Prediction of main regime transition with variations of gas and liquid phases in a bubble column

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Figure S1 Investigation of regime transition using gas holdup and $k_a$ in different gas–liquid systems under variation of superficial gas velocity: (a), (d) argon; (b), (e) nitrogen; (c), (f) helium
Figure S2 Investigation of regime transition using drift-flux model in different gas–liquid systems: (a) argon; (b) nitrogen; (c) helium
Figure S3 Experimental pressure deviation on different gas-liquid systems (measured at 5 H/D static liquid height). (a), (c), (e), (g) homogeneous flow regime; (b), (d), (f), (h) heterogeneous flow regime.