Name of Machine	**Bartington MS2WFP Susceptibility Meter**

Make: Bartington, UK | **Model:** Dual frequency Magnetic Susceptibility Meter (MS2WFP)

Specifications

Specification	
Calibration accuracy	1% (10ml calibration sample provided)
Measurement period (MS2)*: x 1 range x 0.1 range	1.5s SI (1.2s CGS) 15s SI (12s CGS)
Operating frequencies: LF HF	0.465kHz ±1% 4.65kHz ±1%
Amplitude of applied field	250μT peak ±10% (LF & HF)
Maximum resolution	2 x 10^{-6} SI (vol) (2 x 10^{-7} CGS) (LF & HF)
HF/LF cross calibration	0.1% worst case (can be adjusted using calibration sample)
Drift at room temperature	<2 x 10^{-5} SI (<2 x 10^{-6} CGS) in 3 minutes (after 5 minute warm-up)
Dimensions (W x H x D)	110 x 145 x 210mm
Sample cavity internal diameter	36mm
Weight	0.7kg
Enclosure material	High impact ABS

Description

MS2 sensor is used to measure the magnetic susceptibility of soil, rock and sediment samples, and is widely recognised as a standard instrument in the characterisation of the magnetic properties of soil. The dual frequency facility permits identification of superparamagnetic magnetic grains, which helps characterise the processes that affect the sample. The sensor is connected to the MS2 via a 50-ohm TNC cable. Power is supplied to an oscillator circuit within the sensor. This generates a low intensity (80 A/m) alternating magnetic field. Any material brought within the influence of this field will bring about a change in oscillator frequency. The frequency information is returned in pulse form to the MS2 where it is converted into a value of magnetic susceptibility. The sensor subjects the sample to a non-saturating field and this has the advantage of measuring initial susceptibility without destroying any sample magnetic remanence.

Principle

Susceptibility vs. Temperature - Curie temperature estimation (MS2WFP)

This system measures the magnetic susceptibility of samples over the temperature range -200°C to +850°C. It is used in the investigation of the magnetic properties of minerals and for the determination of Curie transition temperatures. The system comprises: the MS2 Meter; MS2W Water Jacketed Sensor; MS2WF Furnace; MS2WFP Power Supply Unit; and a self-contained water coolant supply, fully interlocked to prevent the MS2WF Furnace operating without coolant flow. The Geolabsoft software package (running under Windows) collects data and displays the results during the measurement sequence.

User Instructions

1. Each requisition should be addressed to XXXXXX for allotment of analysis date
2. Payment is to be made in advance through bank draft in favor of "**Director, BSIP, Lucknow**". Kindly visit our website for the updated rate-list
3. Data generated will be provided on CD or DVD
4. Sediment/Soil samples should be fully packed in 10 cc plastic bottles

MEASUREMENT/ANALYSIS

I. **Rock, Mineral and Environmental Magnetism Measurements**

1. Magnetic Susceptibility (Both Low and High Frequency)
2. Temperature Dependence of Magnetic Susceptibility (χ-T Curves) - Curie Temperature estimation of magnetic minerals in the sample

Contact Person

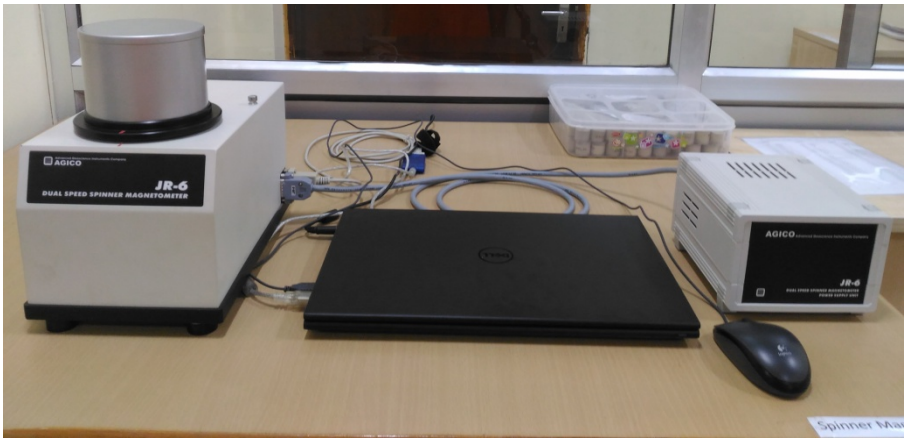
In-Charge	Dr. Binita Phartiyal: Mob. 9411856391 binita_phartiyal@bsip.res.in
Staff:	Dr. Md. Arif: Mob. 9559096764 arif@bsip.res.in

