Central Instrumentation Facility (CIF) policy

Academic year 2019-20

Central Instrumentation Facility of LPU houses a wide range of high-end instruments for pushing the boundaries of research in science and technology to higher level. These instruments and facilities help the faculties, research scholars and students to carry out globally competitive research in basic, applied and medical sciences. The modern analytical instruments present in this facility offer a wide range of analytical methods/techniques for chemical/material testing and analysis. This consequently, will help researchers to publish their research findings in peer reviewed high impact factor journals. Ultimately, the concerted efforts of the centre will contribute to the upliftment of the society at large. The Centre also hopes for expansion of the facilities each year making it a core facility in the country. By realizing *CIF* we expect a prominent hub for pioneering and collaborative analytical research in our country. *CIF* runs under the purview of Division of Research and Development of the university and is expected to self-sustain by revenue generation for the upkeep and maintenance of the instruments. Hence, a nominal charge on sample testing and analysis will be collected from the users. The services of this facility are not limited only to the stakeholders of LPU but are extended to academic & research institutions, universities, industries and NGOs.

Objectives:

- To provide modern analytical instrumentation facilities to accelerate fundamental and advanced research.
- To analyse samples received from researchers of LPU and other organizations.
- To provide reliable analytical results that can be used for patenting as well as publishing in high impact factor journals.
- To provide guidance and training to personnel for acquisition of data, operation and maintenance of sophisticated instruments.
- To create centres of excellence with partnering companies of international repute.
- To sign memorandum of understanding (MoU) for collaborative analytical research.
- To organize hands on workshops, seminars, conferences and symposia along with industrial and government partners in specific instrumentation.
- To award certification programmes in advanced instrumentation techniques.

- To offer expert guidance in data interpretation (challenging data), funding options and instrumentation in consonance with industrial experts.
- To create networking between research organizations on specific instrumentation for synergetic growth.

Within the framework of CIF, several centres are established and memorandums of understanding (MoU) with reputed companies for bilateral research have been deployed. For example we have "JEOL-LPU Centre of Excellence for Advanced Microscopic Studies, Bruker-LPU Centre of Excellence for Microstructural Studies, Perkin Elmer- LPU Centre of Excellence in Material Characterization, Shimadzu-LPU Centre for Advanced Chromatography and Mass Spectrometry, and Centre for Chemical Analysis and Testing".

Sample Analysis

A list of instruments available at CIF and their scope is provided in **Annexure-I**. The details of analysis charges are listed in **Annexure-II**. Sample requisition forms for individual instruments are given in **Annexure-III**.

- 1. Samples will be analysed after the requisition is received by CIF from the user. If emergency analysis is required, special approval by recommendation of HD-DRD is required and Head, CIF will make all necessary arrangements on priority basis.
- 2. Priority will be given to faculty members running external funding projects.
- 3. Unless otherwise instructed, all samples will be held for a maximum period of 15 days under room temperature (or refrigerated at 0-10°C if specified).
- 4. Users will be contacted by UMS/email / phone once the samples are analysed.
- 5. The users are also given chance to use the software that comes along with the instrument for data processing and interpretation. For this a separate data analysis lab is established where the computers are preinstalled with all the software of various high-end instrument. A maximum of 1-hour time slot will be given per user for a log request on first come first basis by lodging a log request. If due to unforeseen situations if a user misses the session he/she is advised to rebook the slot once again and wait for their turn.
- 6. CIF will be obliged to calibrate the instruments periodically in collaboration with the companies using their standards.

Reports

1. Raw data in the form of analysis reports will be sent by email or the user may pick them

up at the reception of CIF.

2. All the records will be stored for a maximum of one year following analysis.

3. Specifications of instrumental conditions utilized in the analysis as well as calibration

curves, calculated concentrations, matching library data may be provided.

4. CIF will ensure to safeguard the data privacy and strictly preserve the IPR of the users.

Note: the format of the report is given in **Annexure-IV**

Timings:

The facility is expected to run on all working days (from 9 am to 8 pm). However, users can

deposit their samples from Monday to Friday (9am to 1pm) at the office of CIF. The facility

will abide by the holidays of the University and remain closed on these days. Saturdays are

reserved for maintenance of systems, meetings and events (workshops etc.). Users can collect

their reports from 3-5pm (Monday to Friday) at the office of CIF.

Biosafety:

Standard biosafety guidelines of governing bodies will be adopted for the running of the

facility.

Waste Disposal:

Standard waste disposal guidelines of the governing bodies will be categorically deployed for

environmental safety.

Terms and Conditions

1. All publications of research work, where in the analytical services of the CIF, LPU have

been made use of, shall be duly acknowledged (e.g., The services extended by the Central

Instrumentation Facility (CIF), Lovely Professional University in the XRD analysis are

duly acknowledged).

2. The content of our report should not be used for any advertisement, evidence, litigation

or/and quote as certificate to a third party.

3. Separate samples should be submitted for different analysis.

3

- 4. Unstable (Easily reactive in atmosphere) materials are not accepted for analysis (unless specially requested. CIF will not take the responsibility of the results obtained by the analysis as the results are dependent on the stability of the material).
- 5. Explosive materials are not accepted for analysis.
- 6. Sample vials have to be sealed properly and labelled for reference purpose.
- 7. The users are also expected to label the standards wherever need to be analysed as one of the samples and give numbering accordingly.
- 8. Slots will be allotted to users on first come first serve basis. However, for multiple slot requests by any user, the slots will be allotted based on the discretion of CIF considering the availability of the instruments.

