Introducing the new Agilent 7800 Solution-Ready ICP-MS

Agilent Technologies
2015

Agilent's 28 Years of ICP-MS Innovation

8800 ICP-QQQ

- World's First (and only) ICP-QQQ

7700

- HMI
- ISIS-DS
- 3rd Generation ORS
- MassHunter SW

7900

- Ultra high performance single quad ICP-MS
- UHMI
- ORS Detector system
- ISIS 3
- MassHunter 4.1

7800

- Simple
- Powerful
- Affordable

7500

- 9 orders detector range
- Octopole Reaction System

4500

- World's first benchtop ICP-MS
- Cool Plasma Capable

PMS series

- First computer-controlled ICP-MS

#1 selling ICP-MS !

| 1987 | 1994 | 2000 | 2009 | 2012 | 2014 | 2015 |

Agilent Technologies

2015: Introducing the New **Agilent 7800 ICP-MS**

Agilent 7800 ICP-MS replaces the **7700x**, and joins the **Agilent 7900** to cover the range of quadrupole ICP-MS applications from **routine** to **flexible, high-performance/research**

Agilent 7800

Agilent 7700

Agilent 7900

Agilent Technologies

Agilent ICP-MS Product line up

8800 ICP-QQQ – High-end ICP-MS

- Unique power of **MS/MS**
- For difficult element and problematic interferences
- Maximum sensitivity and flexibility

7900 ICP-MS – Flexible ICP-QMS for all markets

- **Highest sensitivity** spec. in Single Quad ICP-MS
- **UHMI** – Enhanced robust performance
- **Fast TRA** mode for Single nanoparticle applications

7800 ICP-MS – For common, routine applications

- Simpler method development, SOPs for common applications
- **HMI** – Proven robust performance
- Proven **He mode** performance
- **10 orders** wide dynamic range

NEW

Solution-Ready

Key Features of 7800 Are Field-Proven in 7700x

Updated with New Technology Developed for 7900
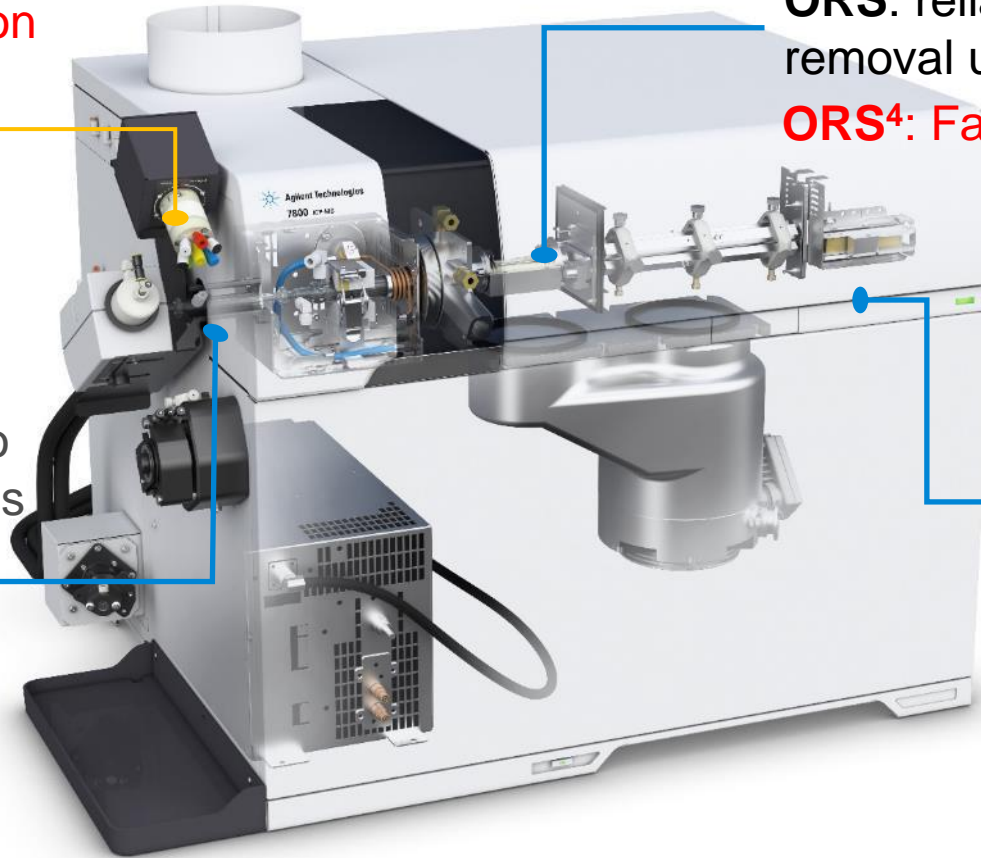
ISIS 3: High productivity option