Charges

S. No.	Measurements and Analysis	Instruments Used	Rates		
			Students @25% Discount	Govt. Organizations (University/ Institute)	Private Sector/Industry
1	Magnetic Susceptibility (Both low and high freq.)	Bartington MS2B Susceptibility Meter	Rs. 38/- each specimen	Rs. 50/- each specimen	Rs. 100/- each specimen
2	Temperature Dependence of Magnetic Susceptibility	Bartington MS2WFP Susceptibility Meter	Rs.375/- each specimen	Rs. 500/- each specimen	Rs. 1000/- each specimen
3	Sample Preparation	10cc Sample Bottles, Rock Saw Cutting Unit	Rs. 38/- each specimen	Rs. 50/- for each specimen	Rs. 100/- for each specimen

Name of Machine	**AGICO JR-6 Spinner Magnetometer**

Make Advanced Geoscience Instruments Company (AGICO), Czech Republic	**Model** JR-6 Dual Speed Spinner Magnetometer



Specification

- Measurements of remanent magnetization (NRM, ARM, IRM)
- High sensitivity
- Measurement over 11 magnitudes (10^{-6} - 10^{4} A/m)
- Two speeds of rotation (high and low)
- Easy operation

Description

This is the most sensitive and accurate instrument for measurement of remanent magnetization of rocks based on classical (non-quantum, non-cryogenic) principles. Its outstanding sensitivity enables even rocks with very weak remanent magnetization to be measured, for example, various sedimentary rocks including limestones and quartzites.

Principle

Rock specimen of defined size and shape rotates at a constant angular speed in the pick-up unit inside a pair of coils. An AC voltage is induced in the coils whose amplitude and phase depend on the magnitude and direction of the magnetic remanence vector of the specimen. The voltage is amplified, filtered and digitized. By Fourier analysis the computer calculates two rectangular components of the projection of remanent magnetization vector into the plane perpendicular to the axis of rotation.

Technical specifications

Sensitivity	2.4 x 10^{-6} A/m (high speed)
Measuring range	up 12500 A/m
Speed of rotation	87.7 rps and 16.7 rps
Accuracy of absolute calibration	±3 %

Specimens to be measured

Cylinder (regularly shaped specimens)	
Diameter	25.4 ± 1 mm
Length	22.0 ± 1 mm

MEASUREMENT/ANALYSIS

I. **Rock, Mineral and Environmental Magnetism Measurements**

1. Natural Remanent Magnetization (NRM)
2. Anhysteretic Remanent Magnetization (ARM)
3. Isothermal Remanent Magnetization (IRM) - Measured in forward field steps of 20 mT, 40 mT, 60 mT, 100 mT, 300 mT, 500 mT, 700 mT, 1000 mT and in backfields of -20 mT, -30 mT, -40 mT, -60 mT, -100 mT, -300 mT respectively

II. **Palaeomagnetic Measurements**

1. Alternating Field Demagnetization - Performed in progressive AF steps of 2.5, 5, 7.5, 10, 12.5, 15, 20, 30, 40, 60, 80 100 mT respectively
2. Thermal Demagnetization - Performed in progressive Thermal steps of 100, 150, 200, 250, 300, 400, 450, 500, 525, 580, 620, 700 °C respectively

Contact Person

In-Charge	Dr. Binita Phartiyal: Mob. 9411856391 binita_phartiyal@bsip.res.in
Staff:	Dr. Md. Arif: Mob. 9559096764 arif@bsip.res.in

