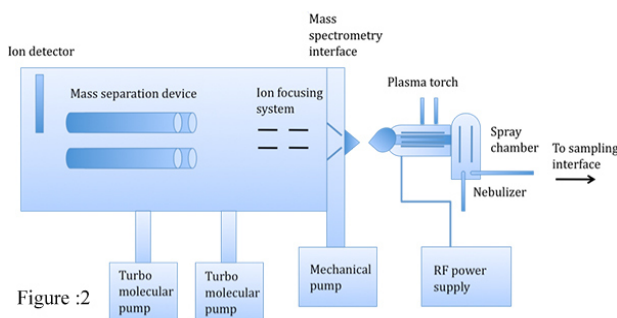


Name of Machine	<b><u>Inductively Coupled Plasma Mass Spectrometer(ICP-MS)</u></b>
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Make	<b>Agilent</b>	Model	<b>ICP-MS 7700 Series (Fig 1)</b>
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### Specification

- **Octopole Reaction System**
  - The 7700 Series incorporates a new, 3<sup>rd</sup> generation cell, the ORS<sup>3</sup>, which provides superior interference removal in He mode. This delivers improved performance in He mode.
- **He cell mode as standard:**
  - The combination of the ShieldTorch and the octopolebased cell, both unique to the 7700, enables efficient removal of interferences using an inert cell gas (He).
  - He mode is effective for all polyatomic interferences, not just reactive polyatomics.
- **Cell gas control:**
  - The 7700x has a single He cellgas controller.
- **Mass Analyzer**
  - Quadrupole mass spectrometer: The 7700 uses a high frequency (~3 MHz) quadrupole with true hyperbolic rod profile, unique in ICP-MS. A hyperbolic profile quadrupole provides superior ion transmission, resolution and abundance sensitivity at standard settings, thereby eliminating the need for multiple resolution settings to separate adjacent peaks.

### Working principle:

This technology couples use of an ICP with MS for elemental analysis by generation of ions. The ICP is involved in generation of a high temperature plasma source at ~10,000 degree Celsius, through which the pre-treated sample is passed. The elements in the sample at such high temperature are ionized and directed further into the MS. The MS then sorts the ions according to their mass/charge ratio followed by directing them to an electron multiplier tube detector. This detector then identifies and quantifies each ion.

Fig. 2

### Application

The Agilent 7700 ICP-MS provides unparalleled accuracy in high-matrix samples, redefining cell performance in helium mode with a revolutionary 3<sup>rd</sup> generation cell design the ORS3. Use of autosampler makes this easier and faster, especially for routine work and large numbers of samples.

### User Instruction

- Sample should be crushed and brought in powder form, else extra charges will apply. Only solid samples in powder form with particle size <60µm.
- Minimum quantity of 2gm.
- Users should specify the trace/REE elements to be identified.
- 30 samples will be considered in a single slot.
- Water samples should be filtered and sufficient amount will be required.
- Explosive poisonous samples and sample giving rise to toxic gases/fumes cannot be undertaken for ICP-MS analysis.

### Contact Person

<b>In-Charge</b>	Dr.Anupam Sharma (0522-2742974); <a href="mailto:anupam110367@gmail.com">anupam110367@gmail.com</a> ; <a href="mailto:anupam_sharma@bsip.res.in">anupam_sharma@bsip.res.in</a>
<b>Staff:</b>	<b>Dr.Pawan Govil (0522-2742969)</b> Email: <a href="mailto:pawan_govil@bsip.res.in">pawan_govil@bsip.res.in</a>
	<b>Ishwar Chandra Rahi(0522-2742969)</b> Email: <a href="mailto:rahi.ishwar@gmail.com">rahi.ishwar@gmail.com</a>

### charges

Sl. No.	Instrument/Analysis	Govt. Organization (University/Research Institutes) (Rates quoted = Rs. )	Student charges	Private sector /Industry	Remarks (if any)
1.	<b>ICPMS Lab</b>				
	<b>a. REEs</b>	2000.00	1800.00	4000.00	
	<b>b. Trace Elements</b> (up to 5 elements and Rs. 200/- will be charged extra for each additional element)	2000.00	1800.00	4000.00	
	<b>c. Complete package consisting of powdering, LOI, major, trace and REEs using XRF and ICP-MS (max 30 elements)</b>	4000.00	3500.00	7000.00	
	<b>Nutrient Analyzer Phosphate, Nitrate/Ntrite/Total Nitrogen, Chloride</b>	3000.00	2000.00	5000.00	
	<b>Fluoride</b>	1500.00	1000.00	2500.00	

