Supplementary Material

Dynamic-mechanical thermoanalysis test as a high-performance alternative for accelerated freeze-thaw stability testing: A case study of O/W emulsions

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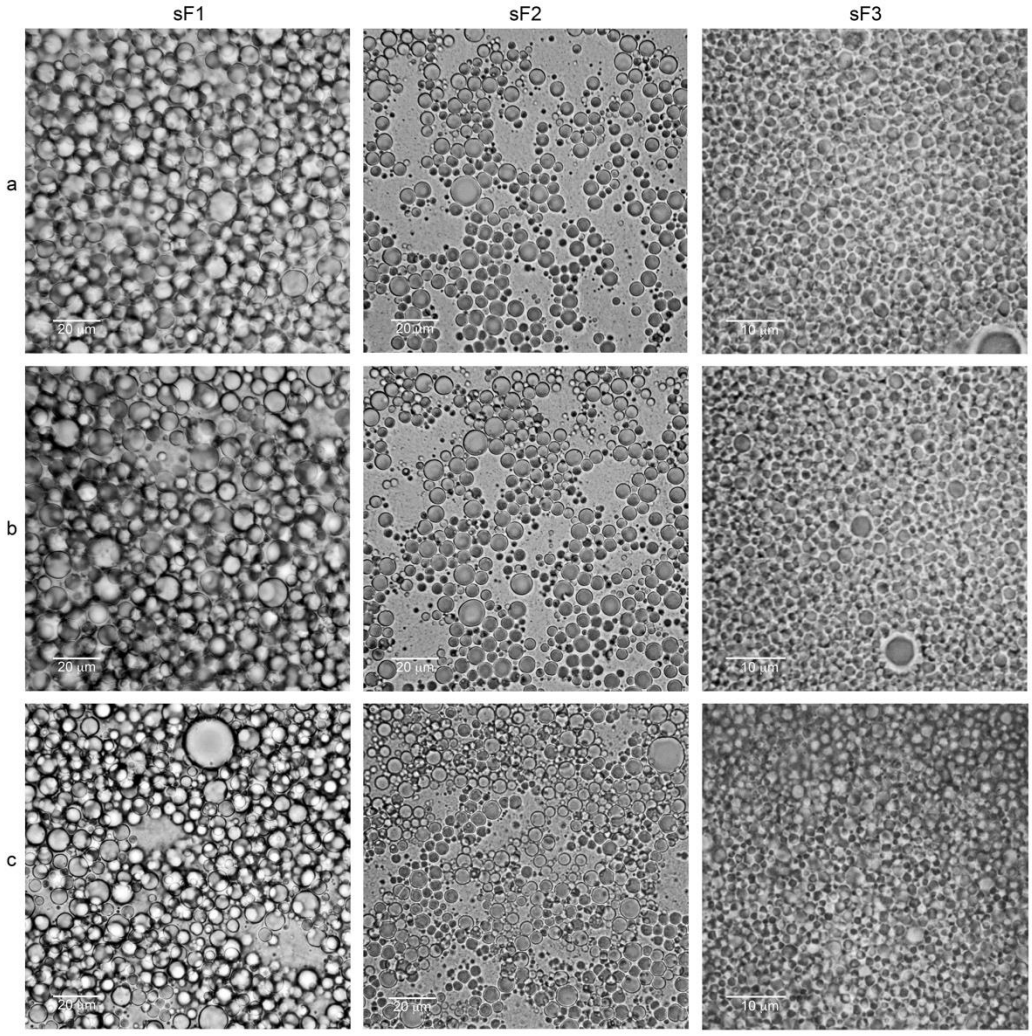

Fig. S1 Microphotographs of model emulsions sF1, sF2 and sF3, taken at time t_0 (a), after last cycle of the freeze-thaw test in stability chamber (b) and after DMTA test using an air-bearing rheometer, in temperature range –5°C–45°C (c)

