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(54) Title: METHOD AND PROCESS OF IMPLEMENTING MACHINE LEARNING IN COMPLEX MULTIVARIATE WAFER PROCESSING EQUIPMENT

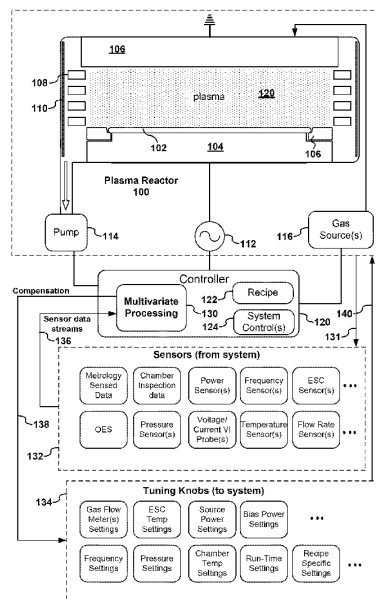


FIG. 1

(57) Abstract: Methods and systems for controlling processing state of a plasma reactor to initiate processing of production substrates. The method initiate processing of a substrate in the plasma reactor using settings for tuning knobs of the plasma reactor that are approximated to achieve desired processing state values. A plurality of data streams are received and are used to identify current processing state values. The method includes generating a compensation vector that identifies differences between the current processing state values and the desired processing state values. The generation of the compensation vector uses machine learning to improve and refine the identification and amount of compensation needed, as identified in the compensation vector. The method further includes transforming the compensation vector into adjustments to the settings for the tuning knobs and then applying the adjustment to the tuning knobs of the plasma reactor.

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