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Gas bubble formation and its pressure signature in T-junction of a microreactor¹ SHAHRAM POUYA, MANOOOCHEHR KOOCHEFAHANI, Michigan State University — The segmented gas-liquid flow is of particular interest in microreactors used for high throughput material synthesis with enhanced mixing and more efficient reaction. A typical geometry to introduce gas plugs into the reactor is a T-junction where the dispersed liquid is squeezed and pinched by the continuous fluid in the main branch of the junction. We present experimental data of time resolved pressure along with synchronous imaging of the drop formation at the junction to show the transient behavior of the process. The stability of the slug regime and the regularity of the slug/plug pattern are investigated in this study.

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