



COMPUTER VISION ANALYSIS OF BIOSLUDGE STRUCTURE

Flocmark[®]

Turns ordinary microscope images of activated sludge into objective, numeric structure data, helping your team spot process distress early.

Your biology is telling you something. Flocmark helps you read it.

The structure of biological sludge is one of the earliest indicators of how a wastewater treatment process is performing. Large, compact flocs settle well. Excess filaments and fine particles signal trouble, often before it shows in settling or effluent quality.

How to compare analysis results?

Microscopy is a powerful tool, but traditional evaluation is visual and qualitative. Two experienced specialists can look at the same slide and reach different conclusions, and results are hard to compare between shifts, sites and seasons.

A digital, repeatable answer

Flocmark® applies computer vision to the images your staff already take. Every image is analysed the same way, every time, producing numbers you can trend, compare and act on.



Flocmark® analysis result: flocs, filaments and fine particles are detected and measured in each image.

Ready for the new regulatory landscape. The recast EU Urban Wastewater Treatment Directive (2024/3019) encourages the use of digital tools to monitor treatment processes. Flocmark® brings structured, archived and reportable microscopy data into your monitoring routine.



From microscope slide to insight in five steps

No new instruments to learn. Flocmark® fits around the microscope work your lab already does and runs entirely in a web browser.

-  **Imaging**
Capture images with a microscope fitted with a digital camera. Standardised settings for magnification, brightness and resolution keep every sample comparable.
-  **Upload**
Images are uploaded through a web browser. There is no software to install and nothing to maintain on site.
-  **Analysis**
A single click starts the computer vision analysis of flocs, filaments and fine particles in each image.
-  **Results**
See results instantly: structure its development are presented as clear diagrams and numeric values.
-  **Archive**
Images and data are stored for historical access, so samples can be compared to each other

Numbers you can trend. Warnings you can act on.



Every analysis delivers

- **Composition** – share of flocs, filaments and fine particles, plus fibre counts
- **Floc properties** – compactness and size
- **Distributions** – floc size and porosity by area, as diagrams and values
- **Comparison** – each value shown side by side with a reference sample

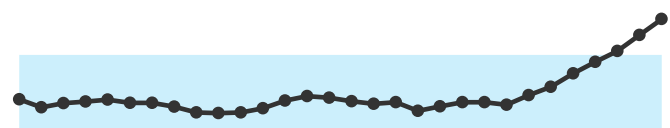
Track trends, set targets

Flocmark® builds trend categories for **floc formation**, **filament amount** and **fine particle occurrence**. Set target ranges and objectives for each parameter.

When a value drifts outside its target, predictive flags highlight possible process distress early, giving operators time to respond.

Trend & target tracking

Illustrative example



Week 1

Week 3

Week 5

● Target range

Early warning: out of target

What **good structure** looks like

- Large flocs
- Few filaments

- Low floc porosity
- Few fine particles

Built for process engineers, lab specialists and operators



Consistent interpretation

The same algorithm assesses every image, reducing variation between interpreters, shifts and sites.



Detailed numeric data

Turn visual impressions into measurable structure data: floc size, porosity, filaments and fines.



Sample comparison

Compare samples across days, process lines or plants using archived images and results.



Early alerting

Target ranges and predictive flags warn of process upsets before they escalate.



Deeper understanding

Build knowledge of your treatment dynamics by linking structure trends to operating changes.



Faster response

From slide to structured results with a single click. See deeper, respond faster.



Pulp, paper & board

Keep mill effluent treatment stable through grade changes, shutdowns and load variation.



Municipal wastewater

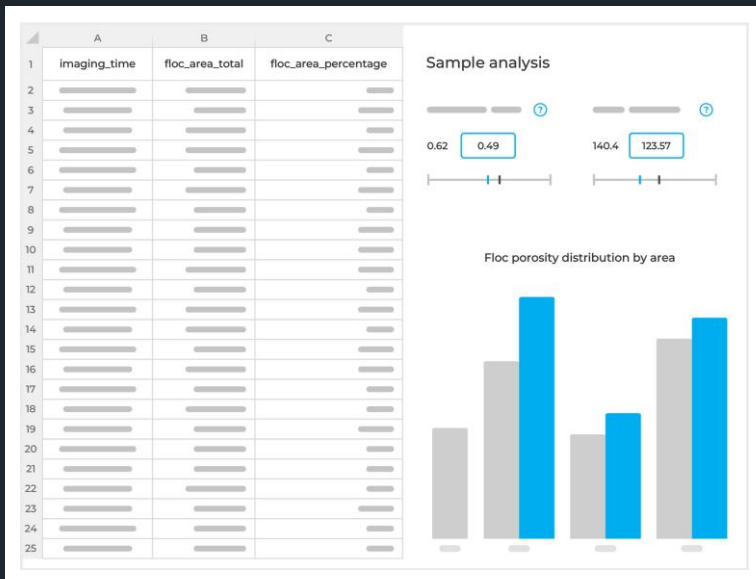
Support digital process monitoring and reporting in line with evolving regulatory expectations.



Oil refining

Detect structural changes in biological treatment early when influent composition shifts.

Fast results, better decisions



Excel export

Export raw numeric data to Excel for your own analysis or to combine with other plant data.



PDF reports

Summarise numeric and visual results for compliance, reporting or team briefings.

Ready to see your sludge **in a new way?**

Contact sales to discuss your plant, arrange a demonstration or analyse a set of your own sample images.

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