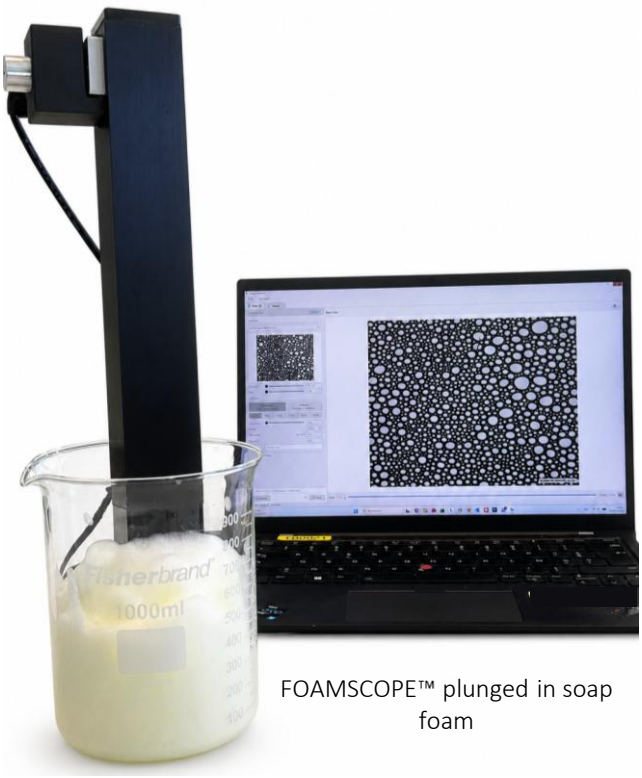
*Measuring instruments and Services for Interface Science*

## Introducing FOAMSCOPE™
## The First In Situ Foam Analyzer

*Bringing Quantitative Foam Analysis into Real Operating Conditions*



FOAMSCOPE™ plunged in soap foam

For decades, foam characterization has relied on laboratory-generated samples.

Yet foams are dynamic systems. Their structure evolves continuously and changes as soon as they are sampled, making it difficult to relate laboratory measurements to real process conditions or consumer experience.

### What if foam could finally be characterized where it actually exists?

Today, we're excited to officially introduce **FOAMSCOPE™**, the first In Situ Foam Analyzer, unveiled at the **EUFOAM 2026 Conference**.

FOAMSCOPE™ provides quantitative characterization of foam structure exactly where the foam exists; without sampling, without reconstruction, and without disturbing the system.

### A New Way to Characterize Foams

FOAMSCOPE™ combines an immersion optical probe with TECLIS' BubbleStatistics™ software to convert live foam images into quantitative structural information in real time.

Based on the proven total internal reflection imaging technique developed for FOAMSCAN™, the probe is immersed directly into the foam, where it captures high-resolution images (Fig1).

Within seconds, FOAMSCOPE™ transforms every image into a comprehensive set of data describing (Fig2):

- bubble generation
- bubble size and size distribution
- liquid drainage
- foam homogeneity
- coalescence dynamics
- foam aging over time

including Bubble Density, D10, D50, D90, D32, Liquid Fraction, PDI and many more…

