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(54) Title: MULTIVARIATE SPECTRAL ANALYSIS AND MONITORING OF BIOMANUFACTURING

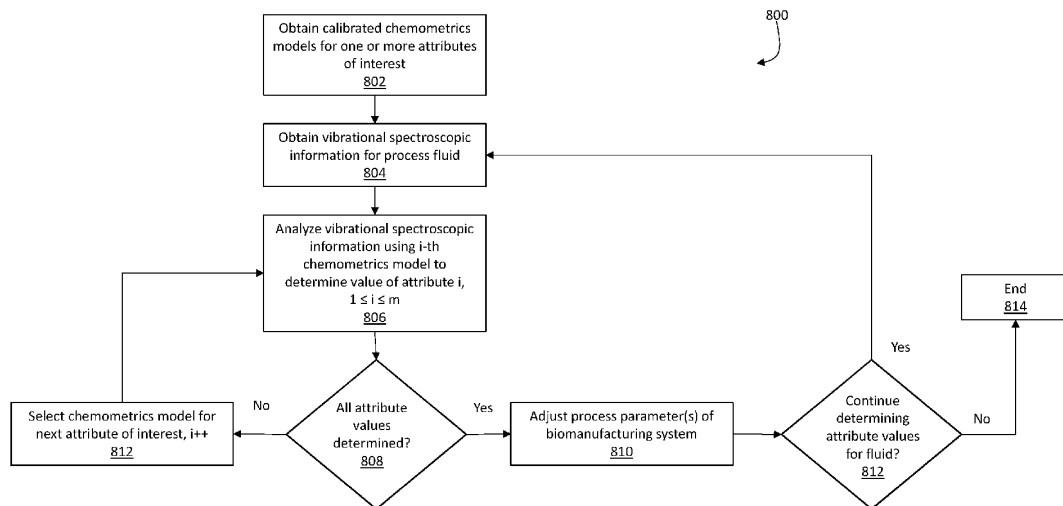


FIG. 8

(57) Abstract: The disclosure features methods that include obtaining a vibrational spectrum (804) of a solution in a biological manufacturing system, analyzing the vibrational spectrum (806) using a first chemometrics model to determine a value of a first quality attribute associated with the solution, analyzing the vibrational spectrum (806) using a second chemometrics model to determine a value of a second quality attribute (812) associated with the solution, and adjusting at least one parameter (810) of a purification unit of the biological manufacturing system based on at least one of the values of the first and second quality attributes.

[Continued on next page]

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