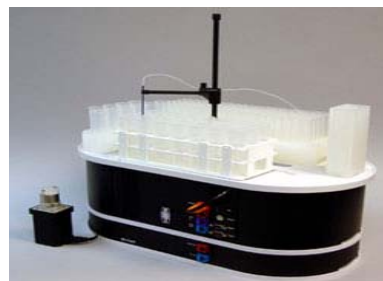


SC-FAST

Autosampler Evolution

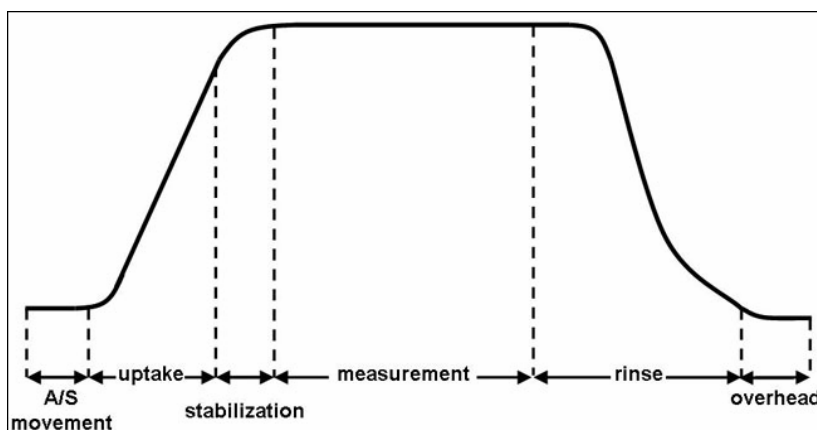


Autosampler Injection System

SC-FAST maximizes the productivity of ICP and ICP-MS by reducing or utilizing ALL the non-productive steps in a sample acquisition.

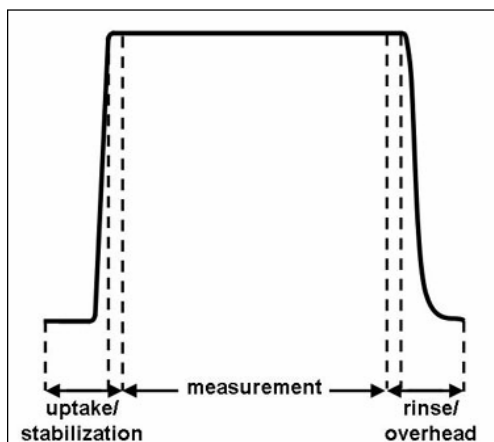
- ▶ Increases sample throughput up to 5x
- ▶ Eliminates sample contact with peristaltic pump tubing
- ▶ Eliminates the need for stabilization time due to fast pumping
- ▶ Reduces salt loading on cones
- ▶ More effective rinsing between samples

Most of the acquisition time is spent on the 5 non-productive steps, rinsing, uptake, stabilization, auto-sampler motion and ICP overhead/calculation time. Measurement (productive) time is typically only 20% to 50% of the analysis time.

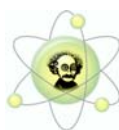


A typical ICP or ICP-MS acquisition is made up of 6 time steps:

1. **Autosampler movement**
2. **Uptake**
3. **Stabilization**
4. **Measurement .**
5. **Rinse Overhead**

