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(19) **United States**(12) **Patent Application Publication**
Beyhaghi et al.(10) **Pub. No.: US 2022/0361310 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **APPARATUS FOR AND METHOD OF
CONTROLLING DROPLET GENERATOR
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62/810,768, filed on Feb. 26, 2019.**Publication Classification**(51) **Int. Cl.****H05G 2/00** (2006.01)**G03F 7/20** (2006.01)(52) **U.S. Cl.****CPC** **H05G 2/006** (2013.01); **G03F 7/70033**
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ABSTRACT

Apparatus for and method of controlling formation of drop-
lets used to generate EUV radiation. The droplet source
includes a fluid exiting an nozzle and a sub-system having
an electro-actuable element producing a disturbance in the
fluid. The droplet source produces a stream that breaks down
into droplets that in turn coalesce into larger droplets as they
progress towards the irradiation region. The electro-actu-
atable element is driven by a control signal having a sine
wave component and a square wave component. Various
parameters such as a phase difference between the sine wave
component and the square wave component are measured
and controlled to minimize the formation of noncoalesced
satellite droplets in the stream.

