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(54) Title: HYBRID PREDICTIVE MODELING FOR CONTROL OF CELL CULTURE

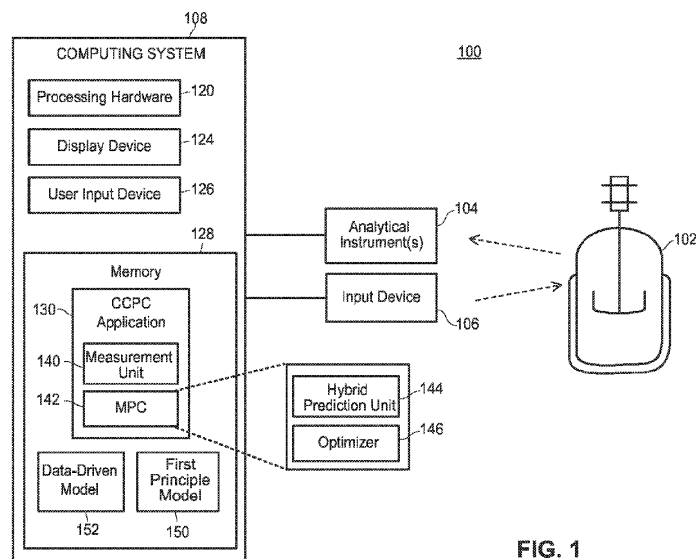


FIG. 1

(57) **Abstract:** A method of controlling a cell culture process uses hybrid predictive modeling in a model predictive controller. The method includes, for multiple time intervals, obtaining current values of cell culture attributes associated, and generating a control value for a physical input to the cell culture process. Generating the control value includes predicting future values of the cell culture attributes based on the current values, by using one or more data-driven models to predict future values of a first one or more attributes of the cell culture attributes, and using one or more first principle models to predict future values of a second one or more attributes of the cell culture attributes. Generating the control value also includes determining the control value by optimizing an objective function subject to the predicted future values. The method also includes using the control value to control the physical input to the cell culture process.

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