

# Controlling the Surfaces of Food: Self-Assembly of Biopolymers

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## ABSTRACT

DuraFizz develops and applies nanotechnology-inspired innovations to the food industry by controlling the self-assembly of biopolymers at surfaces. This principle is demonstrated in several current research projects including nutrient encapsulation, edible foams, and fryer oil filtration. Many nutrients that provide various health benefits also impart off-tastes when incorporated into foods. To solve this problem, several nutrients including calcium, iron, vitamins and oils have been encapsulated in biopolymers to create a fine powder that is stable and dispersable. Another example that uses self-assembly of biopolymers is fat free or low fat edible foams that can be used as a whipped cream substitute or foam stabilizer in beverages. By combining biopolymers that synergistically interact to stabilize bubbles to create fine foams. Finally, biopolymers have been bound to the surface of filtering media to selectively remove degradation products from oils used in deep frying and significantly prolong the oil service life.

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