

Abstract Submitted  
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**Instability arisen on liquid jet penetrated in flowing liquid bath<sup>1</sup>**

NAOTO OKA, Div. Mechanical Engineering, Graduate Sch. Science & Technical, Tokyo University of Science, ICHIRO UENO, Dept. Mechanical Engineering, Fac. Science & Technology, Tokyo University of Science — We carry out an experimental study with a special interest on a penetration process and an instability on a liquid jet impinged to a flowing liquid pool. The impinged jet penetrates into the flowing bath accompanying with an entrainment of the ambient immiscible gas without coalescing with the liquid in the pool until the air wrap around the jet collapses. The wrapping air controls instabilities arisen on the jet. We observe the dynamic behaviors of the penetrated jet and the departure of the bubble of the wrapping gas at the tip of the collapsing jet by use of a high-speed camera in order to categorize the behaviors as functions of the velocities of the jet and flow in the pool. We also evaluate an averaged thickness of the wrapping gas through the observation.

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