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(54) Title: PRODUCING A POLYETHYLENE POLYMER

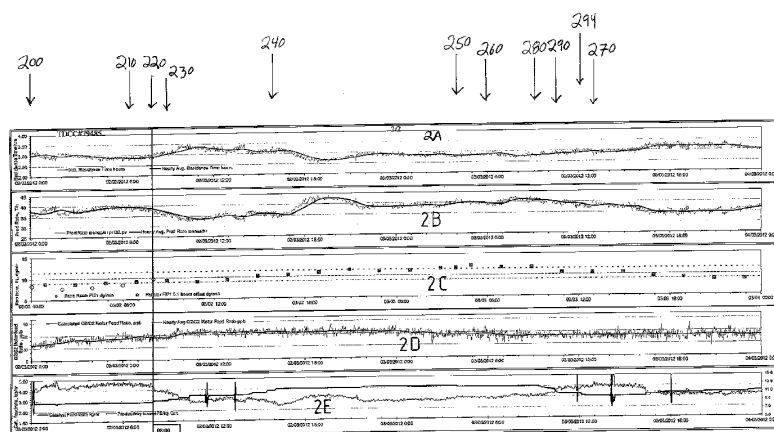


FIG. 2A-2E

(57) Abstract: The present disclosure provides for a system and method for producing a polyethylene polymer (PE) that includes measuring a melt flow index (MFI) of the PE, comparing the measured value of the MFI to a predetermined desired range for the MFI, changing a catalyst feed rate to the polymerization reactor based on the compared values of the MFI, where changes in the catalyst feed rate preemptively compensate for subsequent changes in an oxygen flow rate to the polymerization reactor that maintain a predetermined residence time and bring the MFI of the PE into the predetermined desired range for the MFI; and changing the oxygen flow rate to the polymerization reactor thereby maintaining both the predetermined residence time and bringing the MFI of the PE into the predetermined desired range for the MFI. The measuring and comparing steps are repeated to ensure the measured value of the MFI is within the predetermined desired range of the MFI at the predetermined residence time.

[Continued on next page]

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