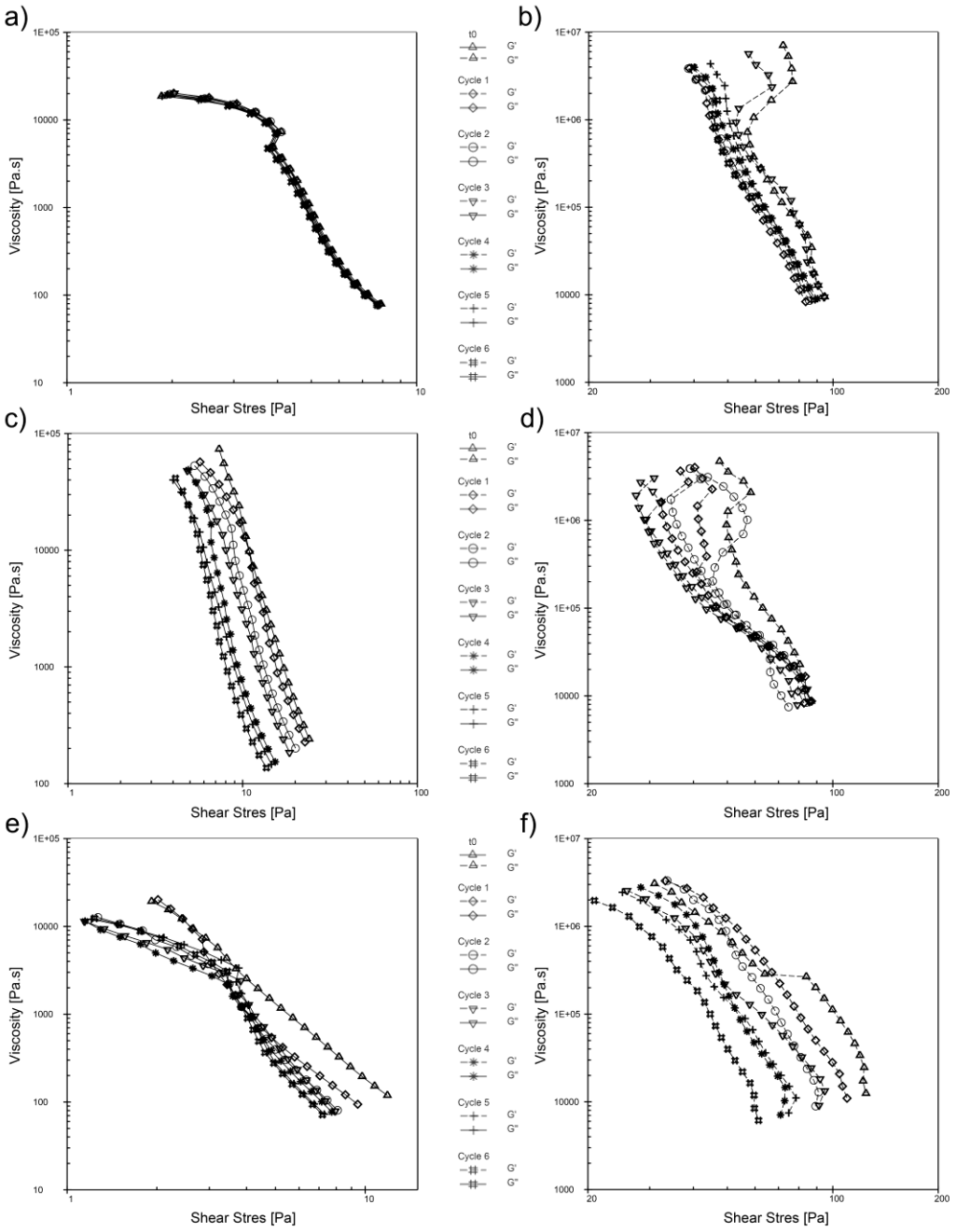

Fig. S2 Apparent viscosity plotted as a function of shear stress for fluid model emulsions fF1 (a), fF2 (c), fF3 (e), and for semisolid model emulsions sF1 (b), sF2 (d), sF3 (f)