ANNEXURE-I

List of instruments available at CIF

S.	Name of the Instrument	Make & Model	Scope
No.			
1.	Powder XRD	Bruker D8 Advance	Bruker D8 Advance is a multi-purpose research X-ray diffractometer. It is unique in its ability to analyze sample (powders and thin films) on a single instrument without compromising the analyte. It is configured with an ultrafast super speed detector SSD-XE. D8 ADVANCE XRD system is approved by Atomic Energy Regulatory Board, Mumbai. This technique is used widely in Material Science for crystalline size, stress and crystalline phase identification. It can also be used in crystallographic study of biological, chemical and soil samples by measuring spacing between lattice planes and epitaxial growth of crystallites. XRD is mostly used for synthesized new unknown crystalline materials (Organic/Inorganic/ Mineral) especially in electronic, material and pharma industry dealing with nanomaterials. The instrument is also equipped
			with ICDD PDF2, PDF4+, PDF4/Organics, PDF4/Minerals data base.
2.	Gas Chromatography with MS/MS and FID	Shimadzu TQ8040	GC-MS/MS is used
			• In research and development, production, impurity profiling and quality control departments of pharmaceutical, chemical, agricultural, and biotechnological industries.

			 In forensic toxicology to identify poisons and steroids in biological specimens. In detecting pollutants, metabolites in serum and fatty acid profiling in microbes. For the analysis of inorganic gases, aromatic solvents, detection of impurities and allergens in cosmetics.
3.	FE-SEM coupled with EDS detector; Au Sputter Coater	JEOL JSM-7610F Plus EDS: OXFORD EDS LN2 free Au Coater: JEOL Smart Coater	JEOL FESEM can be used to visualize very tiny topographic details of variety of samples. The high power optics can provide high through put and high performance. It is suitable for high spatial resolution analysis. Further, 'Gentle Beam mode' can reduce the incident electron penetration to the specimen, so that even sensitive materials can be tested. Liquid nitrogen free cooling system for EDS is robust for excellent elemental analysis at low accelerating voltage. A few nanometer thick Gold-coating can be done on samples of low electrical conductivity to get high resolution images.
4.	Electrochemical work station	Metrohm: Multi-Channel Autolab	Multi-channel Autolab is a multi-channel potentiostat/galvanostat which is useful in electrochemical measurements. The in-house available features provide

			(e.g., cyclic voltammetry, linear sweep voltammetry, chronoamperometry,
			impedance spectroscopy, charge discharge characteristics) powerful techniques
			for the understanding reaction kinetics, sensing materials, corrosion, energy
			conversion and storage studies.
5.	Fluorescence	Perkin Elmer LS6500	Fluorescence spectrometry is a fast, simple and inexpensive method to
	spectrometer		determine the concentration of an analyte in solution based on its fluorescent
			properties. This instrument can be used to measure kinetic assays to understand
			complex biological processes and mechanics of enzyme inhibition. The
			technique is also used for the analysis of dyes, LEDs, tracers, solar cells, and
			organic electroluminescent materials.
6.	Refrigerated Centrifuge	Eppendorf Refrigerated	A low temperature centrifuge is used to determine sedimentation velocity,
		Centrifuge 5804R	shape and mass of macromolecules, separation of phases, isolate viruses,
			organelles, membranes and biomolecules such as DNA, RNA and lipoproteins.
			This can also be used for phase separation of nanomaterials.
7.	Thermogravimetric	Perkin Elmer TGA 4000	Thermogravimetric analyzers measure changes in mass as a function of
	analyzer		increasing temperature or time with constant heating rate. TGA technique can
			be used to obtain
			Compositional analysis,
			Decomposition temperatures
			Engine oil volatility
			Flammability studies

			Measurement of volatiles
			Oxidative and thermal stabilities
			Catalyst and coking studies
8.	Differential scanning	Perkin Elmer DSC 6000	Differential Scanning Calorimeter (DSC) measures temperatures and heat
	calorimeter		flows associated with thermal transitions in a material. DSC technique can be
			used to obtain.
			Glass transition temperature
			Melting points
			Crystallization time and temperatures
			Heats of melting and crystallization
			Percentage of crystallinity
			Oxidative stabilities
			Heat capacity
			• Purities
			Thermal stabilities
			Polymorphism
9.	Density meter	Axis Density Meter with	A density meter is a device that measures the density of the analytes.
		analytical balance ALN-	
		220	

10.	Viscometer	LABMAN model of	A viscometer is an instrument used to measure the viscosity of a fluid.	
		LMDV-200 with small		
		sample adaptor, low		
		viscosity adaptor and		
		software.		
11.	Probe Sonicator	LABMAN MODEL PRO-	Sonicator is an electronic instrument that carries out sonication i.e., the	
		500 with probe assembly	application of sound energy to the sample of interest. The instrument converts	
		of 9.5mm, 6 mm and 3mm	electric energy to ultrasonic sound energy.	
12.	Particle size and Zeta	Malverrn Zetasizer Nano	The particle size analyzer is the ideal tool for sub-micron analysis of size and	
	potential analyzer	ZS90	zeta potential of dispersed particles of mineral, chemical, ceramic, polymer,	
			pharmaceutical and agricultural sciences.	
13.	HPLC with RI and PDA	Shimadzu Prominence I	The technique is used in the analysis of pharmaceutical, toxicological,	
	detectors	LC2030 Plus	environmental, and biological samples.	

