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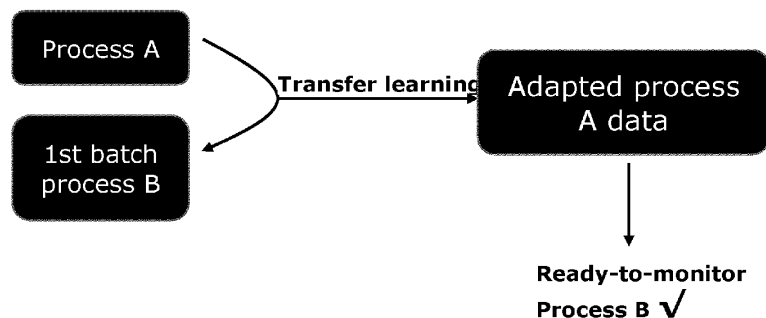


Figure 2

(57) **Abstract:** A method and a system for calibrating at least one software-based regression model used for optimizing sensor data of a Raman Spectroscopy Instrument used for measuring a target bioprocess wherein the at least one software-based regression model is run by a computer, comprising the following steps of Acquiring at least one batch of Raman spectra data of both an initial Raman-monitored bioprocess and the target bioprocess associated with off-line reference values for all required bioprocess parameters and conditions; Creating an optimized software-based model for the target bioprocess adapted for every monitored bioprocess parameter by using dimensionality reduction techniques and applying a machine-learning transfer-algorithm on the Raman spectra data and the off-line reference values of the initial bioprocess and the target bioprocess via the computer; and Using the optimized software-based models in the Raman spectrometry instrument for monitoring the target bioprocess.

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