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(57) Abstract :

The present invention relates to a system (100) of acoustic streaming for enhancing the evaporation rate of twin drops: (i) pure twin drops of methanol (ii) twin bicomponent drops of methanol and water (i.e., 15% and 75% of methanol) (iii) one drop of pure methanol and another bicomponent drop of methanol and water (15% and 75% vf of methanol), drop at normal temperature (i.e., 300 K). An LED light (6) is turned on and images are captured for the evaporation in an anechoic chamber with wedges (10) and carpet (11) surrounding it. A laser (9) is turned on for the internal circulation. A white noise (wn) was used for the acoustic field. The major outcome of the process is that maximum evaporation, as well as internal circulation, was observed for 1.5 cm spacing as compared to 0.5 cm. For both the acoustic frequencies, the presence of acoustic streaming enhances the evaporation rate, at all the spacings and drop compositions.

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