	<b>Carbonate/Bicarbonate, Silicate, Urea, Ammonia, Boron</b>	3000.00	2000.00	5000.00	
	<b>Potassium, Calcium, Sodium</b>	1000.00	800.00	2000.00	
	<b>( Minimum charges even for one parameter except for F)</b>	1000.00	800.00	2000.00	
<b>Guideline</b>					
<ol style="list-style-type: none"> <li>1. The analytical data/spectra provided cannot be used as certificates in legal disputes.</li> <li>2. Service charges (including GST) will be payable in advance (Draft/RTGS/NEFT) in favour of “The Director, BSIP, Lucknow”. Payable at Lucknow</li> <li>3. Separate samples should be sent for different analysis. Samples will not be analysed until payment is received.</li> <li>4. In case of prepared samples, the user must specify the procedure that how the sample was prepared (complete methodology).</li> <li>5. In all correspondence related to analysis, our reference number must be mentioned.</li> <li>6. Individual Scientists and Research fellows should send their application and samples through their project head. Discount in analysis charges for research fellows of universities/institutes will be decided by the Director in consultation with respective lab.</li> <li>7. Interpretation of data/spectra will NOT be done.</li> <li>8. It is mandatory for user to acknowledge the facility in their research work and communicate the same to the respective laboratory and the Director, BSIP, Lucknow for onward communication to DST, New Delhi.</li> <li>9. For Lab visit, it is mandatory to take prior appointment from Director, BSIP before your visit. The application should be send through department/Senior official of institution/Company. No deviation will be allowed for the timings.</li> </ol>					
<b>Registration form:</b>					
Sample detail					

To be filled in by the user while submitting the form

Job No as ASE CF  
Date of submission:

(Sample Information Form)

REQUISITION FORM

**BIRBAL SAHNI INSTITUTE OF PALAEOSCIECES, LUCKNOW**

53, University Road, Lucknow, Ph. 0522-2740008, 2740399

(ASE Central Facility)

Website: [www.bsip.res.in](http://www.bsip.res.in), E mail: [gcms.bsip@gmail.com](mailto:gcms.bsip@gmail.com)

Geochemistry Lab

**(Information to be filled in by the user)**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Email and Mobile No.: \_\_\_\_\_

Category (In-house/sponsored/Govt. organization/private): \_\_\_\_\_

Number of samples: \_\_\_\_\_

Sl. No.	Sample ID	Type/Nature of Sample	Quantity	Year of collection	Lat./Long.	Remarks, if any
1						
2						
3						
4						
5						

To be filled in by the user while submitting the form

Job No as ASE CF

Date of submission:

SAMPLE REQUISITION FORM

**BIRBAL SAHNI INSTITUTE OF PALAEOSCIECES, LUCKNOW**

53, University Road, Lucknow, Ph. 0522-2740008, 2740399

(ASE Central Facility)

Website: [www.bsip.res.in](http://www.bsip.res.in), E mail: [gcms.bsip@gmail.com](mailto:gcms.bsip@gmail.com)

Geochemistry Lab

**(Information to be filled in by the user)**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Email and Mobile No.: \_\_\_\_\_

Category (Inhouse/inhouse sponsored/Govt. organization/private): \_\_\_\_\_

Number of samples: \_\_\_\_\_

Nature of samples (with details): \_\_\_\_\_

Scientific Objective of this study: \_\_\_\_\_

\_\_\_\_\_

Additional information, if any: \_\_\_\_\_

\_\_\_\_\_

Location (Lat & Long): \_\_\_\_\_

Exposed Section/Trench/Core/Others: \_\_\_\_\_

**(For office use only)**

Lab Reference No.:

R.P.C.C./ Registrar : Kindly raise the bill for the above

Total Charges:

Taxes:

Grand Total: