



### Droplet Impact on a Heated Stainless Steel Surface: Influence of Camera Framing Rate

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The impact of a single water droplet upon a polished stainless steel surface was imaged using a Digital High Speed Camera at 500, 1000, and 15,000 frames per second with shutter speed set to 50  $\mu$ s. The camera was fitted with a 60 mm micro lens to obtain the required spatial resolution to capture droplet impingement. The camera was aligned at an angle  $\theta = 33^\circ$  with respect to the horizontal. Surface heating was accomplished using a copper block with two miniature cartridge heaters embedded within it. The surface temperature

was controlled within  $\pm 1^\circ\text{C}$  using a temperature controller. The surface temperature and impact Weber number ( $We = \rho DV^2 / \sigma$ , where  $D$  is droplet diameter,  $V$  is impact velocity,  $\rho$  is density,  $\sigma$  is surface tension) were fixed for each framing rate at  $T_s = 345^\circ\text{C}$  and  $We = 165$ , respectively. At 15,000 frames per second, jetting was observed during breakup of the liquid film.