

Effects of a polymeric binder added to the secondary fluid on the properties of capillary suspensions

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Capillary suspensions are ternary solid-liquid-liquid systems, where the solid particles that were primarily suspended in a bulk fluid form a strong sample-spanning network by the capillary forces exerted by a small amount of added secondary fluid. These platforms have recently been applied in coatings, adhesives, and even in low-fat food products to achieve a proper texture, as the fluid of flowing properties can be implemented in the form of gel. There has so far been a strong emphasis on the capillary suspensions consisting of additive-free fluids, whereas such systems with additives, particularly those of large molecular weight (e.g. polymeric binder), were relatively less focused. Here, we show a systematic study on the properties of capillary suspensions with the secondary phase containing a common eco-friendly polymeric binder, alginate.