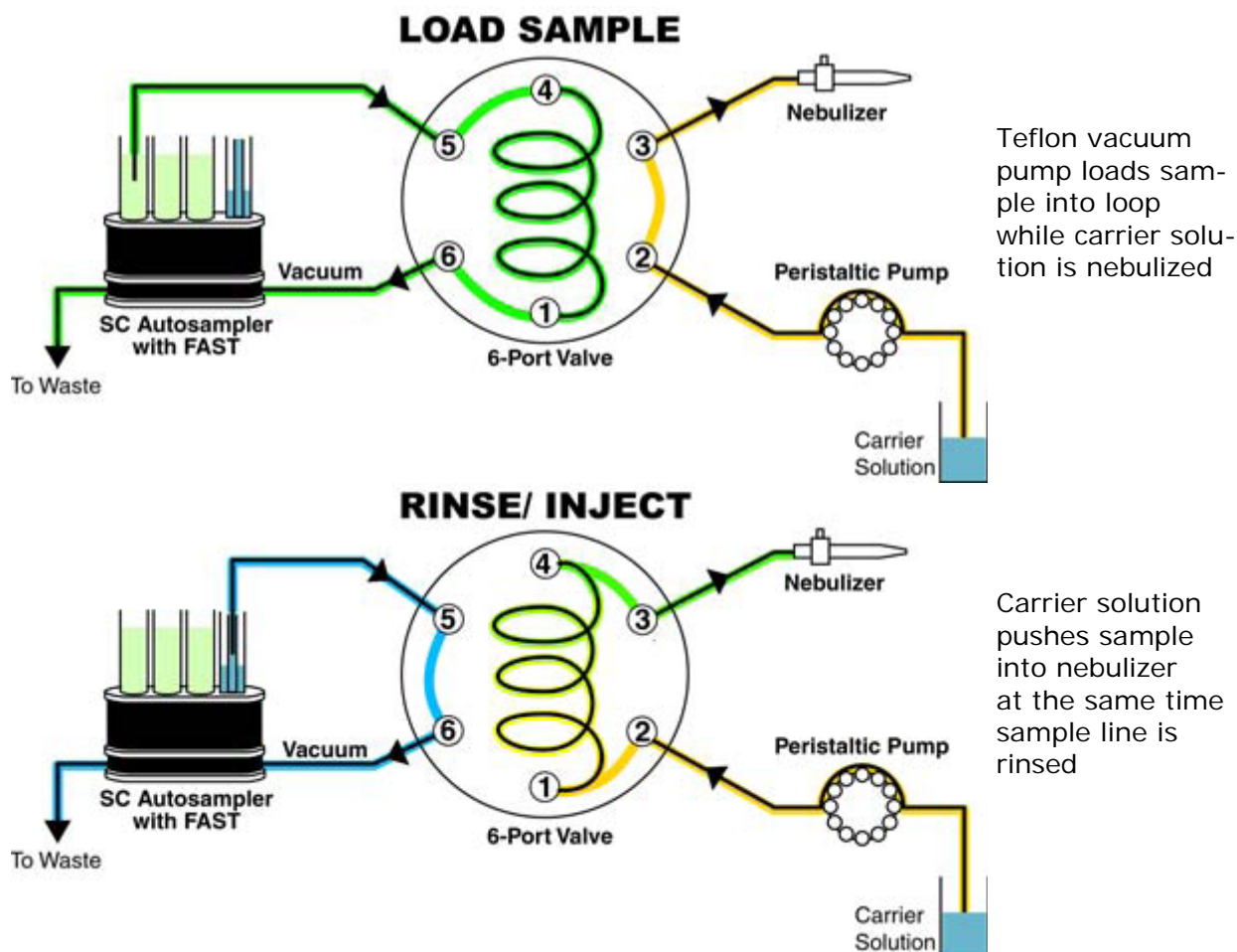


The SC-FAST increases instrument productive time to over 75% without compromising analytical performance. A seamless integration with ICP software and hardware ensures complete optimisation of **ALL** non productive time steps in an ICP acquisition.



Unique Design

Utilizing a high flow vacuum pump, 6-port valve and ESI software, the SC-FAST is able to rapidly deliver the sample for analysis, saving valuable time. The unique design eliminates sample contact with peristaltic pump tubing, lowering cross contamination and allows the pump to operate at a constant speed, virtually eliminating stabilization time. The SC-FAST rinses and cleans the sample lines while the sample is being analyzed, making this a true multi-tasking sample introduction system.

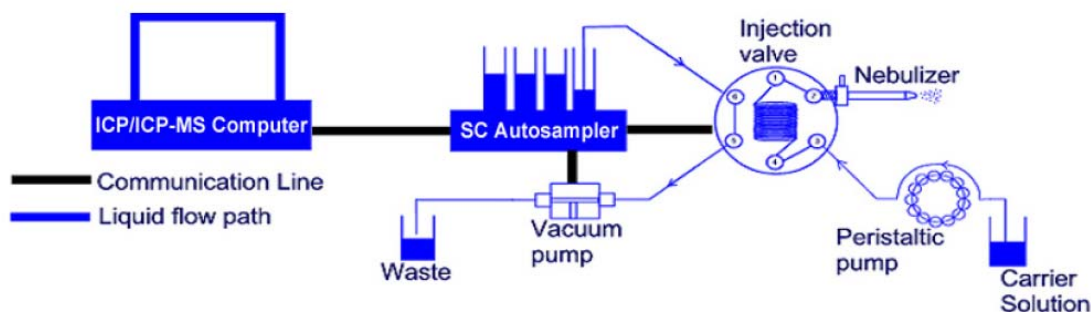


- ▶ Reduces instrument operating time
- ▶ Reduces argon consumption
- ▶ Reduces cone maintenance
- ▶ Increases the number of samples analyzed in available time
- ▶ Depending on your work load, the SC-FAST can pay for itself in as little as 1 month!



Schematic of SC-FAST Analysis System

- Sample does not contact peripump tubing.
- Autosampler Load/Rinse @ 15-20 ml/min
- Low, constant flow to nebulizer.
- Measurement time constant, amount of sample reaching cones reduced 2x-3x.



Method changes to implement *FAST*

- All pump speeds identical
- Sample Uptake, Stabilization, and wash times reduced

	Sample Uptake	Fast Pump Speed	Stabilization Time	Pump Speed	Analysis	Pump Speed	Wash	Wash Speed
Standard	60 (Sec)	24 (RPM)	30 (Sec)	12 (RPM)	30 (Sec)	12 (RPM)	45 (Sec)	24 (RPM)
With SC-FAST	12 (Sec)	6 (RPM)	0 (Sec)	6 (RPM)	30 (Sec)	6 (RPM)	5 (Sec)	6 (RPM)

* Data from actual SC-FAST Customer

Environmental Application Example

- Before: 5min 50 sec (11 analyses an hour)
- After: 2 min 40 sec (22 analyses an hour)

* Data from actual SC-FAST Customer

– EPA method 200.8 fewer recalibrations due to less salting of sample cones.

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