

CONDENSATION INSIDE SMOOTH TUBES - A REVIEW OF AVAILABLE CORRELATIONS

Daniel MERGEANU, Cristian IOSIFESCU

"Dunărea de Jos" University of Galați ROMÂNIA,

111. Domnească St., G Bldg., Room 101, tel. +40 0236 414871, fax : +40 236 461353

email: cristian.iosifescu@ugal.ro

ABSTRACT

The paper presents the description of flow regimes and reviews the latest available correlations for condensation inside smooth tubes of refrigerants.

REFERENCES

- [1] APREA, C., GRECO, B., VANOLI, G.P. – "Condensation heat transfer coefficients for R22 and 407C in gravity driven flow regime within a smooth horizontal tube", IJR 4/2003, pg 393
- [2] CAVALLINI, A., CENSI, G. s.a. - "Condensation inside and outside smooth and enhanced tubes - a review of recent research" (IJR 4/2003, pg 373)
- [3] CHATO, JC. - "Laminar condensation inside horizontal and inclined tubes". ASHRAE J 1962;4:52-60
- [4] JASTER, H., KOSKY, PG - "Condensation in a mixed flow regime", Int J Heat Mass Transfer 1976; 19:95-9
- [5] ROSSON, HF, MEYERS, JA - "Point of values of condensing film coefficients inside a horizontal tube". Chem Eng Prog Symp Series 1965;61:190-9
- [6] SINGH A., OHADI, MM., DESSIATOUN, SV. - "Empirical modelling of stratified wavy flow condensation heat transfer in smooth horizontal tubes. ASHRAE Trans: Symposia 1996;9:596-603
- [7] DOBSON, MK, CHATO, JC - "Condensation in smooth horizontal tubes". J of Heat Transfer, Trans of ASME 1998; 120:193-213
- [8] BASSI, R., BANSAL, P.K. - "In-tube condensation of R134a and ester oil: empirical correlations". IJR 4/2003, pg 402
- [9] SHAH MM - "A general correlation for heat transfer during film condensation in tubes", Int J of Heat and Mass Transfer, 1979, 185-96
- [10] CAVALLINI, A., ZECCHIN, R. - "A dimensionless correlation for heat transfer in forced convection condensation". 6th Int Heat Transfer Congress 1974, 3:309-13
- [11] TRAVISS DP, ROHSENOW, WM, BARON, AB - "Forced convection inside tubes: a heat transfer equation for condenser design". ASHRAE Trans 1972; 79:157-65