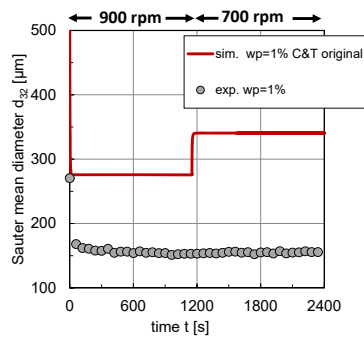


## Supplementary material



**Figure S1.** Comparison experimental and simulated transient Sauter mean diameters for  $w_p = 1\%$ . Simulations were performed with the original (unmodified) C&T submodels and the free parameters summarised in Table 1. The impact of the particles on density and viscosity is considered in the simulations with  $\eta_c = 1.72 \text{ mPas}$  and  $\rho_d = 1003.88 \text{ kg/m}^3$ .