			RI detector (universal detector)-Any component that differs in refractive
			index from an elute can be detected despite its low sensitivity.
14.	FTIR with Diamond	Perkin-Elmer Spectrum 2	Highly Sophisticated infrared spectroscopy system with Diamond ATR helps
	ATR	with ATR & Pellet	in nondestructive sample analysis.
		accessories	

ANNEXURE-II

Analysis charges (in INR) for using instruments in CIF

S. No.	Instrument Name	Internal (per sample/per hour)	Academia/R&D (per sample/per hour)	Industry (per sample/per hour)
1	Powder XRD (Bruker D8 Advance)	150 per sample 300 per hour	350 per sample 700 per hour	1000 per sample 1200 per hour
2	GC*-MS/MS (Shimadzu TQ8040)	750 (Qualitative) /1500 (Quantitative)/3000 (per hour)	1500 (Qualitative)/4000(Quantit ative)/10000 (per hour)	2000 (Qualitative)/5000(Quantit ative)/15000 (per hour)
3	GC with FID*	500 (Qualitative)/1000 (Quantitative)/2000 (per hour)	1000 (Qualitative)/2000(Quantit ative)/5000 (per hour)	1500 (Qualitative)/3000(Quantit ative)/7000 (per hour)
4	MS/MS	500	800	1200
5	FE-SEM# coupled with EDS detector, Au Sputter Coater (FE-SEM: JEOL JSM-7610F Plus EDS: OXFORD EDS LN2 free, Au Coater: JEOL Smart Coater)	500 (FESEM), 750 (FESEM+EDAX+ mapping)	1000(FESEM), 1500 (FESEM+EDAX), 1800 (FESEM+EDAX+ mapping)	2000(FESEM), 3000 (FESEM+EDAX), 4000 (FESEM+EDAX+ mapping)
6	Electrochemical work station** (Metrohm: Multi-Channel Autolab AUT.MAC.204)	100 /200 (per hour)	300/800 (per hour)	500/1200 (per hour)

7	Fluorescence Spectrometer (Perkin Elmer LS6500)	50	300	500
8	Centrifuge (Eppendorf Refrigerated Centrifuge 5804R)	100 (per hour)	300 (per hour)	500 (per hour)
9	Thermogravimetric analyzer (Perkin Elmer TGA 4000)	150 (Extra INR100/100 °C rise in temperature after 600 °C up to 1000 °C, @ 10 °C/min)	500 (Extra INR 150/100 °C rise in temperature after 600 °C up to 1000 °C, @ 10 °C/min)	1000 (Extra INR 300/100 °C rise in temperature after 600 °C up to 1000°C, @ 10°C/min)
10	Differential scanning calorimeter## (Perkin Elmer DSC 6000)	200 per hour (RT to 450°C, @ 10 °C/min)	600 per hour (RT to 450°C, @ 10 °C/min)	1200 per hour (RT to 450°C, @ 10 °C/min)
		300 per hour (RT to -70 °C, @ -10 °C/min)	700 per hour (RT to -70 °C, @ -10 °C/min)	1500 per hour (RT to - 70°C, @ -10 °C/min)
11	Density meter (Axis Density Meter with analytical balance ALN-220)	50	200	500
12	Viscometer (LABMAN model of LMDV-200 with small sample adaptor, low viscosity adaptor and software.)	50	250	500

13	Particle size and Zeta potential analyzer (Malverrn Zetasizer Nano ZS90)	100	500	1200
14	FTIR with Diamond ATR & Pellet accessories (Perkin Elmer Spectrum 2)	50	200	700
15	HPLC* with RI and PDA detector (Shimadzu Prominenece I LC2030 Plus)	500 (Qualitative)/1000 (Quantitative)/3000 (per hour)	1000 (Qualitative)/2000(Quantit ative)/5000 (per hour)	2000 (Qualitative)/4000(Quantit ative)/10000 (per hour)

Note:

- 1 The user should provide standard/reference (compound/solution) for the analysis.
- 2 If instrument run time is more than 30 minutes for single sample analysis then hourly basis charges will be applicable.
- 3 For external users, @ 18.00 % GST or above (as per the prevailing norms) will be applicable in the above rate list.
- 4 Please add courier and CD charges of INR 100 (conditions applied).
- * Specific column must be provided by user if required.
- **The user should provide standard/reference compound (solution)/working electrodes and if someone need glassy carbon electrode from CIF, then INR 300 will be charged extra for electrode and binder used for it. For impedance measurement, the user is expected to provide fully prepared samples (e.g. pellets having silver contacts).
- 7 # Cost of gold coating is INR 100 per sample.
- 8 ## Alumina crucible will be used.
- 9 Sample requisition form for each instrument is available in the form of annexure.
- After successful submission of filled sample requisition form and payment, the samples should reach CIF within seven working days along with a copy of acknowledgement receipt.

ANNEXURE-III

CENTRAL INSTRUMENTATION FACILITY (CIF)

LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for	<u>r Powder XRD</u>
Date:	
Name of User:	Designation of User:
Contact No.:	Email ID:
Purpose of analysis:	No. of Samples:
Name of Guide/Supervisor:	Department:
User: Internal/External (if internal please specify reg	istration no/UID)
Payment options:	
Option 1: Demand Draft	
The DD (in favour of Lovely Professional University	ty) should be submitted personally or by
post at the following address: Central Instrumentation	n Facility (CIF), Division of Research and
Development, Block 38-106, Lovely Professional U	Jniversity, Jalandhar - Delhi G.T. Road,
Phagwara, Punjab (India) – 144411	
Option 2: Online transfer	
Transfer cash in A/C no.	, Bank name, IFSC
code	
Use for PAYTM	

Samples should be sent to: Central Instrumentation Facility (CIF), Division of Research and Development, Block 38-106, Lovely Professional University, Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) – 144411.

