

Beer Foam Analysis

Objective

Characterize the rapid structural evolution of beer foam immediately after pouring, including bubble growth, size distribution and liquid content.

Measurement

FOAMSCOPE™ is immersed directly into the glass before pouring, allowing the foam structure to be monitored in situ from the first seconds after foam formation.



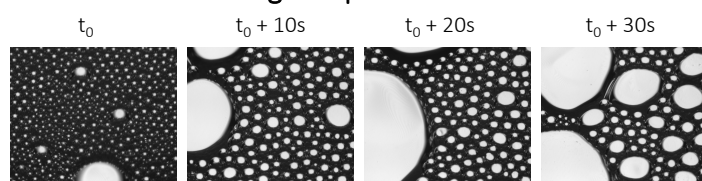
Sample	Beer Bottle
Camera settings	Exposure: 4.30ms - Gain: 0dB
Capture settings	Frequency: 3fps - Time: 30sec

Key analysis parameters

FOAMSCOPE metric	Information provided
Bubble count	Bubble population and evolution of the fine foam structure
D32 Sauter Diameter	Characteristic bubble size, particularly sensitive to the presence of larger bubbles
PDI	Bubble size distribution and structural heterogeneity
Liquid fraction	Evolution of the liquid content within the foam

Note: this sheet is designed as an application illustration, not as a scientific validation study.

Foam structure images capture



t_0 — Initial foam structure

High population of predominantly small bubbles, with occasional larger bubbles.

$t_0 + 10\text{ s}$ — Rapid evolution

Small bubbles remain dominant while larger bubbles progressively appear.

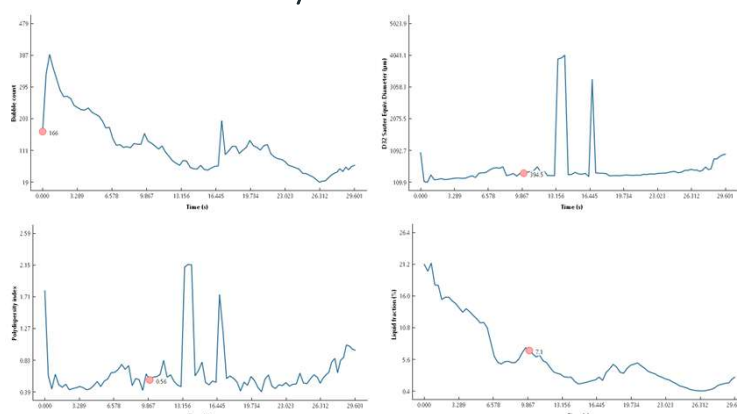
$t_0 + 20\text{ s}$ — Coarsening

Broader bubble size distribution with increasing contribution of large bubbles.

$t_0 + 30\text{ s}$ — Advanced coarsening

Large bubbles become increasingly prominent within a heterogeneous foam structure.

Foam structure analysis



Bubble Count ↓

Overall decrease reflects the progressive loss of the initial fine bubble population.

D32 — transient peaks

Transient D32 peaks reflect the sensitivity of D32 to larger bubbles within the real foam structure.

PDI — transient peaks

PDI increases when large bubbles coexist with the fine bubble population, revealing transient structural heterogeneity.

Liquid Fraction ↓

Reflects the evolution of the liquid content within the foam.

Transient D32 and PDI peaks are associated with large bubbles crossing the observation area and represent actual heterogeneity of the foam rather than measurement noise.