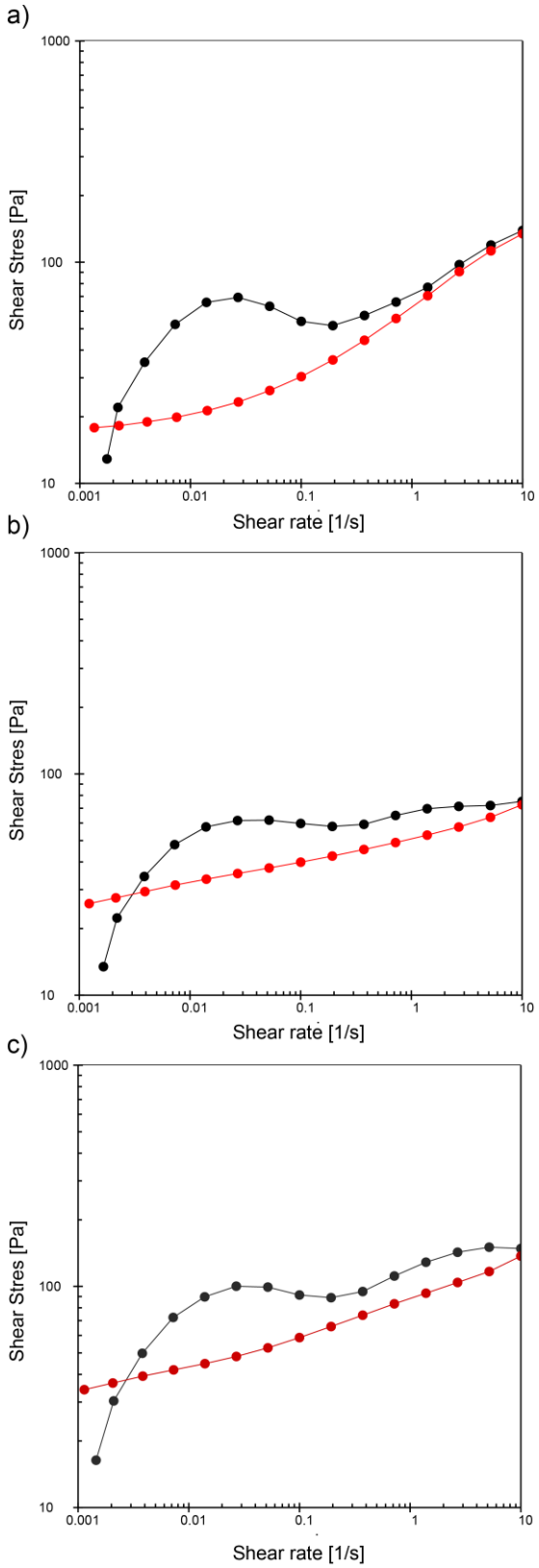

Fig. S3 Flow curves of semisolid model emulsions sF1 (a), sF2 (b) and sF3 (c) at increasing (black line and symbols) and decreasing (red line and symbols) shear stress, acquired with up-and-down shear rate ramps, with a data point every 12 seconds