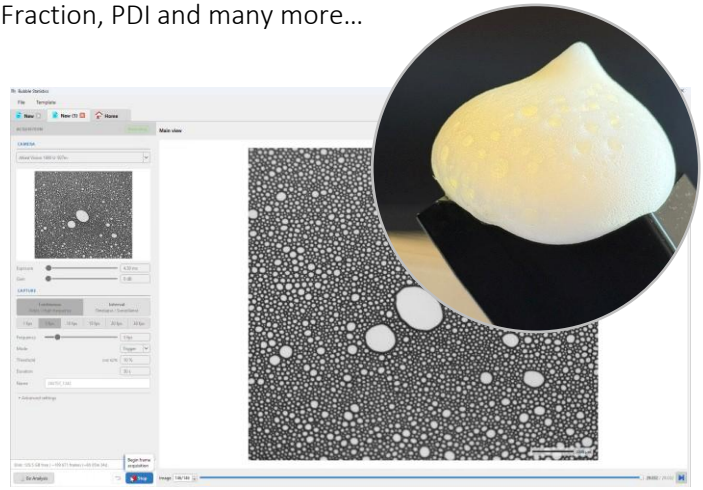


Fig1 Hair styling foam structure capture with FOAMSCOPE™

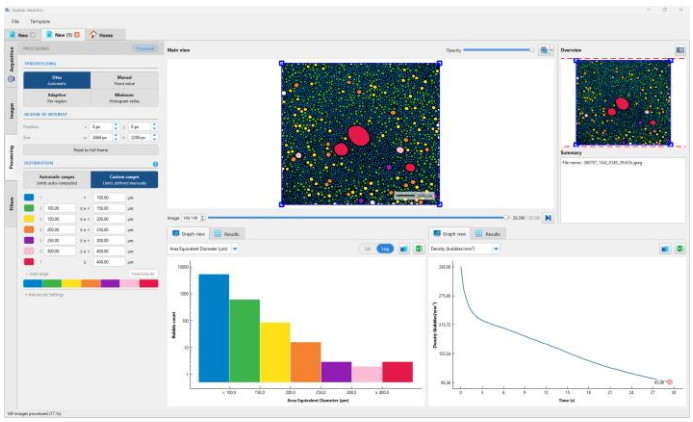


Fig2 Hair styling foam structure analysis

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All measurements are performed directly inside the foam, making the results representative of the actual process rather than an artificial laboratory reconstruction.

## Where can FOAMSCOPE™ make a difference?

FOAMSCOPE™ enables researchers and process engineers to directly correlate foam microstructure with functional performance.

✓ **Accelerate formulation development**

Correlate bubble structure with sensory perception, stability and product performance to select optimal formulations faster.

✓ **Optimize industrial processes**

Monitor foam generation, drainage and coalescence directly in process equipment to improve operating conditions and evaluate antifoam performance.

✓ **Implement objective quality control**

Replace subjective visual inspection with quantitative structural measurements to ensure batch-to-batch consistency.

✓ **Troubleshoot foaming issues before they become production problems**

Detect process deviations, unexpected foaming events or early instability before they impact production.

Applications include:

- Cosmetics & Personal Care
- Food & Beverage
- Home Care
- Fermentation & Bioprocesses
- Wastewater Treatment, flotation
- Petrochemicals / Energy
- Materials & Technical Foams

Whether the objective is improving sensory perception, optimizing formulations, monitoring industrial processes or understanding foam stability mechanisms, FOAMSCOPE™ delivers quantitative characterization of foam structure exactly where the foam exists, without sampling, reconstruction or disturbance of the system.

Hair styling foam deposited on FOAMSCOPE™

## How do these measurements help you make better decisions?

Every statistic generated by BubbleStatistics™ software tells something about the behavior of the foam.

| Parameter | What it tells you | Typical applications |
|---|---|---|
| Bubble size distribution (D10, D50, D90) | Bubble generation efficiency and coalescence | Compare formulations, optimize aeration, monitor production consistency |
| Bubble density | Foam generation efficiency | Evaluate surfactant performance, detect process drift |
| Liquid fraction | Foam drainage and wetness | Predict foam lifetime, optimize texture and stability |
| Sauter Mean Diameter | Global foam fineness | Correlate with creaminess, mouthfeel and sensory perception |
| Polydispersity Index (PDI) | Uniformity of the foam structure | Distinguish homogeneous foams from unstable or coalescing systems |
| Skewness & Kurtosis | Evolution of the bubble population | Detect the early stages of foam degradation before it becomes visible |
| Bubble shape descriptors | Bubble deformation and local mechanical constraints | Study process conditions and foam mechanics |

Rather than producing isolated measurements, FOAMSCOPE™ delivers a quantitative fingerprint of foam evolution, allowing scientists and engineers to understand not only how a foam behaves, but why and how to improve it.

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## Can foam analysis become a quality control tool?

FOAMSCOPE™ is more than a new analytical instrument.

By making quantitative foam measurements possible directly inside real foams, it extends foam analysis beyond the laboratory, making it suitable for process monitoring and objective quality control.

For the first time, R&D and production teams can objectively monitor foam structure where it matters:

- during production,
- inside industrial equipment,
- throughout product filling,
- or even during product use by the consumer.

Instead of relying solely on indirect indicators or laboratory tests, FOAMSCOPE™ provides real-time structural information that can be directly correlated with process performance, product quality and customer perception.

This opens new opportunities not only for research laboratories, but also for production engineers, formulation teams and quality assurance departments.

## Already Validated by Early Users

During the beta-testing phase, FOAMSCOPE™ was evaluated by both academic researchers and industrial partners who consistently highlighted:

- ✓ Ease of installation and operation
- ✓ Relevance of the measured structural parameters
- ✓ Fast image acquisition and analysis
- ✓ Confidence in the scientific robustness of the measurements

## Why FOAMSCOPE™ Matters?

For years, foam scientists have asked the same question:

**"Can we finally measure foam where it really exists?"**

Today, the answer is **YES.**

## FOAMSCOPE™ marks the beginning of a new era in foam analysis.

For the first time, quantitative foam measurements can be performed directly in real operating conditions, opening new opportunities for research, process optimization and quality control.

## FOAMSCOPE™

*Beyond Foam Characterization*

*Towards Real-Time Foam Quality Control*

**FOAMSCOPE™ is now commercially available.**

If you would like to discover how FOAMSCOPE™ can support your research, formulation development or industrial process.

CONTACT US

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