Charges

S. No.	Measurements and Analysis	Instruments Used	Rates		
			Students @25% Discount	**Govt. Organizations (University/ Institute)**	**Private Sector/Industry**
1	Natural Remanent Magnetization (NRM)	AGICO JR-6 Spinner Magnetometer	Rs. 38/- each specimen	Rs. 50/- each specimen	Rs. 100/- each specimen
2	Anhysteretic Remanent Magnetization (ARM)	AGICO JR-6 Spinner Magnetometer, ASC AF Demagnetizer	Rs. 38/- each specimen	Rs. 50/- each specimen	Rs. 100/- each specimen
3	Isothermal Remanent Magnetization (IRM)	AGICO JR-6 Spinner Magnetometer, ASC Impulse Magnetizer	Rs.375/- each specimen (includes six IRM steps)	Rs. 500/- each specimen (includes six IRM steps)	Rs. 1000/- each specimen (includes six IRM steps)
4	Alternating Field Demagnetization (AF Demag.)	AGICO JR-6 Spinner Magnetometer, ASC AF Demagnetizer	Rs1500/-each specimen (includes all AF steps (max eight))	Rs. 2000/-each specimen (includes all AF steps (max eight))	Rs. 4000/- each specimen (includes all AF steps (max eight)).
5	Thermal Demagnetization (Thermal Demag.)	AGICO JR-6 Spinner Magnetometer, ASC Thermal Demagnetizer	Rs1500/-each specimen (includes all Thermal steps (max eight))	Rs. 2000/-each specimen (includes all Thermal steps (max eight))	Rs. 4000/- each specimen (includes all Thermal steps (max eight))
6	Sample Preparation	10cc Sample Bottles, Rock Saw Cutting Unit	Rs. 38/- each specimen	Rs. 50/- for each specimen	Rs. 100/- for each specimen

Name of Machine	**ASC Scientific D2000 Alternating Field Demagnetizer**

Make: ASC Scientific, USA	**Model:** D2000 High-Performance Alternating Field Demagnetizer

Specification

AF Peak Field:	0.2 T (2000 Gauss)
Minimum AF Field Step:	0.0001 T (1.0 Gauss)
ARM Peak Field:	0.0015 T (1.5 Gauss)
PARM Peak Field:	0.0015 T (1.5 Gauss)
AF Decay Rates:	Eight discrete rates available
Minimum PARM Step:	0.0001 T (1.0 Gauss)
Sampling Handling	Static - Holds 4 (D-2000) 1" cyl. or cube samples
Computer Interface:	Mobile Pentium-based computer
Operating System:	Microsoft Windows

Description

The D-2000 alternating field demagnetizer is designed for high-performance rock magnetic demagnetization of discrete samples of rock or sediment. Standard features include 2000 Gauss (0.2 T) peak demagnetization field intensity, built-in ARM and partial ARM, and a computerized operator interface. The D-2000 unit consists of an AF demagnetizer coil and sample access tube and is enclosed within a mu-metal shield. The demagnetizer unit is connected to a D-2000 electronics controller and a Crest CA-9 power amplifier. The unit can demagnetize four to five samples simultaneously.

The D-2000 offer all the features of high-quality manually controlled demagnetizers plus a graphical operator interface which facilitates system setup and operation. Operator programmable settings are available for peak demagnetizing field intensity, decay rate, ARM intensity, pARM intensity, and pARM start and end points. Stepped demagnetizations and stepped ARMs and pARMs can be performed with a mouse click. Operators can even choose to work in either the S.I. or c.g.s. system of units.