Information of samples

Details (Chemical, Physical, Radioactive, Hazardous, others):

Specifications to be used during measurement

S. No.	Sample	Nature of sample	Scanning range in	Scanning step	Scanning rate	JCPDS mapping
	Name/code	(e.g. Powder/ Thin	2-Theta (Degrees)	in 2-Theta	(Degree/min)	required
		Film)		(Degrees)		(Yes/No)
1						
2						
3						
4						
5						

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information. Samples should be very fine powder (If it is metal piece, the surface should be smooth and parallel to each other). Powder samples should be enough to cover 10 mm x 1 mm circular cavity. The metallic specimens should have a minimum physical dimension of 15 x 10 x 3 mm (not exceeding 5 mm thickness). Maximum time for each sample is 30 minutes. Exceeding 30 minutes, charges will be taken as per hour.

Undertaking

- ➤ I/We undertake to abide by the safety, standard sample preparation guidelines and precautions during testing of samples. I/We do understand the possibility of samples getting damaged during handling and analysis. I/We shall not claim for any loss/damage to samples.
- ➤ CIF shall not take any responsibility about the analysis, interpretation and publication of data acquired by the end user.
- ➤ We agree to acknowledge CIF, LPU in our publications and thesis if the results from CIF instrumentation are incorporated/used in them.
- ➤ I/We hereby declare that the results of the analysis will not be used for the settlement of any legal issue.
- ➤ CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges under special circumstances.

➤ If the user requests to return the samples without performing analysis then 50% of the analysis charges will be refunded (GST paid will not be refunded).					
Name and signature of the u	ser	Name and signature of the supervisor/PI			
	Signature of the HOD	with stamp			
	For office use of	<u>nly</u>			
Lab reference no:	No. of samples:	Invoice/Receipt no:			
Samples received on:	Samples analyzed on:.	Results delivered on:			
Name and signature of opera	ator Nar	ne and signature of laboratory in-charge			

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Requisition form for GC-MS/MS/GC-FID

Date	e:									
Nam	ne of User:						De	signation	of User:	
Con	Contact No.:							Email ID:		
Purp	ose of ana	lysis:					No	. of Samp	les:	
Nam	ne of Guide	e/Supervisor:					De	partment:		
Useı	r: Internal/l	External (if inter	nal please	e specify	regist	ration	no/UID)			
Pay	ment optic	ons:								
The post	Option 1: Demand Draft The DD (in favour of <u>Lovely Professional University</u>) should be submitted personally or by post at the following address: Central Instrumentation Facility (CIF), Division of Research and Development, Block 38-106, Lovely Professional University, Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) – 144411									
Opt	ion 2: Onl	ine transfer								
	sfer cash i	in A/C no			,	Bank	name	•••••	••••••	IFSC
Use		for PAYTI	M							
Samples should be sent to: Central Instrumentation Facility (CIF), Division of Research and Development, Block 38-106, Lovely Professional University, Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411 Information of samples										
Deta	ails (Chemi	cal, Physical, R	\ <u></u>							
S.	Sample with	Analysis type	Column	Temp.	Initial	Final	Solubility	Temp. ramp	Expected	Required
No.	nature	(Qualitative	Type (with	ramp	oven	oven	with	(°C/min)	mol. wt.	GC-
	(volatile/non- volatile)	/Quantitative/Method development)	dimensions)	(°C/min)	Temp. (≥	temp. (≤	preferred solvents		and scan range	MS/MS
	voiatile)	development)			(≥ 50°C)	325°C)	sorvents		range	
1										
2										

3					
4					
5					

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Sample quantity required is 1ml with concentration of 1mg/100ml. Attach extra sheet for any additional information. Please ensure that sample does not contain water.

Undertaking

- ➤ I/We undertake to abide by the safety, standard sample preparation guidelines and precautions during testing of samples. I/We do understand the possibility of samples getting damaged during handling and analysis. I/We shall not claim for any loss/damage to samples.
- ➤ CIF shall not take any responsibility about the analysis, interpretation and publication of data acquired by the end user.
- ➤ We agree to acknowledge CIF, LPU in our publications and thesis if the results from CIF instrumentation are incorporated/used in them.
- ➤ I/We hereby declare that the results of the analysis will not be used for the settlement of any legal issue.
- ➤ CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges (after deduction of GST) under special circumstances.

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Nama and	cionofiira	α t	tha	HCAP
i vaime amu	l signature	()I	uic	usci

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:
Samples received on:	Samples analyzed on:	Results delivered on:

Name and signature of operator

Name and signature of laboratory in-charge

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Requisition form for FESEM

Date:	
Name of User:	Designation of User:
Contact No.:	Email ID:
Purpose of analysis:	No. of Samples:
Name of Guide/Supervisor:	Department:
User: Internal/External (if internal please specify registration no/	(UID)
Payment options:	
Option 1: Demand Draft The DD (in favour of <u>Lovely Professional University</u>) should be post at the following address: Central Instrumentation Facility (C Development, Block 38-106, Lovely Professional University, J Phagwara, Punjab (India) – 144411	IF), Division of Research and
Option 2: Online transfer	
Transfer cash in A/C no, Bank nat code	me, IFSC
Use for PAYTM	
Samples should be sent to: Central Instrumentation Facility (Development, Block 38-106, Lovely Professional University, Phagwara, Punjab (India) - 144411	
<u>Information of samples</u>	
1. Total number of samples:	
2. Please read carefully before filling the form.	
In the Table, please mention the type of sample: Metallic/ Semiconductor/ Carbon materials/ Thin films or Others. For	•

details. Please also mention the type of detector to be used, whether Secondary Electron

Detector (SE) or Back Scattered Electron Detector (BSE). No magnetic samples will be tested. Dimension of Thin films should not exceed 1cm*1cm.