ORS: reliable interference removal using helium cell mode

ORS^4: Fast cell gas switching

Wide linear dynamic range detector

HMI: Handles sample types up to 3% dissolved solids

ODS: Orthogonal Detector System

MassHunter 4.2 software platform

7800 – Solution-Ready ICP-MS
Simpler Routine Metals Analysis

The new Agilent 7800 includes proven, advanced hardware, and delivers high performance; but its unique feature is ***workflow simplification***:

- **Simpler sample preparation**
- **Simpler method setup**
- **Simpler routine operation**
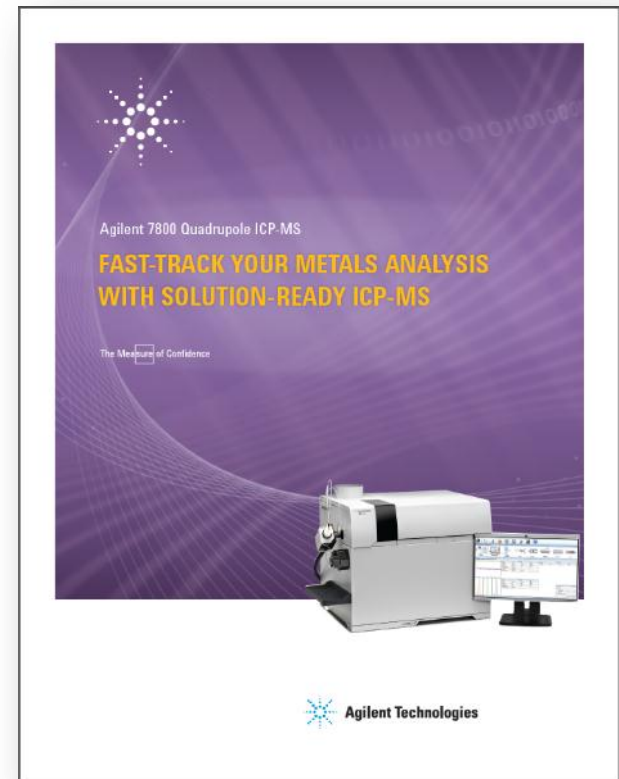
READY, SET, DETECT

Make life easier with the Solution-Ready 7800 ICP-MS
- Simplify setup and operation, with application packs for common methods
- Take the uncertainty out of complex or variable matrix sample analysis
- Make your laboratory more productive, and your results more reliable

VIEW BROCHURE

Agilent 7800 Quadrupole ICP-MS

FAST-TRACK YOUR METALS ANALYSIS WITH SOLUTION-READY ICP-MS

The Measure of Confidence

Agilent Technologies

Ready, Set, Detect
Three steps to consistently accurate results

Ready: The Agilent 7800 is configured for fast installation and simple setup:

- Guaranteed high-performance (checked on every instrument before shipment, and verified on-site)

- Tutorial disk with over 20 videos plus pdf and ppt files of key operations. Supports initial operator familiarization, and training for new users

- Standard Operating Procedures for common applications, so you can implement your methods quickly, and be confident they will deliver reliable results

Agilent Technologies
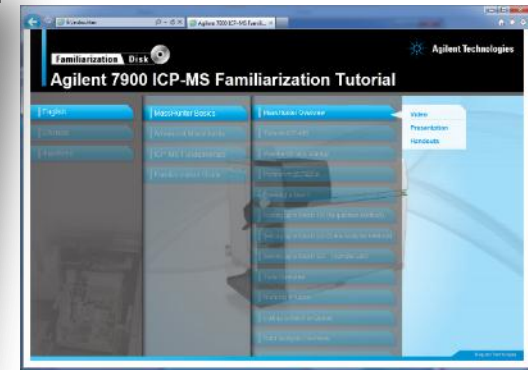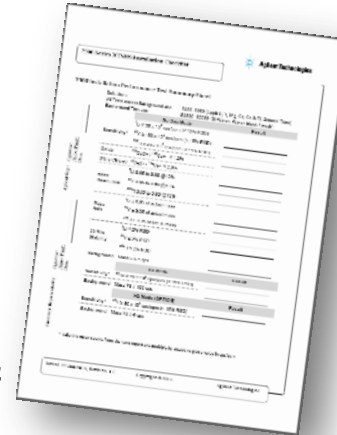
Ready, Set, Detect
Three steps to consistently accurate results

Set: The Agilent 7800 includes method setup and optimization tools to simplify your routine operation:

- Pre-set Methods provide easy setup of many common applications. Pre-set Methods pre-define the analytes, isotopes, ISTD elements, cell gas mode, integration time, and more

- For new or unusual sample types, the innovative Method Wizard can build a fully functioning method, based on a few simple questions about your samples

- Auto-optimization of hardware settings and tune parameters ensures consistent high-performance

