Microfluidics on fiber arrays allows processes such as droplet motion, fragmentation, trapping, releasing, mixing and encapsulation. Therefore, it is possible to produce tiny droplets reaching a high level of complexity by using a vertical fiber decorated with successive nodes.

A tiny water droplet is left at each crossing, with a specific color (orange, red, green and blue). Then, a silicon oil droplet glides along the vertical fiber, encapsulates and collects, one by one, a portion of the water droplets at each node leading to the formation of a compound droplet with four different components!