

Title (en)  
Droplet ejectors.

Title (de)  
Tröpfchenausstossvorrichtung.

Title (fr)  
Ejecteurs de gouttelettes.

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Application  
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Abstract (en)  
A nozzleless droplet ejector for ejecting droplets from a free surface (16) of a pool of liquid (17), such as a pool of ink, comprises a selectively-energizeable droplet-emission controller (21) for generating a freely-propagating capillary wave on the surface of the pool to provide on/off timing control and/or ejection trajectory angle control for the ejector. The controller comprises a conductor (22) and a counter-electrode (23). The conductor is immersed in the pool, whereby a capillary surface wave is generated when a periodic voltage is applied across the conductor and the counter-electrode. In one embodiment, a ultrasonic pressure wave is focused on the free surface of the pool, and the capillary wave supplied by the controller coherently interacts with that pressure wave to provide the desired control. <??>Separate controllers may be provided for independently controlling the ejectors of multiple ejector arrays.  
The droplet ejector has a pool of liquid with a free surface and a source producing a pressure wave in the pool. A capillary wave emission controller for the injector includes a conductor and a counter electrode. The conductor is adjacent the surface of the liquid, near the focus of the pressure wave. A source is coupled across the conductor and the counter electrode to apply a periodic voltage across it. This causes a freely propagating capillary surface to radiate from the conductor.

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