Agilent Technologies
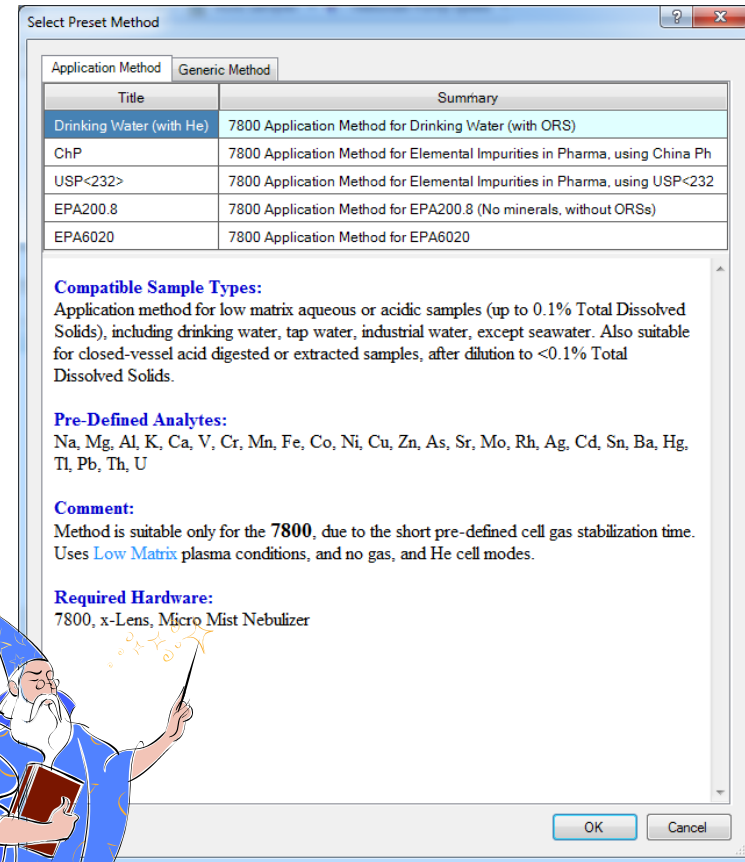
Ready, Set, Detect
Three steps to consistently accurate results

Detect: The Agilent 7800 ICP-MS provides the performance to meet your needs:

- Better matrix tolerance – HMI allows samples with up to 3% dissolved solids to be run directly, reducing the need for manual or auto-dilution, and minimizing the need for matrix-matched calibration standards

- ORS[4] collision/reaction cell with octopole ion guide is designed for helium (He) collision mode, to give reliable data for interfered elements in complex, variable matrices. No other ICP-MS system offers such simple, effective interference removal in He mode

- 10 orders dynamic range ODS detector ensures that majors and trace can be measured in one run, without specific setup or tuning. Wide dynamic range also means fewer over-range results, so higher productivity and simpler operation

Agilent Technologies
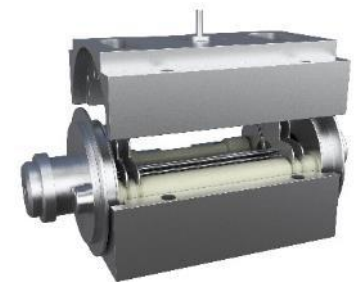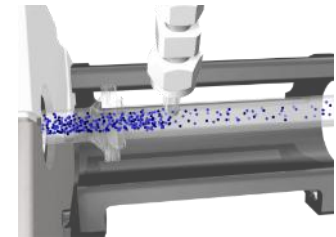
7800 Performance: HMI – High Matrix Introduction
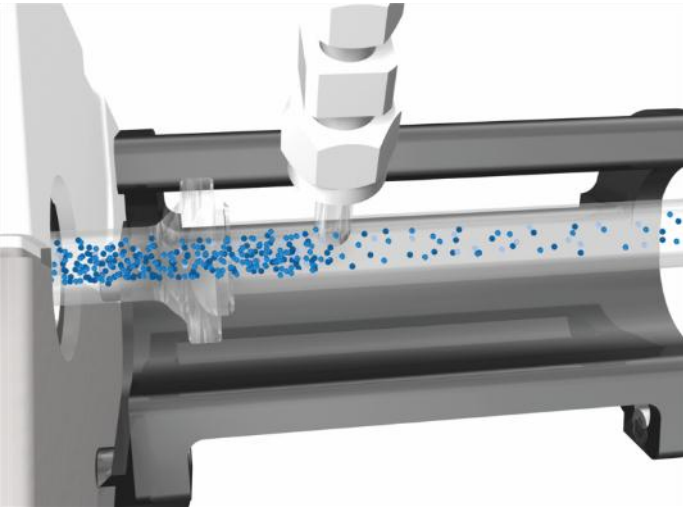
HMI is an aerosol dilution technique

It dilutes the sample using a make-up flow of argon gas, added after the spray chamber