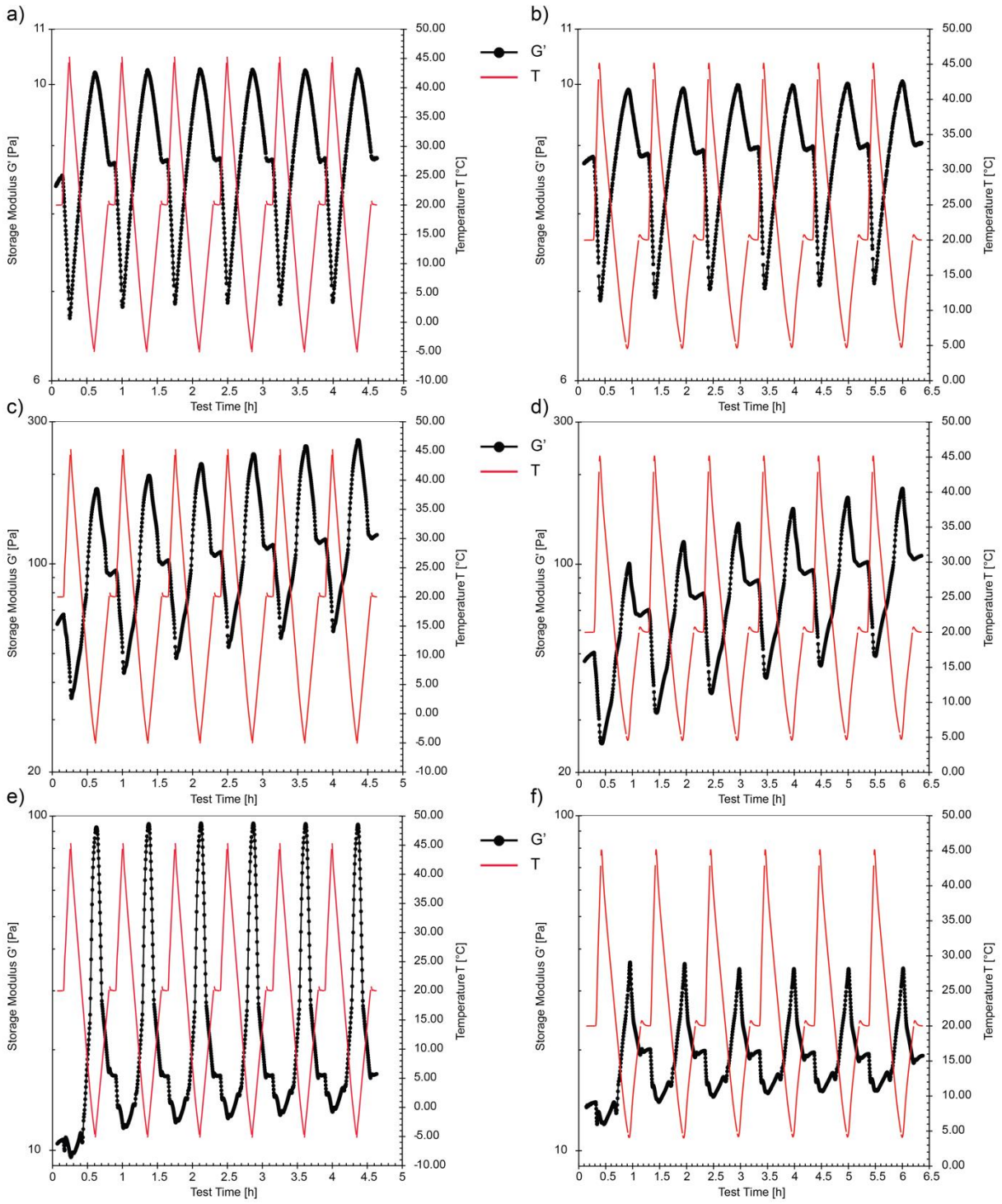

Fig. S4 Change of storage modulus (G') in dynamic-mechanical thermoanalysis (DMTA) test, in two temperature ranges being –5°C–45°C (a, c, e) and 5°C–45°C (b, d, f), for fluid model emulsions fF1 (a, b), fF2 (c, d) and fF3 (e, f)

