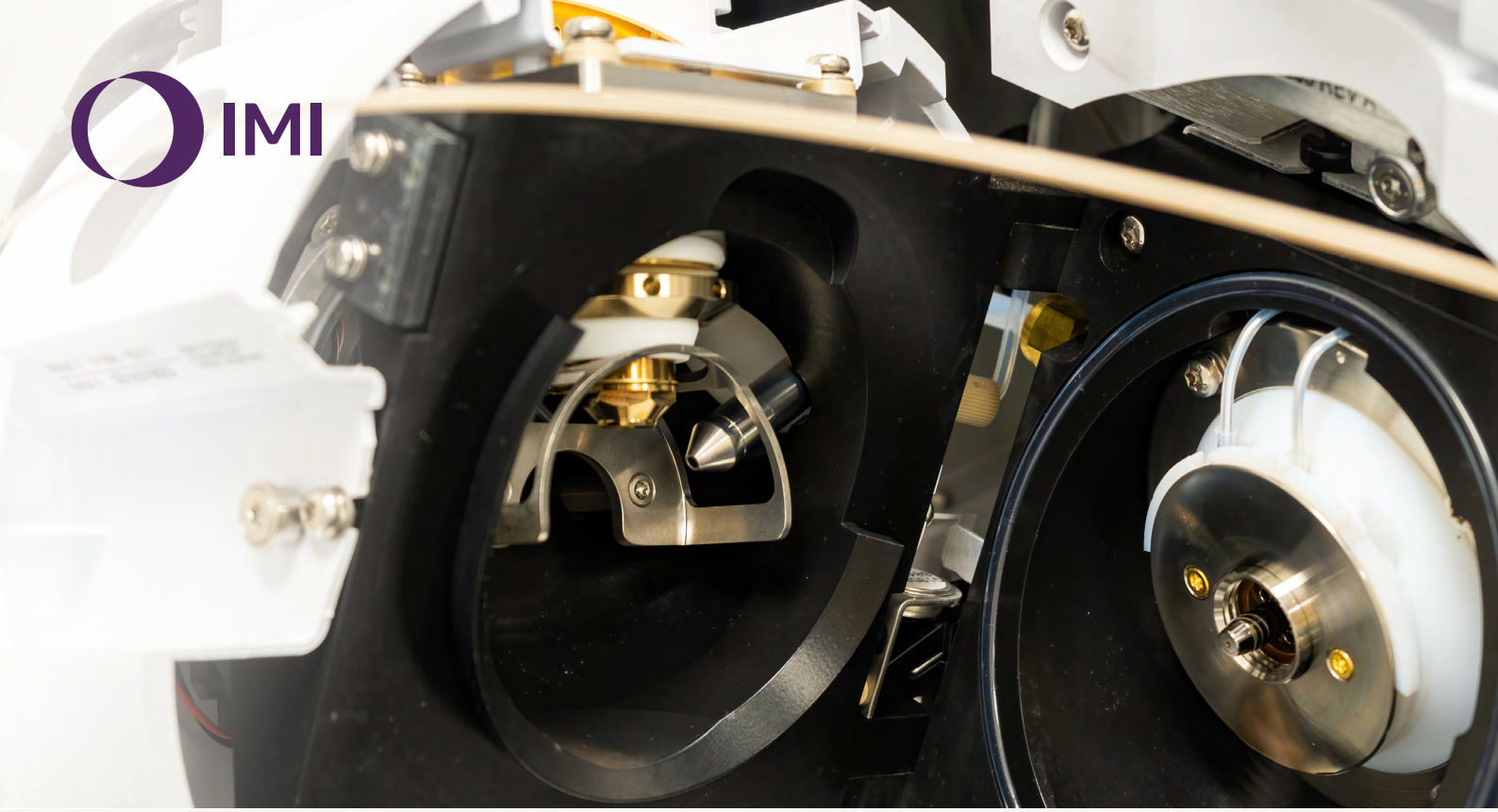


Case study:

From Instability to Insight:

How Real Gas Flow Feedback Transforms Mass Spec Performance

FLATREG MFC
Manifold

Life Science

Our product brands:
IMI Adaptas
IMI FAS

The Challenge: Unstable Flow, Unreliable Results

Mass spectrometry users were grappling with a persistent and costly issue: unstable nebulizer gas flow. Traditional setups relied on pressure regulators and flow restrictors—components that approximate flow rather than measure it. Even minor changes in tubing or partial clogging could cause flow variations, leading to inconsistent ionization, degraded data quality, and frequent unplanned maintenance.

