Reply to the Editor

Reply for the comments on "Pressure drop and flow regime in cocurrent gas–liquid upflow through packed beds" [Chem. Eng. J. 88 (2002) 233–243]

We would like to thank Prof. Larachi and Prof. Grandjean, for their interest in our work. However we believe that some of the comments made are not appropriate because of the following reasons.

1. For two phase systems, we [1] feel, it is appropriate to use bulk density, instead of liquid density alone. As the frictional pressure drop in two phase systems is a function of phase holdup, any determination without the knowledge of actual holdup values will certainly leads to high errors.

2. Statistical comparison of Larachi et al. [2] correlation with present and literature data

	Larachi et al. [2] correlation
Present data [1]	
AARD (%)	24.8
Bias	1.3
Khan data [3]	
AARD (%)	14.25
Bias	1.03
PERC data [4]	
AARD (%)	26.6
Bias	1.12

Larachi et al. [2] correlation is found to be good for dispersed bubble regime of the author's data. For 5% butyric acid system the estimated pressure drops are much lower than the experimental values (AARD = 31.8%, bias = 1.52), whereas it predicts higher pressure drop for air–MEA system (AARD = 38.9%, bias = 0.73).

3. As the authors [1] did not have access to the raw experimental data available in the form of Ph.D. thesis [5–15] (which are the main data sources for Larachi et al. [2]), the proposed correlation is mainly based on the present experimental results, along with few of the available raw data, not based on the interpreted data. Eqs. (9)–(11) [1] are not checked for its validity under elevated pressures as well as for non-Newtonian systems. Due to the differences in the experimental techniques and determination/identification of flow regimes and pressure drop values, particular sets of published data are found to be incompatible with the literature correlations, sometimes mistranscription will also lead to massive errors.

References

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