Increases matrix tolerance 10x
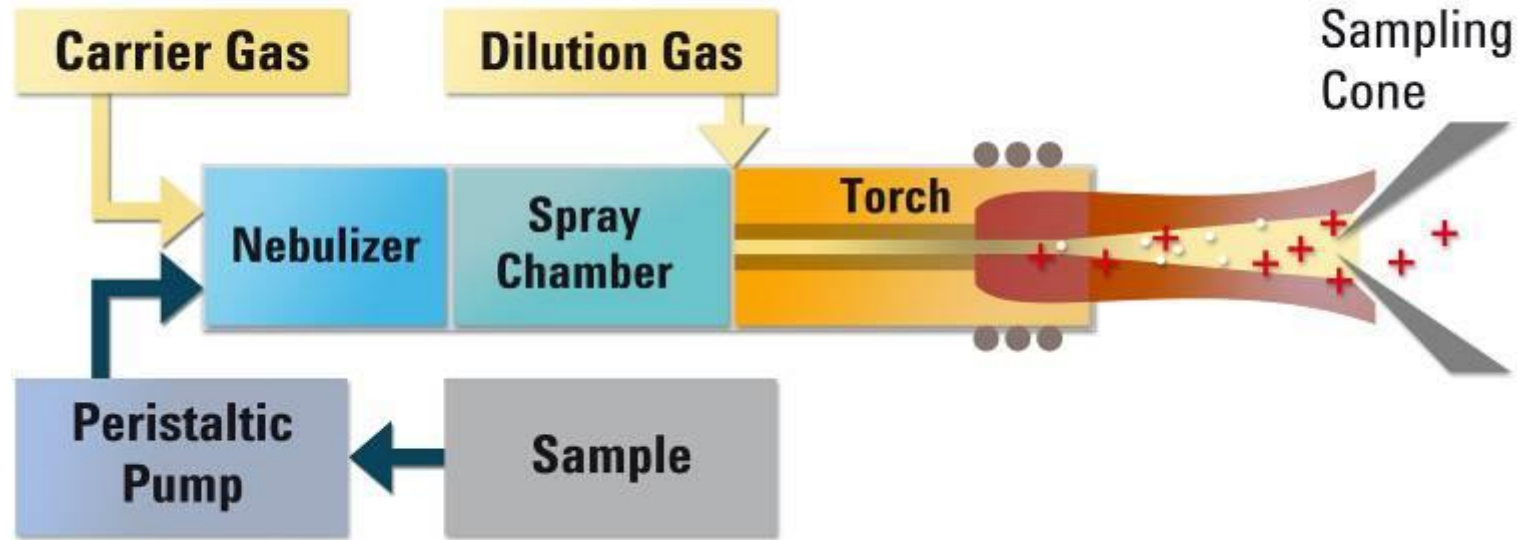
ORS 4 - 7800 Uses Helium Mode as Standard
- He Mode Reduces Typical Polyatomic Interferences

Mixed matrix blank in no gas (top) and He mode (bottom)
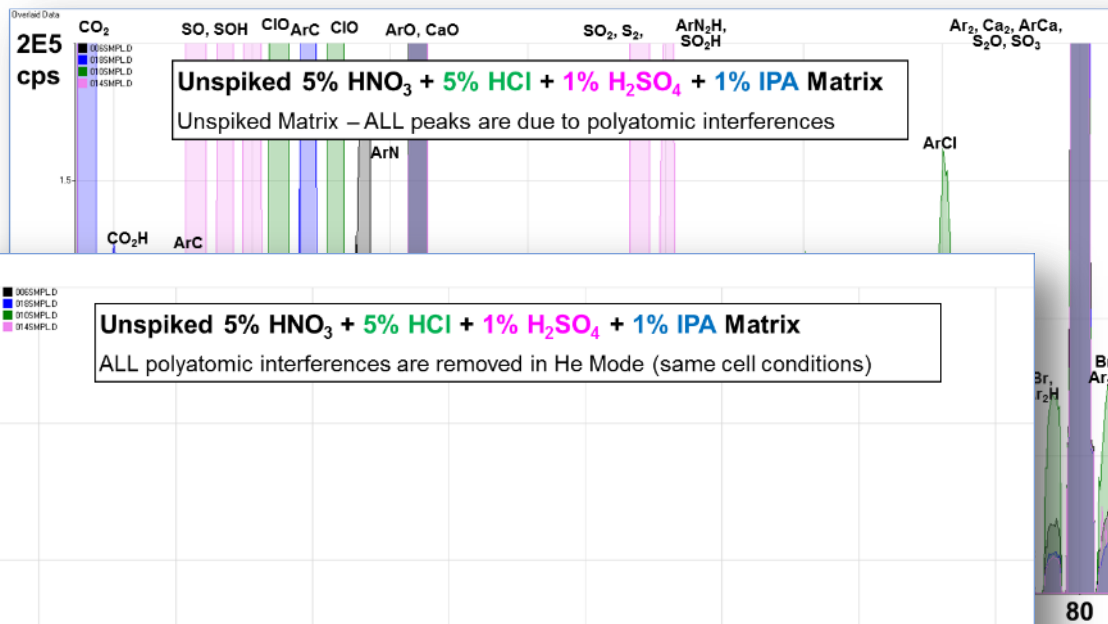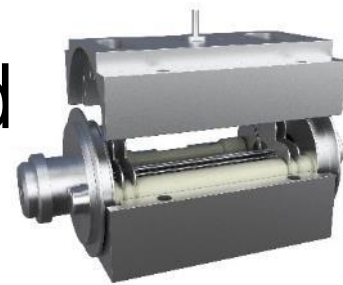
He mode on the 7800 is effective against **all common polyatomic interferences** – even from unknown or variable matrices.

