In various embodiments, the hybrid/composite capsule has a loading capacity of from about 65% to about 95% by weight, from about 70% to about 90% by weight, from about 75% to about 85% by weight, or no less than about 95% by weight, no less than about 90% by weight, no less than about 85% by weight, no less than about 80% by weight, no less than about 75% by weight, no less than about 70% by weight or no less than about 65% by weight.

In various embodiments, the hybrid/composite capsule comprises one or more of the following properties: non-toxic, hypoallergenic, biocompatible, degradable, environmentally benign, chemically stable and physically stable. Therefore, in various embodiments, the capsules may be useful in an application selected from the group consisting of: coating, therapy, medicine, agriculture, catalyst, printing, film, fiber, cosmetics, cosmeceutical, consumer care, personal care, health care, stimuli-driven delivery, and combinations thereof.

In various embodiments, the capsule is capable of releasing at least a portion of the one or more cargoes when stimulated (e.g. the polymer outer layer of the hybrid/composite capsule is degradable under suitable conditions to expose pores on the primary capsule). For example, capsule may be capable of releasing at least a portion of the one or more cargoes when stimulated by a predetermined level or change in one or more of a salt concentration, a pH, a temperature or a mechanical pressure etc.

There is also provided a formulation or colloidal suspension/dispersion comprising a plurality of the hybrid/composite capsules disclosed herein. In various embodiments, the hybrid/composite capsules are substantially monodispersed. For example, the hybrid/composite capsules may have a substantially uniform size distribution. In various embodiments, the solid content of the formulation or colloidal suspension/dispersion is from about 0.01 0 g/mL to about 0.01 5 g/mL, or about 0.01 3 g/mL (or 0.01 4 g/g).