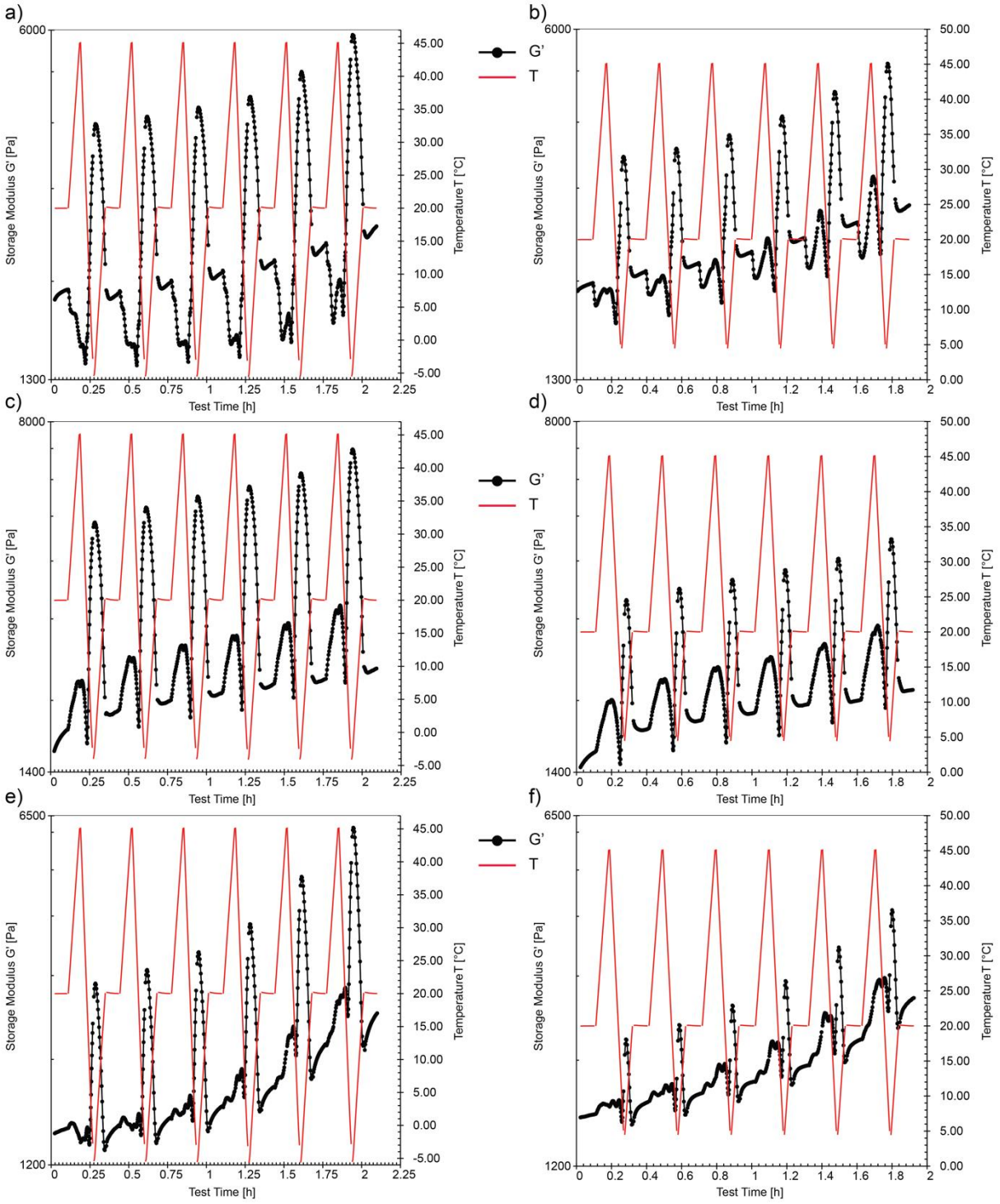

Fig. S5 Change of storage modulus (G') in dynamic-mechanical thermoanalysis (DMTA) test, in two temperature ranges being –5°C–45°C (a, c, e) and 5°C–45°C (b, d, f), for semisolid model emulsions sF1 (a, b), sF2 (c, d) and sF3 (e, f)

