

## Results of 'Design a batch' main function

The results are presented in a window (Figure 1) with an extended menu bar, followed by the results table containing the batch properties and in the lower part can be found a comparison of the model and batch particle size distributions.

Material	Vol%	Mass%	Density g/cc	SSA m2/g	Price per MT
T60_3000-1000	43.51	42.59	3.645	NA	NA
T60_1000-500	7.21	7.12	3.678	NA	NA
T60_500-0	49.28	50.29	3.8	NA	NA
Batch:	100	100	3.7239	NA	NA
d(CPFT) of batch:	d(10%) = 143.35 um	d(25%) = 335.9 um	d(50%) = 692.17 um	d(75%) = 2004.25 um	d(90%) = 2706.4 um
Fit quality:	Cor. coeff. =	0.9936			Fine-Tuning in Ma%
	Sum sq. dev. =	541.5	Open/close plot	Model info	Fine-Tuning in Vol%

Figure 1: Results window

The menu item 'Save' gives the user the possibilities to save the...

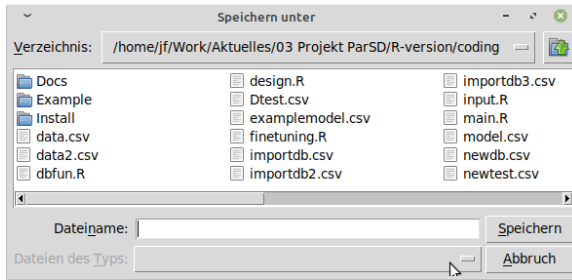
- Recipe, which is a subset database containing the materials used for the present calculation. Has to be saved as CSV file in the Save-As window (Figure 2(a)).
- Batch, which is the table shown in the results window giving the contents of the materials. Has to be saved as CSV file in the Save-As window (Figure 2(a)).
- Model/Comparison, which is the lower part of the results-window including information to the model (type and parameters). Has to be saved as CSV file in the Save-As window (Figure 2(a)).
- Graph, as adjusted and displayed by the 'Open/close plot' button. Has to be saved as PNG file in the Save-As window (Figure 2(a)).
- complete results (recipe, batch, model/comparison & plot). In this case, a folder will be created into which the four files will be put. The user is, thus, asked to give the parent folder into which the new results folder should be placed (Figure 2(b)) and then to give a name for the results folder (Figure 2(c)). If a folder with this name already exists, the user is informed but can decide to overwrite the contents (Figure 2(d)).

Coming to the results table (cf. Figure 1), there the materials with their contents in vol% and wt% in the batch are listed together with information from the database if saved there. The last line shows the batch properties which contains obviously 100 vol% and wt%, but the line contains also the calculable (true) batch density, its specific surface area and the costs. Subsequently, for the batch the describing d(CPFT) values are given to summarize the properties of the batch particle size distribution.

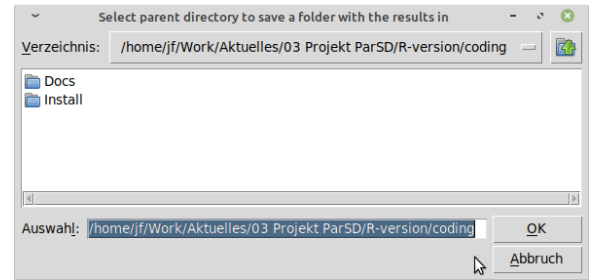
In the lower part of the results window (Figure 1), the quality of the fit is evaluated. The user can evaluate it visually by plotting the CPFT curves (Figure 3).

The quality of the fit is described by two numbers. Firstly, by the correlation coefficient ( $\leq 1$ ) for the correlation between the batch-CPFT(d) values and model-CPFT(d) values for which '1' would describe a perfect fit. The second value is the sum of the squared deviations of the batch-CPFT(d) from the model-CPFT(d) for all component sizes d. Furthermore, the model information (type and parameters) can be presented (Figure 4) by clicking on the button 'Model info'.

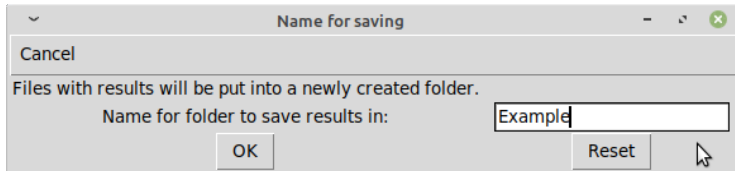
Further-on, the two fine-tuning buttons lead the user to results dialogs with (1) more information presented and (2) with the possibility to re-adjust either the vol% or wt% values and re-calculate the fit for the new parameters. By this for example differing accuracies for different raw material types (aggregates, additives, ...) can be adjusted.



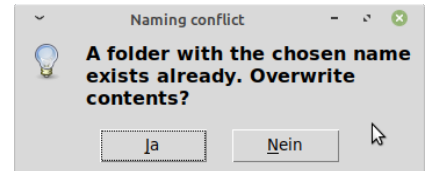
(a) Save-as dialog



(b) Select parent directory



(c) Name results-folder



(d) Select parent directory

Figure 2: Save results

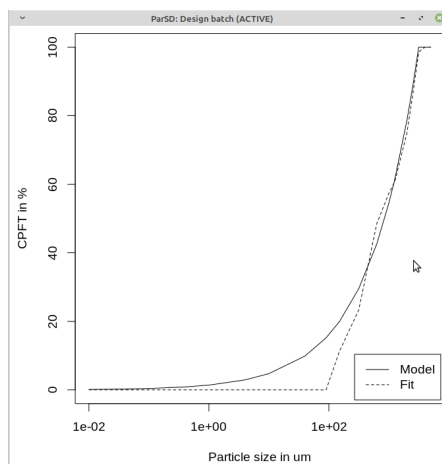


Figure 3: Plot results

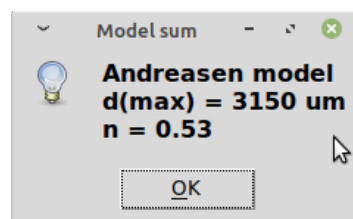


Figure 4: Model info