

Supporting information

Title: Granular aqueous suspensions with controlled inter-particle friction and adhesion

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Figure S1 :

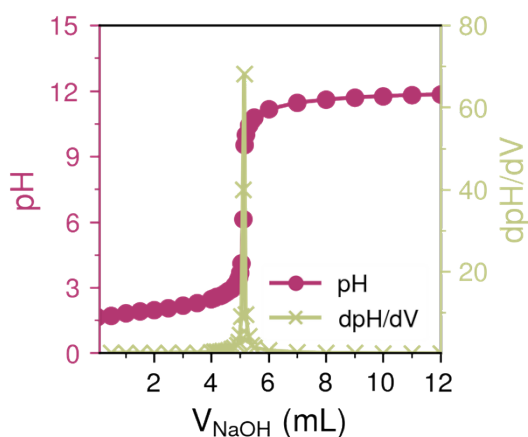


Figure S 1: Carboxylate content ($-\text{CH}_3\text{COO}^-$, MAA) of 62 wt% determined by indirect titration.

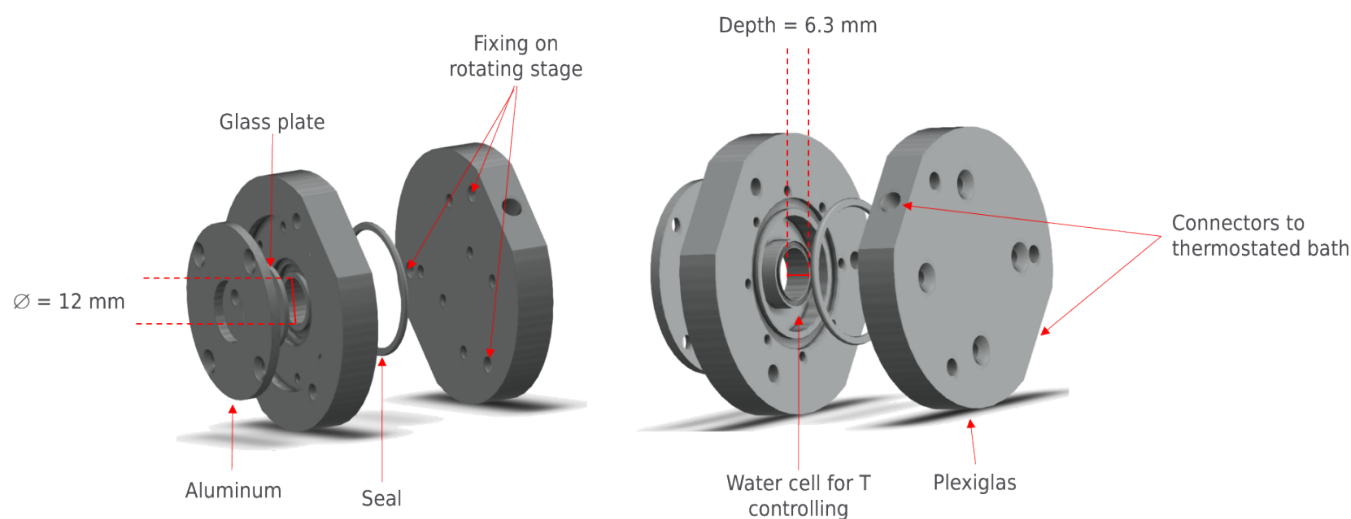


Figure S 2: Schematic of the thermostatically controlled drum used for temperature-varying experiments. The drum is connected to a thermostated bath and a peristaltic pump to control the temperature and water flow around the drum cell.

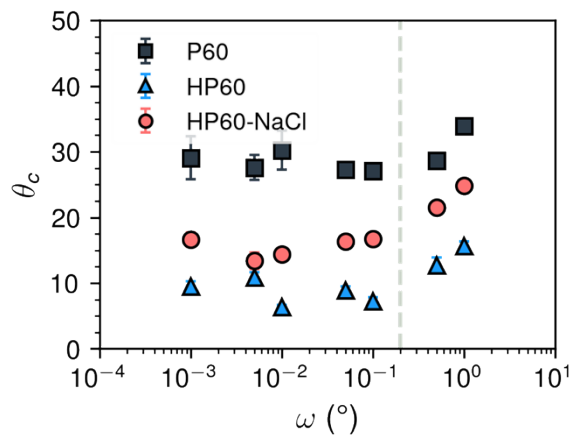


Figure S 3: Avalanche angle (θ_c) as a function of rotation speed (ω) for poly(methyl methacrylate) (PMMA) particles (P60) in pure water and hydrolyzed poly(sodium methacrylate) (PMAA-Na) particles (HP60) in pure water and in presence of NaCl ($I = 0.5$ M). For $\omega \leq 0.2$ $^\circ$:s $^{-1}$, the avalanche angle (θ_c) is independent of ω , i.e. measurements are performed in a quasi static regime.