He mode **simplifies method development**, by allowing a **single set of cell conditions** to be used for all analytes in all typical matrices.

Saves time and cost

Agilent Technologies

7800 Detector: 10 Orders Dynamic Range
- Simplifies Calibration and Analysis
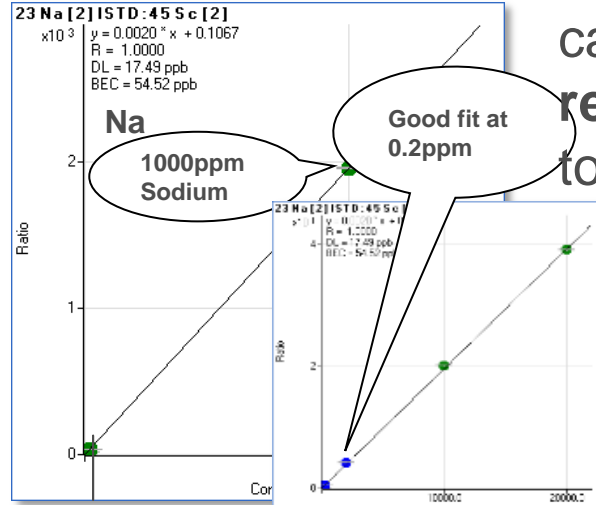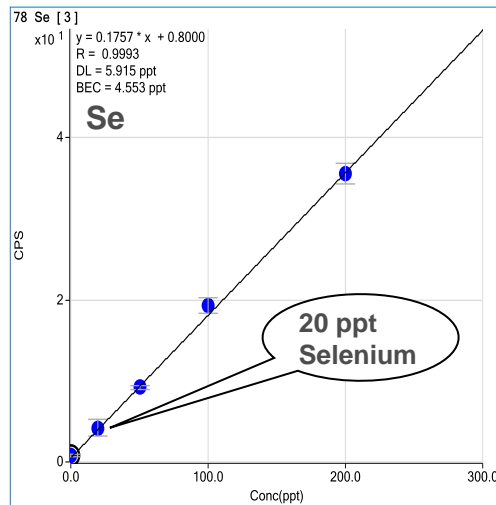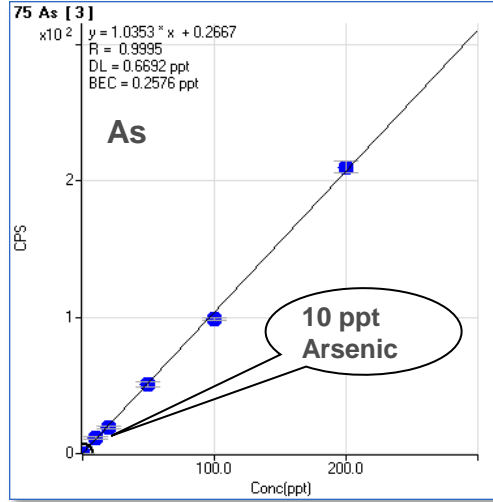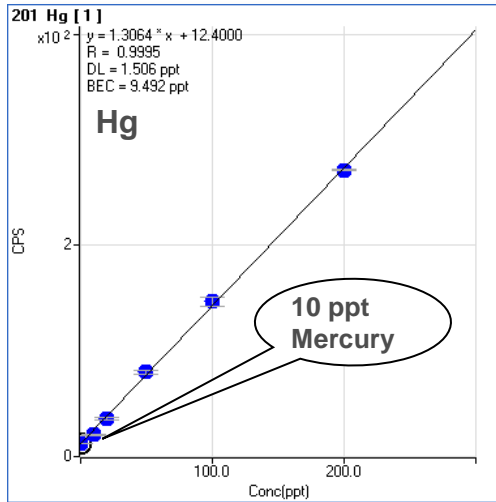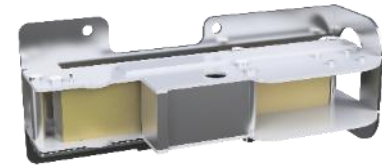
The **wide dynamic range** (10 orders) **orthogonal detector system** (**ODS**) of the 7800 allows **majors (Na, Ca,…)** and **traces (Hg, As, Se,…)** to be run in a single acquisition.

ODS simplifies your calibration strategy, and **reduces sample re-runs** due to over-range results.

