of each actuator according to one of a plurality of discrete settings for operation of the slot die. The controller is further configured to predict a set of discrete settings from the plurality of discrete settings corresponding to a preselected cross-web profile for an extrudate based on a known correlation between the set of discrete settings and the cross-web profile of the extrudate, wherein predicting the set of discrete settings from the plurality of discrete settings corresponding to the preselected cross-web profile for the extrudate comprises using fluid dynamics and a digital model of the die incorporating parameters of die dimensions and fluid rheology, to predict the set of discrete settings from the plurality of discrete settings; and wherein using fluid dynamics and the digital model of the die to predict the set of discrete settings from the plurality of discrete settings corresponding to the preselected cross-web profile for the extrudate comprises: separately modeling fluid flow at each actuator and determining position adjustments for each actuator based on the modeled fluid flow associated with that actuator.

[0010] In another example, this disclosure is directed to a non-transitory computer readable medium storing executable instructions configured to cause a programmable controller to operate a slot die. The slot die includes an applicator slot extending about a width of the slot die, wherein the applicator slot is in fluid communication with a fluid flow path through the slot die, and a plurality of actuators spaced about the width of the slot die. Each actuator in the plurality of actuators is operable to adjust a cross-directional thickness of the fluid flow path at its respective location to provide a local adjustment of fluid flow through the applicator slot. The executable instructions are configured to cause the programmable controller to predict a set of discrete settings from a plurality of discrete settings corresponding to a preselected cross-web profile for an extrudate based on a known correlation between the set of discrete settings and the cross-web profile of the extrudate, and set the position of each actuator according to the predicted set of discrete settings for operation of the slot die, wherein predicting the set of discrete settings from the plurality of discrete settings corresponding to the preselected cross-web profile for the extrudate comprises using fluid dynamics and a digital model of the die incorporating parameters of die dimensions and fluid rheology, to predict the set of discrete settings from the plurality of discrete settings; and wherein

using fluid dynamics and the digital model of the die to predict the set of discrete settings from the plurality of discrete settings corresponding to the preselected cross-web profile for the extrudate comprises: separately modeling fluid flow at each actuator and determining position adjustments for each actuator based on the modeled fluid flow associated with that actuator.

[0011] In a further example, this disclosure is directed to a method of operating a slot die, wherein the slot die includes an applicator slot extending about a width of the slot die, wherein the applicator slot is in fluid communication with a fluid flow path through the slot die, and a plurality of actuators spaced about the width of the slot die. Each actuator in the plurality of actuators is operable to adjust a cross-directional thickness of the fluid flow path at its respective location to provide a local adjustment of fluid flow through the applicator slot. The method comprises predicting, with a controller, a set of discrete settings from a plurality of discrete settings corresponding to a preselected cross-web profile for an extrudate based on a known correlation between the set of discrete settings and the cross-web profile of the extrudate, and setting the position of each actuator according to the predicted set of discrete settings for operation of the slot die, wherein predicting the set of discrete settings from the plurality of discrete settings corresponding to the preselected cross-web profile for the extrudate comprises using fluid dynamics and a digital model of the die incorporating parameters of die dimensions and fluid rheology, to predict the set of discrete settings from the plurality of discrete settings; and wherein using fluid dynamics and the digital model of the die to predict the set of discrete settings from the plurality of discrete settings corresponding to the preselected cross-web profile for the extrudate comprises: separately modeling fluid flow at each actuator and determining position adjustments for each actuator based on the modeled fluid flow associated with that actuator.

[0012] The details of one or more examples of this disclosure are set forth in the accompanying drawings and the description below. Other features, objects, and