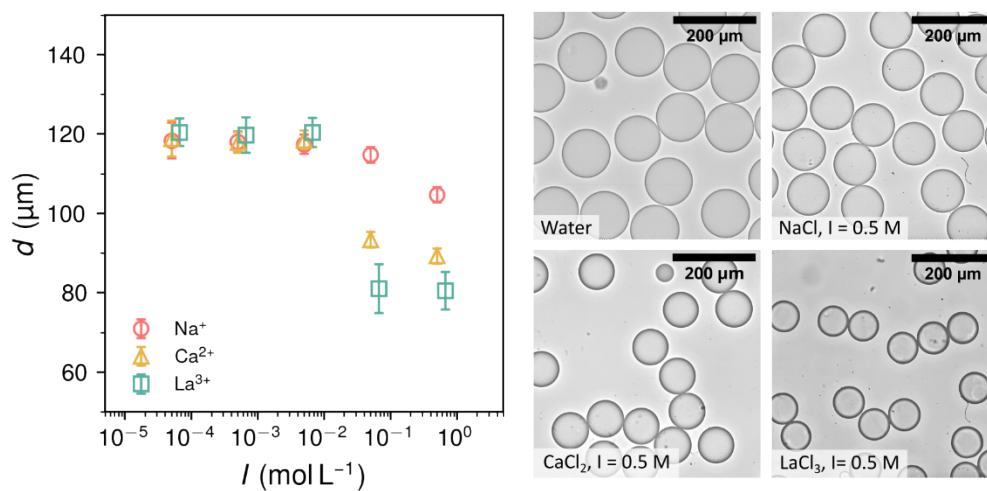


Figure S 4: Swelling behavior of hydrolyzed particles (HP60) in the presence of NaCl, CaCl_2 , and LaCl_3 . (Left) Particle diameter (d) as a function of ionic strength (I). (Right) Microscopy images of HP60 particle suspensions in water, and in the presence of NaCl, CaCl_2 , and LaCl_3 at $I = 0.5$ M.

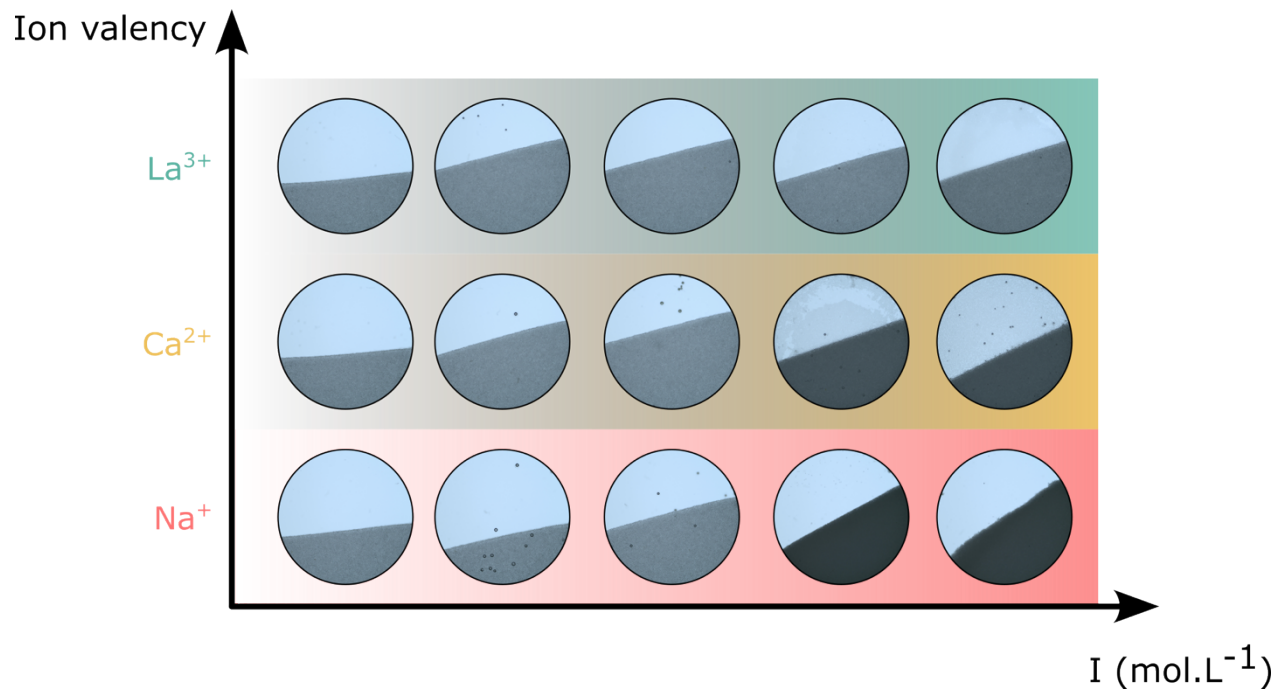


Figure S 5: Rotating drum images of HP60 particles in presence of mono- (Na^+) and multivalent cations (Ca^{2+} , La^{3+}) with increasing ionic strength from 0 to 0.5 mol.L⁻¹. The avalanche angles displayed in Figure 4 in the paper were determined from a serie of 20 to 30 images for each data point.