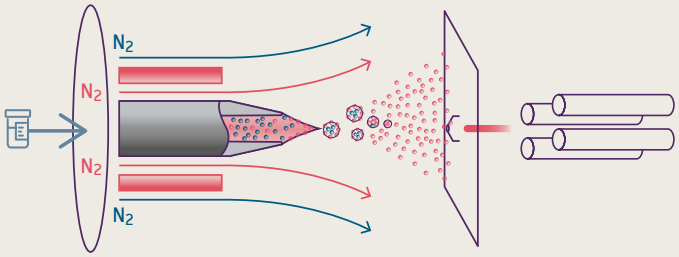
Achieving precise flow control seemed to require a full redesign of the gas delivery system—a high-risk, resource-heavy project that needed specialized engineering expertise. For this team, that wasn't a realistic option.

The Breakthrough: Real-Time Flow Control Without the Redesign

Instead of replacing the entire system, the team integrated a FLATREG Mass Flow Controller (MFC)—a compact, cost-effective solution that delivers direct, real-time flow measurement and control.

Unlike traditional setups that rely on fixed restrictors and pressure control, the MFC continuously measures and adjusts flow in real time, ensuring consistent delivery regardless of system changes or wear. By consolidating the work of multiple legacy parts into a single MFC unit, it simplifies the setup while delivering a significant boost in performance.

The Impact: Stability, Speed, and Confidence



With real-time flow feedback, users gained:

Stable, reproducible flow – consistent ionization and improved quantitative reproducibility.

Immediate diagnostics – fast detection of leaks, clogs, or deviations, reducing downtime and troubleshooting time.

No need for complex redesign – the MFC replaces multiple components, saving engineering time, reducing integration risk, and accelerating deployment.

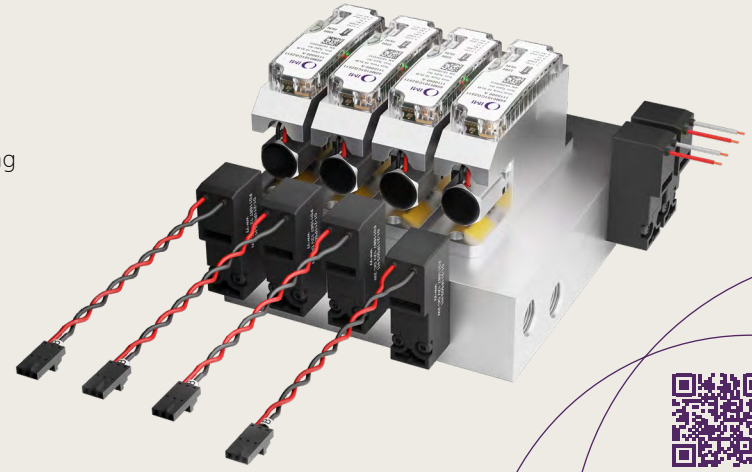
The result? More reliable data, fewer interruptions, and greater confidence in every run.

Extended Support: Integrated Assemblies for Full Gas Control

For teams building or upgrading instruments, we offer complete gas source assemblies—including manifolds, MFCs, valves, and fittings—to control sample, nebulizer, drying/sheath/probe, and counter gas.

This integrated approach delivers:

- **~50% reduction in system size**
- **Simplified procurement** – consolidate suppliers from 6 to 1
- **Lower engineering effort** – allow teams to focus on instrument innovation
- **Increased robustness, lower maintenance** – Reduced tubing and fittings, fewer leak points
- **Reduced overall cost** – including sourcing, assembly, QC, inventory, and obsolete components



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