

environment as compared to methods which require the use of harsh and toxic chemicals and/or organic solvents.

Therefore, in various embodiments, the polymer coating is formed over the  
5 shell of the primary capsule in a physical or non-chemical manner. Accordingly,  
in various embodiments, the method does not comprise chemically  
modifying/functionalizing/coupling/grafting the organic polymer latex particles or  
the shell of the primary capsule or their surfaces thereof to facilitate an integration  
of the organic polymer latex particles on or with the shell of the primary capsule.  
10 In various embodiments, the method does not comprise providing/adding a  
chemical curing/cross-linking agent (e.g. glutaraldehyde) or chemically  
curing/cross-linking the organic polymer latex particles to facilitate an integration  
of the organic polymer latex particles on or with the shell of the primary capsule.  
In various embodiments, the method does not comprise chemically/covalently  
15 attaching/conjugating/coupling/anchoring/grafting a functional group e.g. an  
amine group to the organic polymer latex particles or the shell of the primary  
capsule or their surfaces thereof to facilitate an integration of the organic polymer  
latex particles on or with the shell of the primary capsule. For example, in various  
embodiments, the method does not comprise using silane coupling agent such  
20 as  $\gamma$ -methacryloxypropyl trimethoxysilane in conjunction with a silica precursor  
such as tetraethyl orthosilicate (TEOS) to facilitate an integration of an organic  
material on or with a shell of the primary capsule. In addition, in various  
embodiments, the method does not comprise providing a preformed  
commercially available functional polymer such as lupranate (polymeric  
25 isocyanate and/or diisocyanate) to facilitate an integration of an organic material  
on or with a shell of the primary capsule.

In various embodiments, the method does not require providing a block  
co-polymer such as one derived from poly(2-(dimethylamino)ethyl methacrylate)  
30 (PDMA) and poly(benzyl methacrylate) (PBzMA). Such co-polymer are  
expensive and require many synthesis steps. Additionally, in various