DETERMINATION OF RECIPES FOR MANUFACTURING SEMICONDUCTOR DEVICES

CLAIM OF PRIORITY

[0001] This application claims priority from U.S. Provisional Patent Application No. 62/925,157, filed October 23, 2019, and entitled "Determination of Recipe for Manufacturing Semiconductor." This provisional application is herein incorporated by reference in its entirety.

RELATED APPLICATION

[0002] This application is related to U.S. Patent Application No. 16/260,870, filed January 29, 2019, and entitled "Fill Process Optimization Using Feature Scale Modeling," which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0003] The subject matter disclosed herein generally relates to methods, systems, and machine-readable storage media for manufacturing semiconductors.

BACKGROUND

[0004] The background description provided herein is for the purposes of generally presenting the context of the disclosure. Work of the presently named inventors, to the extent it is described in this background section, as well as aspects of the description that may not otherwise qualify as prior art at the time of filing, are neither expressly nor impliedly admitted as prior art against the present disclosure.

[0005] Chemical reactors used in deposition process development of semiconductors chips tend to have many interdependent sub-systems (e.g., sensors, actuators, gas feeds, power sources, matching networks). These sub-systems are controlled independently by process parameters that follow a set of instructions included in a recipe for a control system. The behavior of these sub-systems collectively determines the output performance on a product wafer.

[0006] The increasing complexity of modern process equipment means that the number of components in the system increases to manage this complexity, thereby increasing the number of process "knobs" (e.g., adjustable processing