Please mention whether EDAX study is required or not for samples. If yes, please mention the type of study required, whether: Qualitative microanalysis/ Quantitative microanalysis/ X-ray mapping/ Line scan or all of the above.

A maximum of 5 samples per requisition form can be allowed. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Please provide sufficient amount of samples for the analysis.

3. Details of Samples

S. No.	Sample ID	Type of	Gold coating	Study using	EDAX	Type of EDS
		Sample	required?	Detector	required?	analysis
			(Yes/No)		(Yes/No)	
1						
2						
3						
4						
5						

Undertaking

- ➤ I/We undertake to abide by the safety, standard sample preparation guidelines and precautions during testing of samples. I/We do understand the possibility of samples getting damaged during handling and analysis. I/We shall not claim for any loss/damage to samples.
- > CIF shall not take any responsibility about the analysis, interpretation and publication of data acquired by the end user.
- ➤ We agree to acknowledge CIF, LPU in our publications and thesis if the results from CIF instrumentation are incorporated/used in them.
- > I/We hereby declare that the results of the analysis will not be used for the settlement of any legal issue.

➤ CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges (after deduction of GST) under special circumstances.						
Name and signature of the u	ser	Name and signature of the supervisor				
	Signature of the HOD For office use					
Lab reference no: Samples received on:	No. of samples: Samples analyzed on:		Invoice/Receipt no: Results delivered on:.			
Name and signature of opera	tor N	ame and signati	ure of laboratory in-ch	narge		

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Requisition form for Electrochemical Workstation

Date:	
Name of User:	Designation of User:
Contact No.:	Email ID:
Purpose of analysis:	No. of Samples:
Name of Guide/Supervisor:	Department:
User: Internal/External (if internal please specify registrati	on no/UID)
Payment options:	
Option 1: Demand Draft The DD (in favour of Lovely Professional University) sh post at the following address: Central Instrumentation Facil Development, Block 38-106, Lovely Professional Univer Phagwara, Punjab (India) – 144411	lity (CIF), Division of Research and
Option 2: Online transfer	
Transfer cash in A/C no, Ba code,	ank name, IFSC
Use for PAYTM	
Samples should be sent to: Central Instrumentation Face Development, Block 38-106, Lovely Professional Univ	

Phagwara, Punjab (India) - 144411

Information of samples

Details (Chemical, Physical, Radioactive, Hazardous, others):

Table: Measurement details

S. No.	Sample code/ID	Nature of sample (e.g., solid electrolyte, solution, thin film etc.)	Type of Measurement	Reference electrode	Set parameters
1					
2					
3					
4					
5					

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information. Please ensure that sample does not contain water.

Undertaking

- ➤ I/We undertake to abide by the safety, standard sample preparation guidelines and precautions during testing of samples. I/We do understand the possibility of samples getting damaged during handling and analysis. I/We shall not claim for any loss/damage to samples.
- > CIF shall not take any responsibility about the analysis, interpretation and publication of data acquired by the end user.
- ➤ We agree to acknowledge CIF, LPU in our publications and thesis if the results from CIF instrumentation are incorporated/used in them.
- ➤ I/We hereby declare that the results of the analysis will not be used for the settlement of any legal issue.
- ➤ CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges (after deduction of GST) under special circumstances.

Name and signature of the user

Name and signature of the supervisor/PI

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:			
Samples received on:	Samples analyzed on:	Results delivered on:			
Name and signature of opera	ntor Name and signa	Name and signature of laboratory in-charge			

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Requisition form for Fluorescence Spectroscopy

Date:	
Name of User:	Designation of User:
Contact No.:	Email ID:
Purpose of analysis:	No. of Samples:
Name of Guide/Supervisor:	Department:
User: Internal/External (if internal please specify registration	ion no/UID)
Payment options:	
Option 1: Demand Draft The DD (in favour of Lovely Professional University) sh post at the following address: Central Instrumentation Faci Development, Block 38-106, Lovely Professional Univer Phagwara, Punjab (India) – 144411	lity (CIF), Division of Research and
Option 2: Online transfer	
Transfer cash in A/C no, Ba code,	ank name, IFSC
Use for PAYTM	
Samples should be sent to: Central Instrumentation Face Development, Block 38-106, Lovely Professional Univ	• • •

Phagwara, Punjab (India) - 144411

Information of samples

Details (Chemical, Physical, Radioactive, Hazardous, others):

Measurement details

S.	Sample	Nature of	Compositi	Solubility	Primary	Secondary	Information
No.	code/ID	sample	on of the	data	filter	filter	about
		(e.g., liquid)	samples		(Excitation	(Emission	standard/refe
					filter)	filter)	rence
1							
2							
3							
4							
5							

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information.

