Tab. 1: The chosen independent variables and their intervals

Label	Independent variables		-1	+1
X_1	T	temperature [°C]	30	65
X_2	w	amount of water* [-]	0.75	1.25
X_3	$acid$	concentration of acid [mol/l]	0	0.66
X_4	ω	intensity of stirring [rpm]	715	2160
X_5	t_{mix}	time of stirring** [min]	-1	+1
X_6	rp	repetition of stirring*** [-]	-1	+1
X_7	t_{sed}	time of sedimentation [h]	0.5	24

* Amount of water: Lower limit (0.75) means 75 % and upper limit (1.25) means 125 % of optimal amount of water needed for the maximum transmission of RRM at 570 nm (see beginning of this chapter).

** Time of stirring after addition of water. Lower limit (-1) means that the mixture is stirred until constant value of absorbance. Upper limit (+1) means that the mixture is stirred twice as long.

*** Repetition of stirring: Lower limit (-1, without repetition) means that the sedimentation was analyzed after stoppage of stirring (Fig. 1). The upper limit (+1, with repetition) means that the stirrer was stopped after 20 minutes. After this time, the mixture was stirred again for 5 min and then the sedimentation started (Fig. 2).

Tab. 2: *Detailed plan of experiments for independent variables according to Plackett-Burman*

number of experiment	T [°C]	w [-]	$acid$ [mol/l]	ω [rpm]	t_{mix} [min]	rp[-]	t_{sed} [h]
1	65	1.25	0.66	715	+1	-1	0.5
2	30	0.75	0.66	2160	-1	+1	0.5
3	30	0.75	0.66	2160	+1	-1	24
4	65	1.25	0	2160	+1	+1	0.5
5	30	0.75	0	715	+1	+1	24
6	65	1.25	0.66	715	-1	+1	24
7	65	1.25	0	2160	-1	-1	24
8	30	0.75	0	715	-1	-1	0.5

Tab. 3: *Verification of model: chosen and calculated variables*

chosen variables	T [°C]	Y_1 [g/g]	*acid* [mol/l]	Y_3 [hm.%]	*rp* [-]	t_{sed} [h]	Y_7 [mg/kg]
	30	0.168	no	17.44	no	24	40.0
calculated variables	t_{mix} [min]	w [-]	Y_2 [hm.%]	ω [rpm]	Y_4 [g/g]	Y_5 [mg/g]	Y_6 [hm.%]
	0.21	1.0	1.01	715	0.832	0.35	0.071

Tab. 4: *Verification of model*: c*omparison of prediction and experimental values*

value	Y_1 [g/g]	Y_2 [hm.%]	Y_3 [hm.%]	Y_4 [g/g]	Y_5 [mg/g]	Y_6 [hm.%]	Y_7 [mg/kg]
pred.	0.168	1.01	17.44	0.832	0.35	40	0.071
exper.	0.162	1.10	17.29	0.838	0.20	36	0.065
corr. [%]	103.7	91.6	100.9	99.3	177.9	110.3	109.4