## INTRODUCING NEW FUNCTIONS INTO (AND ONTO) VIRUS-LIKE PARTICLES

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Leviphage Qß and PP7 are well studied viruses that infect *E. coli*. They also provide highly stable and tailorable capsid protein structures that can be manipulated in a number of ways by the molecular biologist and chemist. We will describe our work with both particles, designed to give them new binding, shielding, and catalytic properties. This involves the expression of hybrid particles bearing catalytic protein domains on the inside or outside, the use of standard polymerization methods to grow organic polymers from the surface or into the interior of the particles, and the marriage of these particles with degradable hydrogel carriers.

