

Title (en)

OPEN-LOOP/CLOSED-LOOP PROCESS CONTROL ON THE BASIS OF A SPECTROSCOPIC DETERMINATION OF UNDETERMINED SUBSTANCE CONCENTRATIONS

Title (de)

PROZESSSTEUERUNG/-REGELUNG AUF BASIS EINER SPEKTROSKOPISCHEN BESTIMMUNG UNBESTIMMTER SUBSTANZKONZENTRATIONEN

Title (fr)

COMMANDE DE PROCESSUS EN BOUCLE OUVERTE/BOUCLE FERMÉE SUR LA BASE D'UNE DÉTERMINATION SPECTROSCOPIQUE DE CONCENTRATIONS DE SUBSTANCES NON DÉTERMINÉES

Publication

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Application

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Abstract (en)

[origin: WO2021204450A1] The invention relates to a method for the open-loop or closed-loop control of a process (3), more particularly a downstream bioprocess, on the basis of the prediction of an unknown concentration of at least one substance in a sample (5a, 5b) by means of spectroscopy, more particularly UV-vis spectroscopy, comprising the steps of: capturing (101) spectra (1) of a plurality of concentration samples, at least two concentration samples having different concentrations of the substance; generating (102) a plurality of quantitative models (M) on the basis of the spectra of the concentration samples, the models (M) each comprising an association between at least one spectral measurement variable (2) of the spectra (1) and concentrations in concentration ranges, the concentration ranges of two models (M) being non-identical; capturing (103) at least one sample spectrum (1; 1a, 1b) of the sample (5a, 5b); assigning (104) the sample spectrum (1; 1a, 1b) to at least one quantitative model (M) of the generated quantitative models (M); applying (105) the at least one quantitative model (M) assigned to the sample spectrum (1; 1a, 1b) to the sample spectrum (1; 1a, 1b) in order to determine a prediction value for the undetermined concentration; and open-loop and/or closed-loop control (108) of the process (3) with respect to at least one parameter on the basis of the prediction value for the undetermined concentration.

IPC 8 full level

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Citation (search report)

See references of WO 2021204450A1

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