and Suresh G. Advani

University of Delaware . Center for Composite Materials

Schematic of Mold Configuration



No Control



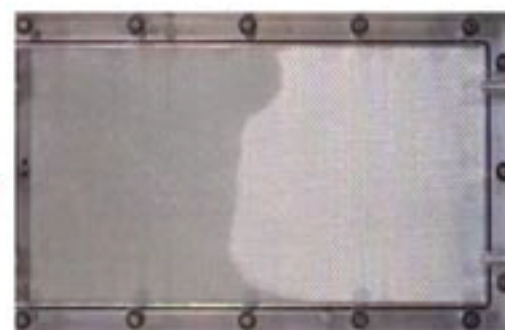
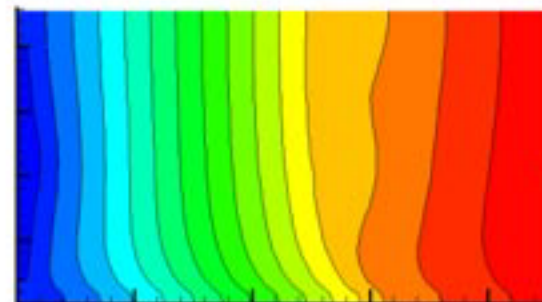
dry spot

Control Strategy

- The experiment continues until the resin has reached both sensors 2 & 3 (t_2 & t_3)
- The time difference between resin arrival is calculated (Δt)
- The strength of the race tracking is calculated (K_{race}/K_{bulk})
- The new flow rate ratio is calculated (Q_1/Q_2)
- The line injection is shut off, and injection resumes from gates 1 & 2 at calculated flow rates

$$t_2, t_3 \rightarrow \Delta t \rightarrow \frac{K_{race}}{K_{bulk}} \rightarrow \frac{Q_1^{new}}{Q_2^{new}}$$

Control



no dry spot

*