User Instructions

1. Each requisition should be addressed to XXXXXX for allotment of analysis date
2. Payment is to be made in advance through bank draft in favor of "**Director, BSIP, Lucknow**". Kindly visit our website for the updated rate-list
3. Data generated will be provided on CD or DVD
4. Sediment/Soil samples should be fully packed in 10 cc plastic bottles

MEASUREMENT/ANALYSIS

I. **Rock, Mineral and Environmental Magnetism Measurements**

Anhysteretic Remanent Magnetization (ARM)/ Partial ARM

II. **Palaeomagnetic Measurements**

Alternating Field Demagnetization - Performed in progressive AF steps of 2.5, 5, 7.5, 10, 12.5, 15, 20, 30, 40, 60, 80 100 mT respectively

Contact Person

In-Charge	Dr. Binita Phartiyal: Mob. 9411856391 binita_phartiyal@bsip.res.in
Staff:	Dr. Md. Arif: Mob. 9559096764 arif@bsip.res.in

Charges

S. No.	Measurements and Analysis	Instruments Used	Rates		
			Students @25% Discount	**Govt. Organizations (University/ Institute)**	**Private Sector/Industry**
1	Anhysteretic Remanent Magnetization (ARM)	AGICO JR-6 Spinner Magnetometer, ASC AF Demagnetizer	Rs. 38/- each specimen	Rs. 50/- each specimen	Rs. 100/- each specimen
2	Alternating Field Demagnetization (AF Demag.)	AGICO JR-6 Spinner Magnetometer, ASC AF Demagnetizer	Rs1500/-each specimen (includes all AF steps (max eight))	Rs. 2000/-each specimen (includes all AF steps (max eight))	Rs. 4000/- each specimen (includes all AF steps (max eight)).
3	Sample Preparation	10cc Sample Bottles, Rock Saw Cutting Unit	Rs. 38/- each specimen	Rs. 50/- for each specimen	Rs. 100/- for each specimen

Name of Machine	ASC Scientific Impulse Magnetizer

Make: ASC Scientific, USA | **Model:** IM-10-30 Impulse Magnetizer

Specifications

Coil	Field Range	Sample Cavity	Sample Holder
#1	30 - 600 Gauss	2.00"	1" cubes/cores
#2	0.5 - 11 KGauss	2.00"	1" cubes/cores
#3	1.5 - 27 KGauss	1.25"	1" cores; 7cc sample boxes
#4	3 - 50 KGauss	0.5"	7/16" x 3/4"" vials/cores

Description

The instrument generates short duration magnetic fields within the sample coil, enabling a variety of high-field magnetic studies to be conducted on geologic samples without the need for a large electromagnet. The IM-10-30 is ideally suited for imparting IRM into a sample and anisotropy of IRM acquisition studies. It has interchangeable coils and is capable of generating fields in excess of 28 KGauss for full size paleomagnetic specimens and 50 KGauss for smaller samples. Four different plug-in coils are available with the capability of accurately generating fields ranging from 30 Gauss to 50 KGauss. Each coil comes with sample holders for accurately positioning and aligning the sample during field exposure.

Principle

The magnetic field is produced by discharge of energy from a capacitor bank through a coil surrounding the sample cavity. The capacitor bank is first charged to the desired voltage (corresponding to the desired field). It is then discharged through the coil very quickly using a high capacity SCR as a switch. Because very high current levels are involved, the coil and all circuitry are totally contained in a single case.

User Instructions

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3. Data generated will be provided on CD or DVD
4. Sediment/Soil samples should be fully packed in 10 cc plastic bottles

MEASUREMENT/ANALYSIS

I. **Rock, Mineral and Environmental Magnetism Measurements**

Isothermal Remanent Magnetization (IRM) - Measured in forward field steps of 20 mT, 40 mT, 60 mT, 100 mT, 300 mT, 500 mT, 700 mT, 1000 mT and in backfields of -20 mT, -30 mT, -40 mT, -60 mT, -100 mT, -300 mT respectively

Contact Person

In-Charge	Dr. Binita Phartiyal: Mob. 9411856391 binita_phartiyal@bsip.res.in
Staff:	Dr. Md. Arif: Mob. 9559096764 arif@bsip.res.in

