

LETTER TO THE EDITORS

COMMENTS ON THE PAPER "TETRAFLUOROETHYLENE PROMOTED DROPWISE CONDENSATION" BY EDWARDS AND DOOLITTLE

(Received 28 April 1965)

IN THEIR RECENT PAPER [1] Edwards and Doolittle misquote results given in an earlier publication by Le Fevre and Rose [2]. In column 6 of Table 1, Edwards and Doolittle attribute to Le Fevre and Rose, heat fluxes that are one tenth of those actually published by us. The correct values are:

	Range of ΔT (degF)	Range of heat flux (Btu/h ft ²)
Diocadecyl disulphide	2.9-12.1	110 000-560 000
Dodecanetris silane	3.9-15.5	100 000-530 000

Thus for a steam-to-surface temperature difference of say 10 degF, the heat flux obtained by Le Fevre and Rose is about eleven times that found by Edwards and Doolittle.

For the heat fluxes found by Edwards and Doolittle (35 600-70 500 Btu/ft²h) one may estimate the temperature drop in a Teflon film of thickness 0.001 in, using the thermal conductivity 6×10^{-4} cal/cm s degC [3]. The values found range from 20 degF to 40 degF. Experiments on heat transfer in the presence of dropwise con-

densation on any surface are liable to be perturbed by the presence of non-condensable gases and those on Teflon, layers of which are vastly thicker than adsorbed promoter layers, are evidently gravely affected by the precise effective position of the device used to measure the surface temperature.

It is therefore difficult to see what should be concluded from the results of Edwards and Doolittle. One thing at least is clear. That is that little can be deduced about the effect of the chemical nature of this surface.

REFERENCES

1. J. A. EDWARDS and J. S. DOOLITTLE, *Int. J. Heat Mass Transfer* 8, 663-666 (1965).
2. E. J. LE FEVRE and J. W. ROSE, Heat-transfer measurements during dropwise condensation of steam, *Int. J. Heat Mass Transfer* 7, 272-273 (1964).
3. G. W. C. KAYE and T. H. LABY, *Physical and Chemical Constants*, 11th ed., p. 171. Longmans, Green (1956).

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