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The height and temperature effects on the Leidenfrost phenomenon with hastelloy SATOSHI YOSHIDA, MEZBAH UDDIN, SATOSHI SOMEYA, KOJI OKAMOTO, The University of Tokyo — The interaction phenomena of one drop impinging on a hot surface around Leidenfrost temperature have been experimentally investigated. In this experiment especially droplet interaction behavior with respect to the different droplet height was analyzed with high speed camera at 5000 frame per second. A large influence on the Leidenfrost phenomena of hastelloy and several materials was determined. In addition to the hastelloy, SUS 304, SUS 316, Aluminum, Titanium and Zircalloy were used as specimens. It has been observed that with increasing the droplet falling height, evaporation time of the droplet was decreased. At a certain droplet falling height and surface temperature, a droplet jet extraction phenomenon has been observed. Because of the vaporization at the first impact of the droplet bottom, the vaporization pressure attack top of the droplet, then the jet has been extracted from top of the droplet. At higher droplet falling distance and temperature, the jet extraction phenomenon does not occur, since the droplet has higher impact moment.

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