

Leverage the Power of Flocculation Metrics



RoboJar

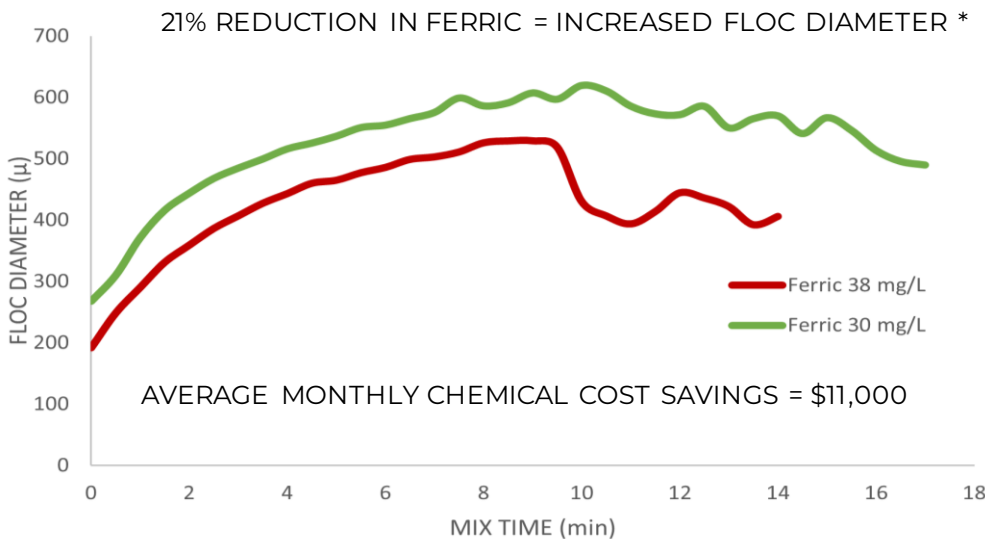
Optimize Coagulation, Flocculation and Filtration in Drinking Water Treatment

SAFE WATER STARTS WITH COAGULANT DOSE TESTING

Controlling water pollutant filtration begins with proper coagulant dosing. Plant operators must make chemical changes in this front-end step which control the back-end results of filtrate quality. Current methods for gathering data are either a visual inspection of the mixing tanks or estimating the impact of changes using simulated conditions with traditional jar testing.

RoboJar offers the first **easy to use benchtop device** that uses full-process samples. It provides **two key flocculation metrics** (floc diameter and floc formation rate) to measure the effectiveness of chemical dosing and mixing changes in the plant.

A simple two sample process helps operators **find the optimal chemical dose** with the **sample pair comparison method** using the patented RoboJar.



* **Decrease in ferric dose delivered \$400K+ chemical savings over 3 years using RoboJar analysis.** Data from a 50 MGD plant using mountain reservoir and river water sources. A cut in coagulant chemicals resulted in increased floc size, improved turbidity, and decreased chemical usage.

Benefits of RoboJar

Full Process
Samples for
Chemical Dose
Testing

Rapid Response to
Raw Water Quality
Changes

Easily Analyze Floc
Formation Data for
Dosing Decisions

Avoid Coagulant
Overdosing and
Improve Effluent
Quality

RoboJar uses **laser illumination** and **advanced optics** to continuously analyze the process of floc formation during user-controlled mixing programs.

Collect and quickly graph **important Floc Metrics:**

- ✓ **Floc Diameter**
- ✓ **Floc Formation Rate**

Effluent Turbidity is lowest when Floc Diameter is at maximum size during the mixing phase.¹ Find the **optimal coagulant dose** with full process samples and the patented RoboJar. Testing with the **sample pair comparison method** directs smart dosing decisions with easy-to-read graphs.

1. Ingles, TF, Optimizing Granular media Filtration Through Bench-Scale and In-Situ Floc Particle Characterization, 2006 - MS Thesis, Colorado School of Mines.



The solution to poor filtrate quality in treatment plants ... is in controlling pretreatment chemistry.

*Tobiason and O'Melia,
Journal AWWA Vol 80, Issue 12*



Peak Floc Diameter = Peak Filtration = Lowest Turbidity