Charges

S. No.	Measurements and Analysis	Instruments Used	Rates		
			Students @25% Discount	**Govt. Organizations (University/ Institute)**	**Private Sector/Industry**
1	Isothermal Remanent Magnetization (IRM)	AGICO JR-6 Spinner Magnetometer, ASC Impulse Magnetizer	Rs.375/- each specimen (includes six IRM steps)	Rs. 500/- each specimen (includes six IRM steps)	Rs. 1000/- each specimen (includes six IRM steps)

Name of Machine	ASC Scientific Thermal Demagnetizer

Make: ASC Scientific, USA	Model: TD48 High-capacity dual-chamber Thermal Specimen Demagnetizer

SPECIFICATIONS

Absolute Temp. Accuracy:	10°C
Temp. Repeatability:	1°C
Max. Temp. Gradient:	10°C Total Over 16" Sample Region of Oven Chamber with Full Sample Load. 3°C Attainable with Partial Sample Load
DC Field in Heating Chamber:	Less than 25 nT (Gammas), When System is Oriented in East-West Direction
DC Field in Cooling Chamber:	Less Than 10 nT (Gammas), 2-5 nT Typical
Heating Time:	48 Specimens From 25°C to 600°C in 45 Minutes
Cooling Time:	48 Specimens From 600°C to 40°C in 25 Minutes
Power Requirements:	115 VAC, 30 AMPS; 230V operation with supplied step-down transformer
Size:	Oven Unit - 72" (183 cm) L x 16" (40.5 cm) W x 13" (33 cm) H Control Unit - 17" (43 cm) W x 15" (38 cm) D x 7" (18 cm) H

Description

The Model TD48 Thermal Demagnetizer features a large internal diameter oven and three row sample boat for heating up to 48 one-inch diameter or one-inch cubic geologic samples in a single batch. The oven and adjacent fan-assisted cooling zone are housed in a three layer seamless magnetic shield which permits cooling of one batch while a second batch is heating. The cooling chamber has two additional shields which limit the maximum internal field to less than 10 nT with the instrument oriented perpendicular to the earth's field. The oven has three independently controlled zones - a large sample zone and two small trimmer end zones - which minimize temperature gradients across the sample zone while keeping overall oven length to a minimum. The system was designed for long service life by incorporating features into the oven and sample boat that protect the internal oven wall from damage.

User Instructions

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4. Sediment/Soil samples should be fully packed in 10 cc plastic bottles

MEASUREMENT/ANALYSIS

I. **Palaeomagnetic Measurements**

Thermal Demagnetization - Performed in progressive Thermal steps of 100, 150, 200, 250, 300, 400, 450, 500, 525, 580, 620, 700 °C respectively

Contact Person

In-Charge	Dr. Binita Phartiyal: Mob. 9411856391 binita_phartiyal@bsip.res.in
Staff:	Dr. Md. Arif: Mob. 9559096764 arif@bsip.res.in

Charges

S. No.	Measurements and Analysis	Instruments Used	Rates		
			Students @25% Discount	**Govt. Organizations (University/ Institute)**	**Private Sector/Industry**
1	Thermal Demagnetization (Thermal Demag.)	AGICO JR-6 Spinner Magnetometer, ASC Thermal Demagnetizer	Rs1500/-each specimen (includes all Thermal steps (max eight))	Rs. 2000/-each specimen (includes all Thermal steps (max eight))	Rs. 4000/- each specimen (includes all Thermal steps (max eight))
2	Sample Preparation	10cc Sample Bottles, Rock Saw Cutting Unit	Rs. 38/- each specimen	Rs. 50/- for each specimen	Rs. 100/- for each specimen

To be filled in by the user while submitting the form

Job No as ASE CF
Date of submission:

(Sample Information Form)

REQUISION FORM

BIRBAL SAHNI INSTITUTE OF PALAEOSCIECES, LUCKNOW

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

(ASE Central Facility)

Website: www.bsip.res.in, E mail: 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 REQUISION FORM

BIRBAL SAHNI INSTITUTE OF PALAEOSCIECES, LUCKNOW

53, University Road, Lucknow, Ph. 0522-2740008, 2740399
(ASE Central Facility)
Website: www.bsip.res.in, E mail: 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: