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Dispersion of Ink in a Bubble Column

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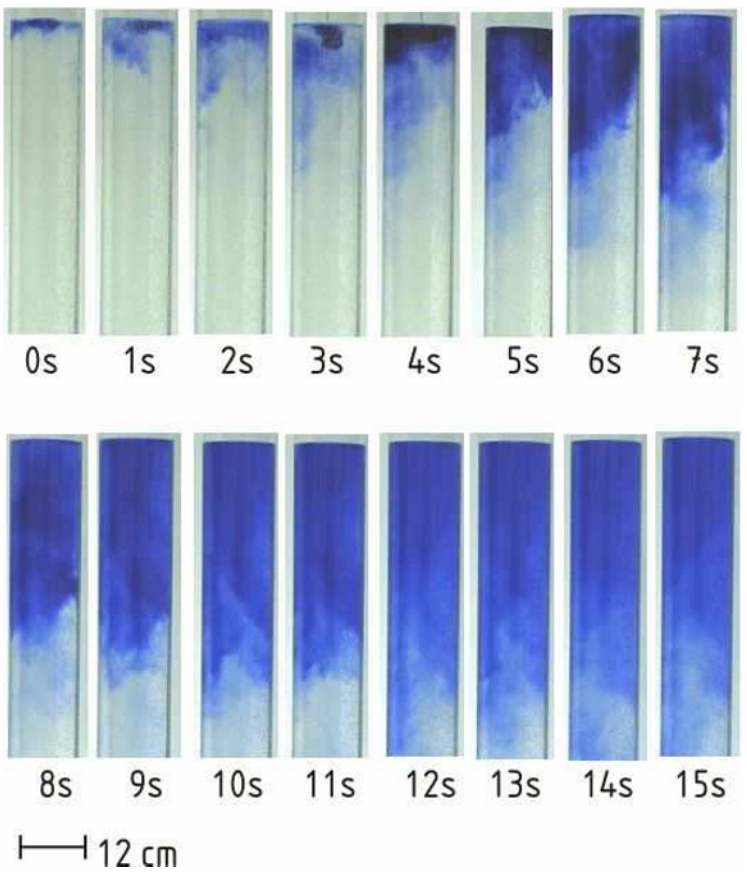

The photographs show the dispersion of ink in the upper part of a bubble column, which is of 1.3 m height and 0.12 m diameter. The liquid phase is tap water, the gas phase is air. Small bubbles rise up and induce the liquid flow field. Thus in particular in the center of the column the liquid is transported upwards. At the free surface the phases are separated and the liquid flows downwards near the column wall. The resulting flow field is characterized by several large scale vortices, which significantly affect the dispersion of the ink. For longer times dispersion phenomena in the axial and radial direction lead to a homogeneous distribution of the ink within the liquid.