

Abstract Submitted
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Onset of flow instability in rigid foams CARLOS ANDRS BARROS OCHOA, Universidad Nacional de Colombia, PETR DENISSENKO, The University of Warwick, CARLOS ALBERTO DUQUE DAZA, Universidad Nacional de Colombia — The flow transition between stationary and time dependent regimes at the exit of a block of open-cell foam has been examined experimentally using Laser Doppler Anemometry. Measurements have been conducted at three points located at a plane located 10 mm downstream from the exit of the foam. The streamwise component of fluid velocity was measured at multiple flow rates. The probability density function of the velocity is two-peaked at Reynolds numbers above 25 based on the average pore size and is a skewed one-peak distribution at lower flow rates. Numerical simulations are being conducted using a computer tomography scanned model of the foam to match the experimental measurements. Obtained results are discussed in the context of using the open-cell foams in catalytic reactors.

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