Saves time and cost

Agilent Technologies

ICP-MS MassHunter 4.2
The evolution continues

Simpler, more intuitive, more powerful than ever

Agilent ICP-MS Software Development

MassHunter 4.2
Workstation Software
7800 ICP-MS Top

MassHunter 4.1

MassHunter 3

MassHunter 2

MassHunter 1

ChemStation

Agilent Technologies
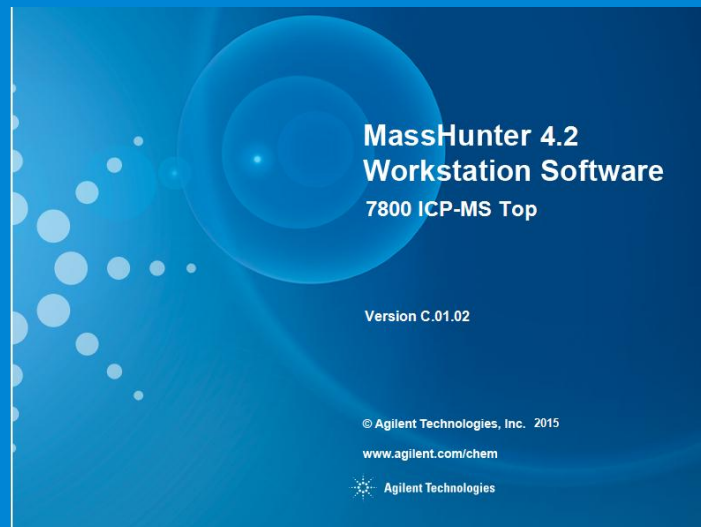
Outline of New MassHunter 4.2
- **MassHunter 4** innovation continues

Continued simplification of User Interface based on customer input

- Simplify *Data Analysis*
    - Add **Data Analysis Gadget Bar**
    - Minimize **pull-down menus**
    - Move seldom used functions to "*Settings*"

Add Significant new functions

- Add **nanoparticle analysis support**
- Improve **Chromatographic Data analysis** usability
- Add **Agile2** parameter-less integrator
- Add updated support for all new **USP <232> requirements**
- The upper limit of TRA acquisition time is extended to **25 hours***.
    - Useful for **Laser Imaging**

*Previous limit: 2.8 hours

Gadget Bars Simplify Workflow

- **Big, easy-to-read icons**

- Arranged **from left to right** in the order they are used

- **Single click executes the most commonly used task** with no menus to select from

Data Acquisition

Data Analysis
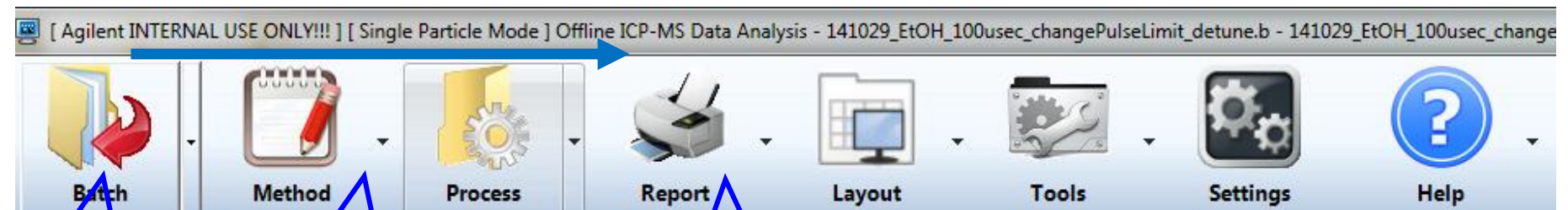
Batch at a glance view

Method Editor view

Generate Report

Backward compatible for users who are familiar with existing pull-down menus
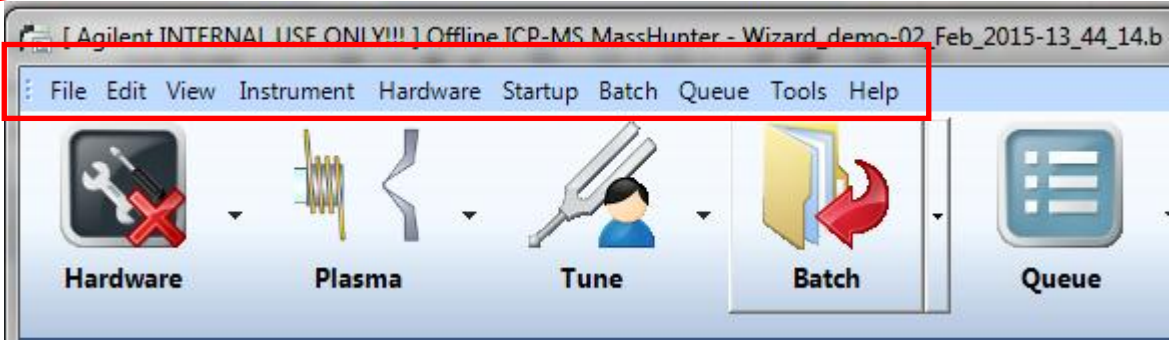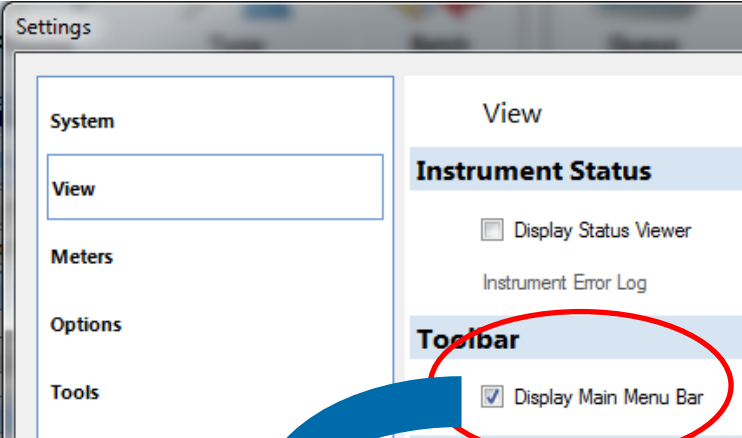
Common functions made easier to access
Batch Acquisition via Hyperlink

