Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

The rate of size change of a bubble containing a vapor and a non-condensable gas ENRIQUE RAME, USRA at NASA Glenn Res Ctr, R. BALASUBRAMANIAM, Case Western Reserve University — The rate of size change of a bubble containing a vapor and a non-condensable gas E. Ramé and R. Balasubramaniam When a vapor bubble is surrounded by subcooled liquid, the vapor condenses at a rate determined by the rate of heat loss from the bubble to the surroundings. Alternatively a bubble of pure gas surrounded by a liquid will dissolve at a rate proportional to the mass transfer rate into the liquid by dissolution. In this talk we will present analysis of the rate of change of bubble size when the bubble contains vapor and a non-condensable gas that is soluble in the liquid. The problem has application in the bubble management of heat transfer fluids that have high affinity for non-condensables such as air.

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Date submitted: 01 Aug 2017 Electronic form version 1.4