Undertaking

- ➤ I/We undertake to abide by the safety, standard sample preparation guidelines and precautions during testing of samples. I/We do understand the possibility of samples getting damaged during handling and analysis. I/We shall not claim for any loss/damage to samples.
- ➤ CIF shall not take any responsibility about the analysis, interpretation and publication of data acquired by the end user.
- ➤ We agree to acknowledge CIF, LPU in our publications and thesis if the results from CIF instrumentation are incorporated/used in them.
- ➤ I/We hereby declare that the results of the analysis will not be used for the settlement of any legal issue.
- ➤ CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges (after deduction of GST) under special circumstances.

Name and signature of the user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:			
Samples received on:	Samples analyzed on:	Results delivered on:			
Name and signature of opera	ntor Name and signatu	are of laboratory in-charge			

LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for Refrigerated Centrifuge

Date:					
Name	of User:			Designation of User:	
Conta	act No.:			Email ID:	
Purpo	ose of analysis:			No. of Samples:	
Name	of Guide/Supe	ervisor:		Department:	
User:	Internal/Extern	nal (if internal pleas	e specify registration	n no/UID)	
Paym	nent options:				
The I post a Deve	t the following lopment, Block	of <u>Lovely Professio</u> address: Central Ins	strumentation Facilit	ald be submitted pers ty (CIF), Division of F ty, Jalandhar - Delhi	Research and
Optio	on 2: Online tr	ansfer			
	fer cash in A/C		, Ban	k name	, IFSC
Use .	1	for PAYTM			
Devel Phage	lopment, Blocl wara, Punjab (I	k 38-106, Lovely I ndia) - 144411 <u>Infor</u>		ity (CIF), Division o sity, Jalandhar - De):	
Meas	urement detai	ls			
S.	Sample	Nature of sample	Set parameters	No. of process	If any other
No.	code/ID	(e.g., DNA in solution)	(e.g., Temperature)	cycles with duration	
1	İ				İ

2			
3			
4			
5			

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information.

Undertaking

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- ➤ I/We hereby declare that the results of the analysis will not be used for the settlement of any legal issue.
- ➤ CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges (after deduction of GST) under special circumstances.

Name and	signature	of the	user
----------	-----------	--------	------

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:
Samples received on:	Samples analyzed on:	Results delivered on:

Name and signature of operator

Name and signature of laboratory in-charge

CENTRAL INSTRUMENTATION FACILITY (CIF) LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for Thermo Gravimetric Analysis (TGA)

Date:	
Name of User:	Designation of User:
Contact No.:	Email ID:
Purpose of analysis:	No. of Samples:
Name of Guide/Supervisor:	Department:
User: Internal/External (if internal please specify registration no/U	JID)
Payment options:	
Option 1: Demand Draft The DD (in favour of Lovely Professional University) should be post at the following address: Central Instrumentation Facility (CII Development, Block 38-106, Lovely Professional University, Japhagwara, Punjab (India) – 144411	F), Division of Research and
Option 2: Online transfer	
Transfer cash in A/C no, Bank nam code	ie, IFSC
Use for PAYTM	
	NE D

Samples should be sent to: Central Instrumentation Facility (CIF), Division of Research and Development, Block 38-106, Lovely Professional University, Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411

Information of samples

Details (Chemical, Physical, Radioactive, Hazardous, others): Please fill Table 2.

Table 1. Measurement details

S.	Sample	Nature of sample	Heatin	Heating		Atmosphere	Aim of analysis		
No.	code/Id	(e.g. Organic/	range		range		rate	to be used	(e.g. Tg
		Inorganic	From	То		N ₂ /Air	determination,		
		Polymer/Alloys					Melting point		
		etc.)					determination		
							etc.)		
1									

2				
3				
4				
5				

Table 2: Please furnish the following information for each sample.

Sample.	Ele.	Mol.	Whether	Whether	the samp	ole contains	Decompositi	Tg	Meltin
code	compo	formula	it will	any of these materials?			on	(if	g point
			react	Halogen Toxic Radioactive			temperature	know	if
			with				(if known)	n)	known
			Al_2O_3 ,						?
			Pt, Rh?						

Note: Maximum limit 5 samples per requisition form. It is mandatory to fill all the fields in the above Table. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Please furnish other information about the sample in Table 2. Attach extra sheet for any additional information.

Undertaking

- ➤ I/We undertake to abide by the safety, standard sample preparation guidelines and precautions during testing of samples. I/We do understand the possibility of samples getting damaged during handling and analysis. I/We shall not claim for any loss/damage to samples.
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- ➤ We agree to acknowledge CIF, LPU in our publications and thesis if the results from CIF instrumentation are incorporated/used in them.
- > I/We hereby declare that the results of the analysis will not be used for the settlement of any legal issue.
- ➤ CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges (after deduction of GST) under special circumstances.