Updated USP<232>/<233> Pre-set Methods
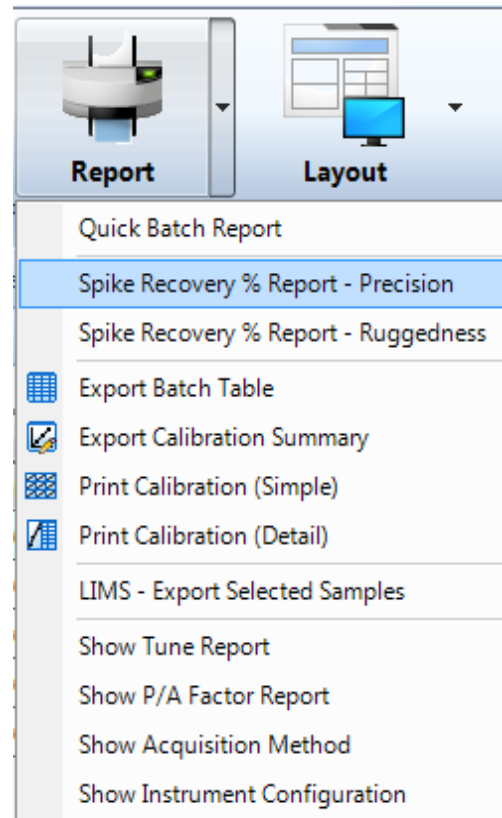## - Accessible from Method Wizard for all hardware platforms

Newly Updated USP<232>/<233> Method

Newly added features and functions

- Updated element list

- New sample types integrated to support:

  - Spike recovery

  - Precision (6 reps in a single batch)

  - Ruggedness (6 reps across multiple batches)

- New preconfigured report templates for all required QA/QC reports

Pre-configured report templates

Report | **Layout**

- Quick Batch Report
- Spike Recovery % Report - Precision
- Spike Recovery % Report - Ruggedness
- Export Batch Table
- Export Calibration Summary
- Print Calibration (Simple)
- Print Calibration (Detail)
- LIMS - Export Selected Samples
- Show Tune Report
- Show P/A Factor Report
- Show Acquisition Method
- Show Instrument Configuration

Agilent Technologies

Spike Recovery Report - does not require Intelligent Sequencing

Ruggedness Check Allows User to Easily Select Files From Different Batches.

Batch Folders: C:\agilent\ICPMH\1\DATA\ Batch1.b\, C:\agilent\ICPMH\1\DATA\ Batch2.b\, C:\agilent\ICPMH\1\DATA\ Batch3.b\

	Rjct	Acq.Date-Time	Analysis File	Data File	Sample Name	Type	Dilution
1		9/10/2010 3:05:13 PM	Batch1.batch.bin	005SPKREF.d	Test5	Spike Ref	1.0000
2		9/10/2010 3:10:12 PM	Batch1.batch.bin	015SPK.d	Test15	Spike	1.0000
3		9/10/2010 3:15:28 PM	Batch1.batch.bin	020SPK.d	Test20	Spike	1.0000
4		9/10/2010 3:21:01 PM	Batch1.batch.bin	025SPK.d	Test25	Spike	1.0000
5		10/10/2010 10:35:11 AM	Batch2.batch.bin	005SPKREF.d	Test5	Spike Ref	1.0000
6		10/10/2010 10:45:56 AM	Batch2.batch.bin	010SPK.d	Test10	Spike	1.0000
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
			.				
18		14/10/2010 1:15:35 PM	Batch3.batch.bin				1.0000

