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Growth and shape of bubbles in viscous liquids and confined geometries ARNULFO ORTIZ, Facultad de Ingenieria, UNAM, ABEL LOPEZ, Coordinacion de Posgrado, IMP, FRANCISCO HIGUERA, E. T. S. Ingenieros Aeronauticos, UPM, ABRAHAM MEDINA, ESIME AZCAPOTZALCO, IPN — In this work we have considered the problem of the growth and detachment of bubbles in a viscous liquid in finite reservoirs where axisymmetrical walls were located near the gas injection orifice. We studied numerically and experimentally how the coaxial pipe and inverted-cone walls affect the shape, final volume and coalescence of bubbles under conditions of constant gas flow rate, Q . The numerical solution of the Stokes equations and the free surface were determined as a function of a capillary number and Bond number in the absence of inertial effects. Detailed experimental visualizations are presented that display the sequences of growth and detachment computed numerically.

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