Name	and	signature	of	the	user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:
Samples received on:	Samples analyzed on:	Results delivered on:

Name and signature of operator

Name and signature of laboratory in-charge

CENTRAL INSTRUMENTATION FACILITY (CIF) LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for Differential Scanning Calorimeter (DSC)

Date:								
Name	of User:					D	esignation	of User:
Conta	ct No.:					Е	mail ID:	
Purpose of analysis: No. of Samples:							oles:	
Name	of Guide	e/Supervisor:				D	epartment:	
User:	Internal/	External (if intern	al pleas	e spec	cify registi	ration no/UID)	
Paym	ent optio	ons:						
The Dost a Devel	DD (in fart the follow opment,	nand Draft vour of <u>Lovely Prowing</u> address: Ce Block 38-106, Lo ijab (India) – 1444	ntral Insovely P	strum	entation F	acility (CIF),	Division of	f Research and
Optio	on 2: Onl	ine transfer						
	fer cash	in A/C no	• • • • • • • • • • • • • • • • • • • •		,	Bank name	••••••	, IFSC
Use		for PAYTM						
Devel Phagy	opment, vara, Pun	ld be sent to: Ce Block 38-106, I ijab (India) - 1444	Lovely 1 11 <u>Infor</u>	Profe: matic	ssional Ui on of sam	niversity, Jala ples	andhar - D	Delhi G.T. Road
	•	ical, Physical, Rac		e, Haz	zardous, o	thers): Please	fill Table 2	2.
		surement details.			1	T		1
		Nature of sample		g	Heating rate ³			
No	code/Id	(E.g. Organic/ Inorganic	From	То	rate	to be used N ₂ /Air	analysis required	(E.g. Tg determination,
		Polymer/Alloys	110111			11411311	(DSC,	Melting point
		etc.)					TGA	determination
							etc.)	etc.)

2				
3				
4				
5				

Table 2: Please furnish the following information for each sample.

Samp	Ele.	Mol.	Whethe	Whether the sample contains		Decompositi	Tg	Meltin	
le	compo	formula	r it will	any of these materials?			on	(if	g point
code			react	Halogen	Toxic	Radioactive	temperature	know	if
			with				(if known)	n)	known
			Al ₂ O ₃ ,						?
			Pt, Rh?						

Note: Maximum limit 5 samples per requisition form. It is mandatory to fill all the fields in the above Table 1. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Please furnish other information about the sample in Table 2. Attach extra sheet for any additional information.

Undertaking

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- > CIF, LPU reserves the rights to return the samples without performing analysis and will refund the analytical charges (after deduction of GST) under special circumstances.

Name and signature of the user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:			
Samples received on:	Samples analyzed on:	Results delivered on:			
Name and signature of opera	ntor Name and signat	Name and signature of laboratory in-charge			

LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for Density Meter

Date:							
Name o	of User:	D	Designation of User:				
Contact	t No.:	E	Email ID:				
Purpose	e of analysis:		N	No. of Samples:			
Name o	of Guide/Supervi	D	Department:				
User: Internal/External (if internal please specify registration no/UID)							
Payme	nt options:						
The DI post at to Develop	the following ad	Lovely Professional Unived dress: Central Instrumentat 8-106, Lovely Professiona	tion Facility (CIF), l	Division of Research and			
Option	2: Online trans	sfer					
Transfer cash in A/C no, Bank name, IFSC code							
Use for PAYTM							
Develo		88-106, Lovely Profession	nal University, Jala	, Division of Research and andhar - Delhi G.T. Road,			
Details (Chemical, Physical, Radioactive, Hazardous, others):							
Measurement details							
S. No.	Sample	Nature of sample	Set parameters	If any other			
	code/ID	(e.g., solution, gel etc.)	(e.g., concentration))			
1							
2							

3		
4		
5		

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information.

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Name and signature of the user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:
Samples received on:	Samples analyzed on:	Results delivered on:

Name and signature of operator

Name and signature of laboratory in-charge

LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for Viscometer

Date:				
Name o	of User:		Desi	gnation of User:
Contact	No.:		Ema	il ID:
Purpose	e of analysis:		No.	of Samples:
Name o	of Guide/Supervi	sor:	Depa	artment:
User: In	nternal/External	(if internal please specify	registration no/UID)	
Payme	nt options:			
The DI post at to Develop	the following add	Lovely Professional Univerdress: Central Instrumentaries 3-106, Lovely Professiona	tion Facility (CIF), Div	vision of Research and
Option	2: Online trans	sfer		
	r cash in A/C n	0	, Bank name	, IFSC
Use	for	PAYTM		
Develo		nt to: Central Instrumenta 8-106, Lovely Profession a) - 144411 <u>Information of</u>	nal University, Jaland	
Details	(Chemical, Phys	sical, Radioactive, Hazardo	ous, others):	
Measur	rement details			
S. No.	Sample	Nature of sample	Set parameters	If any other
	code/ID	(e.g., solution, gel etc.)	(e.g., concentration)	
1				
2				
3				
4				

5

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information.

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Name and signature of the user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:
Samples received on:	Samples analyzed on:	Results delivered on:

Name and signature of operator

Name and signature of laboratory in-charge

LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

		Requisition	form for Par	ticle Size and Zet	tapotential A	<u>nalyzer</u>	
Date:							
Name	of User	:			Designa	ntion of User:	
Conta	act No.:				Email I	D:	
Purpo	se of ana	alysis:			No. of S	Samples:	
Name	of Guid	e/Supervisor:			Departn	nent:	
User:	Internal/	External (if int	ernal please sp	ecify registration	no/UID)		
Payn	ient opti	ons:					
Optio	on 1: Dei	mand Draft					
The I	DD (in fa	vour of Lovely	y Professional	University) shoul	d be submitte	d personally	or by
post a	t the foll	owing address:	Central Instru	mentation Facility	(CIF), Divisi	on of Researc	h and
Deve	lopment,	Block 38-106	, Lovely Profe	essional Universit	y, Jalandhar -	Delhi G.T.	Road,
Phagy	wara, Pui	njab (India) – 1	44411				
Optio	on 2: On	line transfer					
- Trans	fer cash	in A/C no		Bank	name	,	IFSC
code.							
Use .		for PAY	ГМ				
				umentation Facilit	tv (CIF). Divi	sion of Rese	arch and
_				fessional Univers			
	-	njab (India) - 14	•	0.00.00.00.00.00.00.00.00.00.00.00.00.0	, , , , , , , , , , , , , , , , , ,	20111	11000
	., 0.200, 2 0.2	.jue (111010) 1		tion of samples			
Detai	ls (Chem	ical Physical	<u>-</u>	(azardous, others)			
	`	t details:		and and and the control of	•		
111003	S. No.	Sample ID	Sample Type	Sample Location	Mode	Remarks*	
	D. 110.	Sumple ID	Sumple Type	Sample Docation	(Dry/Liquid)	ACTION NO	
			i e e e e e e e e e e e e e e e e e e e	i l		i	•