Agilent Technologies

Data Analysis Enhancements

Improved Chromatography

- **Easier to read peak labels**

- **Clearly defined integration windows**

Simple, parameter-less, Agile2 integrator works for most peak types and shapes

Agilent Technologies
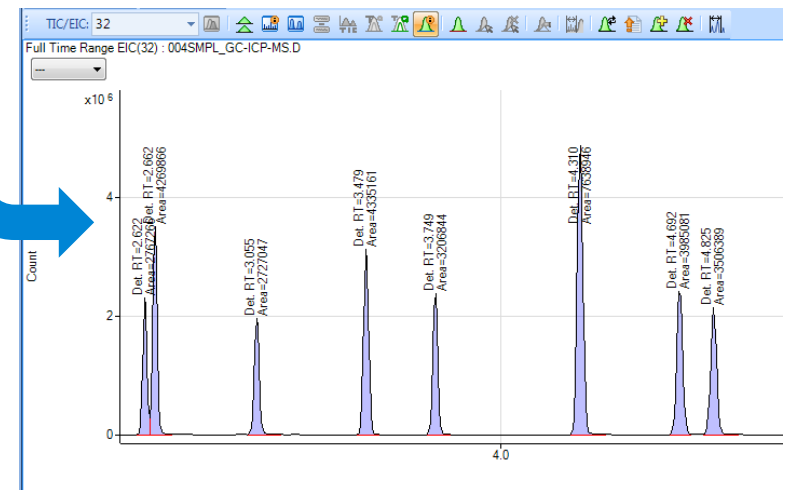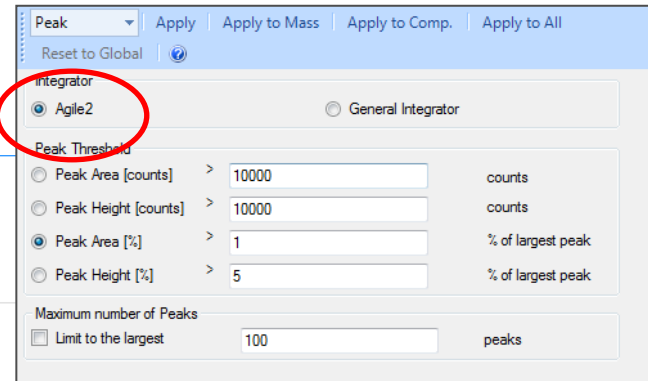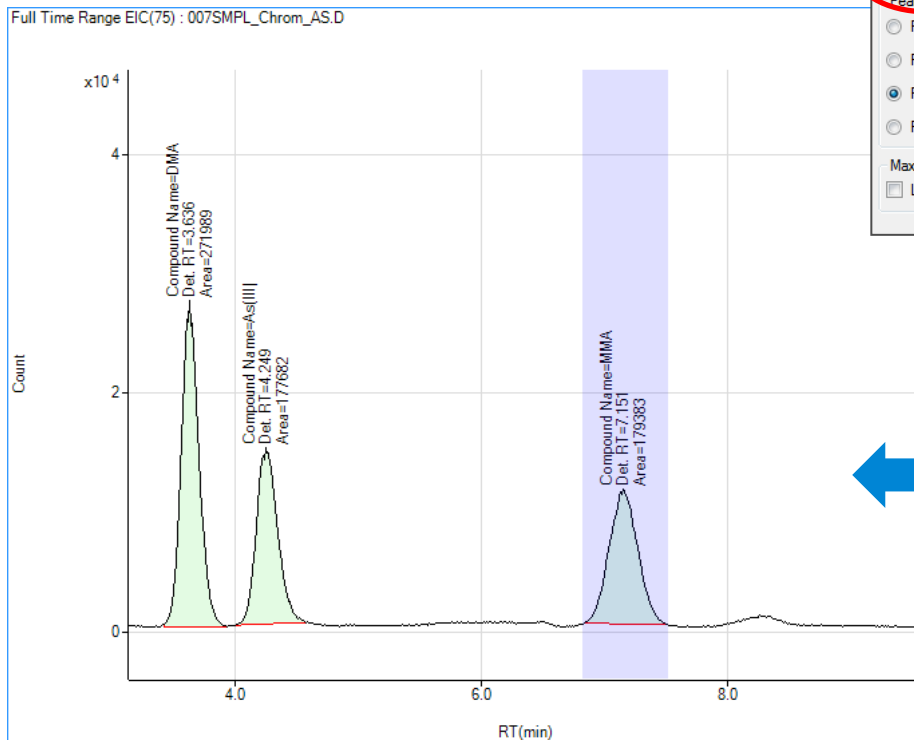
Agilent 7800 and the All New Agilent SPS 4

The first all new autosampler for atomic spectroscopy from Agilent

Novel SPS 4 Design

Superior **corrosion resistance**

Higher speed (<3 seconds sample to sample at maximum distance)

Fully integrated **optional cover** takes no extra space

Smaller footprint, especially with cover compared to competitive units

More new features

Mechanical and electrical components located in top gantry **away from samples and acid vapors**.

Peri-pump, power switch, and all electrical connections are outside the cover for **easy accessibility**

Uses **standard Bel Art racks** and tubes or **96 well microtiter plates** with optional adapter kit

Optional **dual channel flowing rinse port**

USB **Plug and Play** connectivity

Agilent 7800 plus MassHunter 4.2 plus SPS 4 Autosampler – all new for 2015!

Across the board innovation from Agilent to provide a complete analytical solution to your metals analysis needs

MassHunter 4.2
Workstation Software
7800 ICP-MS Top

Version C.01.02

© Agilent Technologies, Inc. 2015

www.agilent.com/chem

Agilent Technologies

Agilent Technologies