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(54) Title: COMPUTER SURROGATE MODEL TO PREDICT THE SINGLE-PHASE MIXING QUALITY IN STEADY STATE MIXING TANKS

(57) Abstract: Systems and methods of using a surrogate machine learning model, based on a CFD model, to predict the mixing quality in steady state mixing tanks are provided. An exemplary method includes generating a plurality of training CFD models for a plurality of training steady state mixing configurations based on a plurality of steady state mixing factors associated with each training steady state mixing configuration; calculating a mixing quality for each training steady state mixing configuration using each respective training CFD model; generating a training dataset that includes the steady state mixing factors associated with each training steady state mixing configuration, and the calculated mixing quality for each training steady state mixing configuration; and training a machine learning model, using the training dataset, to predict mixing qualities for steady state mixing configurations based on based on steady state mixing factors associated with the steady state mixing configurations.

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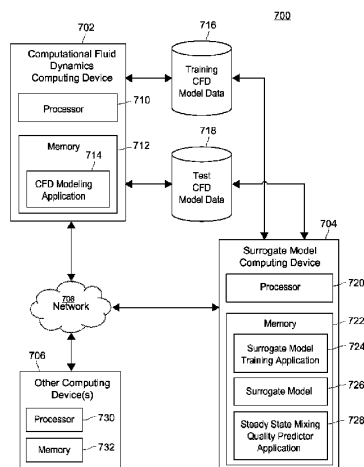


FIG. 7