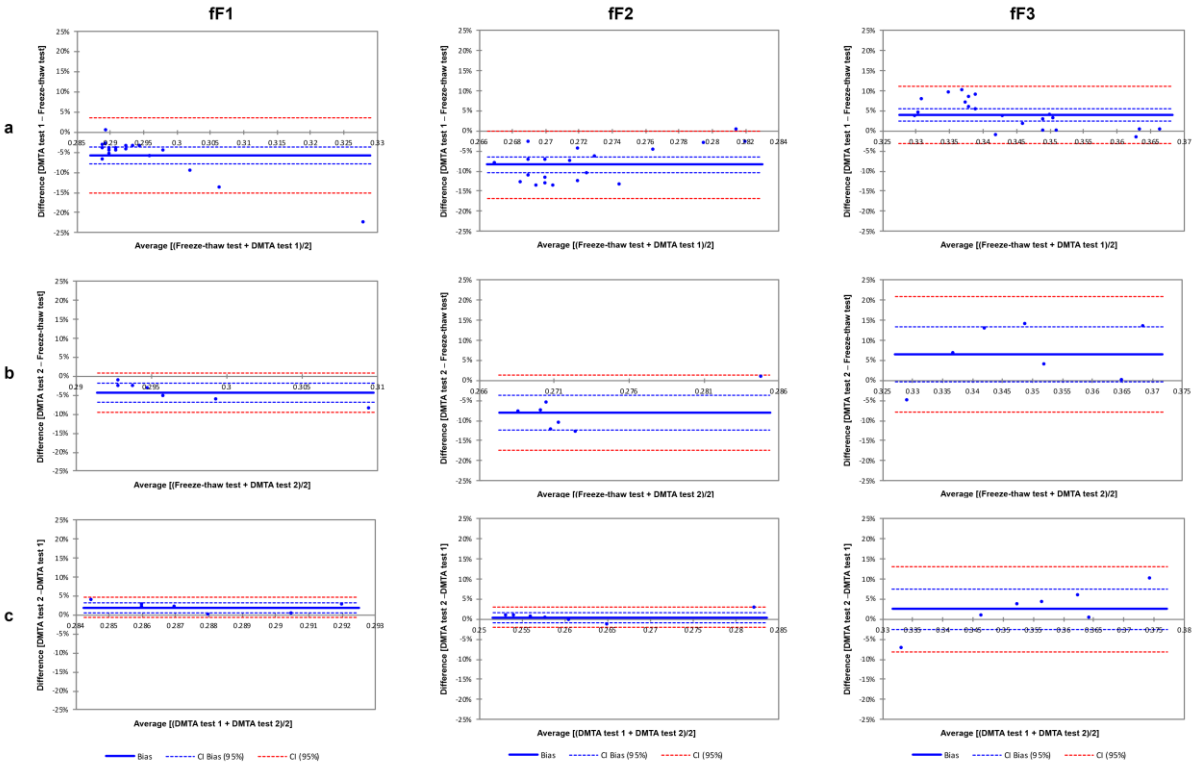

Fig. S6 Bland–Altman % difference plots of loss factor between DMTA test 1 and freeze-thaw test (a), DMTA test 2 and freeze-thaw test (b) and DMTA test 1 and DMTA test 2 (c) for three fluid model O/W emulsions (fF1, fF2 and fF3); blue solid line: bias; blue dashed line: confidence interval on the bias; red dashed line: confidence interval on the differences, i.e., limit of agreement

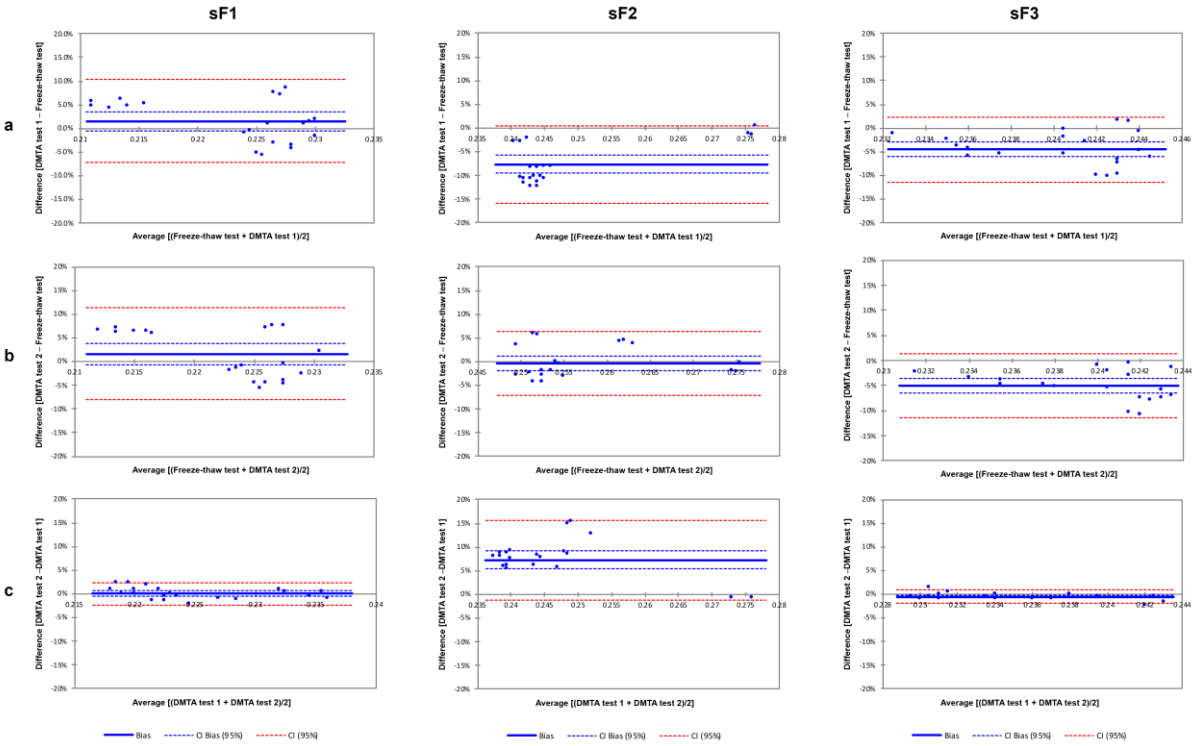

Fig. S7 Bland–Altman % difference plots of loss factor between DMTA test 1 and freeze-thaw test (a), DMTA test 2 and freeze-thaw test (b) and DMTA test 1 and DMTA test 2 (c) for three semisolid model O/W emulsions (sF1, sF2 and sF3); blue solid line: bias; blue dashed line: confidence interval on the bias; red dashed line: confidence interval on the differences, i.e., limit of agreement