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(54) Title: A SYSTEM AND METHOD FOR MASS FLOW MEASUREMENT AND CONTROL OF PROCESS GASES IN A
CARRIER STREAM USING ONE OR MORE QUARTZ CRYSTAL MICROBALANCE SENSORS

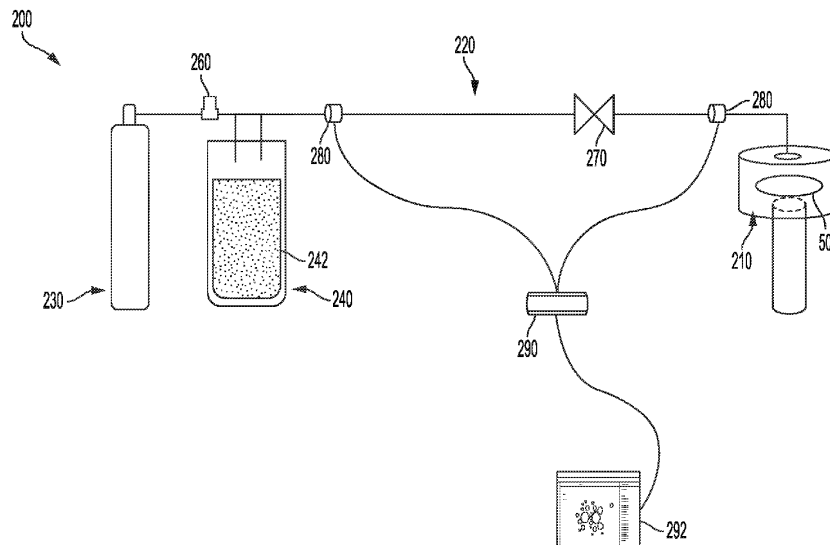


FIG. 2

(57) Abstract: A method for monitoring precursor material in a carrier stream of a fabrication system comprises depositing a film of precursor material on a surface of a QCM sensor and determining a starting resonance frequency of the QCM sensor with the deposited film of precursor material. The resonance frequency of the QCM sensor is measured during operation of the fabrication system and compared with the starting resonance frequency. A system error is issued when the measured resonance frequency differs from the corresponding starting resonance frequency by more than a threshold value. A system correction is automatically implemented and configured to restore the QCM sensor to the starting resonance frequency.

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