-	_
	r
4	ı

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information. For liquid mode: 5 gm of sediment sample in pasty form (if the sample is estuarine/marine - make sure the sample is free from salinity, shells and organic matter). For dry Mode: 10 gm of sand sample (free from salinity and shells). Please specified the sample type (Sand/ Clay/ Soil/ Sediment/ Synthetic Material) and sample collection location (River/ Estuary Beach/ Offshore/ Others)

Undertaking

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Name and signature of the user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:
Samples received on:	Samples analyzed on:	Results delivered on:
Name and signature of opera	tor Name	and signature of laboratory in-charge

LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for FTIR with Diamond ATR

Date:		_				
Name	of User:				Designation of	User:
Conta	act No.:				Email ID:	
Purpo	se of anal	ysis:			No. of Samples	s:
Name	of Guide/	Supervisor:			Department:	
User:	Internal/E	xternal (if internal	please spec	ify registrati	on no/UID)	
Paym	ent option	ns:				
The I post a Devel	OD (in fav at the follov lopment, I	wing address: Cen	tral Instrume vely Profess:	entation Faci	ould be submitted persolity (CIF), Division of Resity, Jalandhar - Delhi	esearch and
Optio	on 2: Onli	ne transfer				
	fer cash ir		••••••	, Ва	nk name	, IFSC
Use	• • • • • • • • • • • • • • • • • • • •	for PAYTM				
Devel	lopment, 1		vely Profes		cility (CIF), Division of ersity, Jalandhar - Dell	
			Informatio	n of sample	<u>s</u>	
Detail	ls (Chemic	cal, Physical, Radio	oactive, Haz	ardous, othe	ers):	
Meas	urement o	details				
S.	Sample	Nature of sample	Compositi	Solubility	IR range and mode	Matrix type
No.	code/ID	(e.g., solid,	on of the	data	required	(e.g., KBr
		liquid)	samples		(Transmittance/Absorba	etc.)
1					nce)	
1	ĺ					

2			
3			
4			
5			

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Attach extra sheet for any additional information. Sample should not contain water/moisture.

Undertaking

- ➤ I/We undertake to abide by the safety, standard sample preparation guidelines and precautions during testing of samples. I/We do understand the possibility of samples getting damaged during handling and analysis. I/We shall not claim for any loss/damage to samples.
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Name and signature of the user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:
Samples received on:	Samples analyzed on:	Results delivered on:
Name and signature of opera	tor Name and signat	ure of laboratory in-charge

LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone no: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

Requisition form for HPLC

Date:	
Name of User:	Designation of User:
Contact No.:	Email ID:
Purpose of analysis:	No. of Samples:
Name of Guide/Supervisor:	Department:
User: Internal/External (if internal please specify registra	ation no/UID)
Payment options:	
Option 1: Demand Draft The DD (in favour of <u>Lovely Professional University</u>) s post at the following address: Central Instrumentation Fa Development, Block 38-106, Lovely Professional Univ Phagwara, Punjab (India) – 144411	cility (CIF), Division of Research and
Option 2: Online transfer	
Transfer cash in A/C no, F	Bank name, IFSC
Use for PAYTM	
Samples should be sent to: Central Instrumentation F Development, Block 38-106, Lovely Professional Uni Phagwara, Punjab (India) - 144411	

Information of samples

Details (Chemical, Physical, Radioactive, Hazardous, others):

Measurement details

S.	Sam	Analysis type	Column	Injecti	Colu	Mode of	Flow rate	Run	Mobile	Detector
No.	ple	(Qualitative/Q	Type	on	mn	operatio	(ml/min)	Time	phase	UV/VIS,
	Nat	uantitative/M	(with	volume	Temp	n		(Min.		PDA
	ure	ethod	dimensi	(µl)	. (°C)	(Isocratic)		(λmax), RI
		development)	ons)			/Gradien				
						t)				
1										
2										
3										
4										
5										

Note: Maximum limit 5 samples per requisition form. If the sample(s) are hazardous to the personnel or equipment then kindly provide appropriate handling instructions. Kindly consult CIF for sample/sample preparation before bringing your samples for analysis. Sample quantity required is 1ml with concentration of 1mg/ml.

Undertaking

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- ➤ CIF shall not take any responsibility about the analysis, interpretation and publication of data acquired by the end user.
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Name and signature of the user

Name and signature of the supervisor/PI

Signature of the HOD with stamp

For office use only

Lab reference no:	No. of samples:	Invoice/Receipt no:			
Samples received on:	Samples analyzed on:	Results delivered on:			
Name and signature of opera	ntor Name and signat	Name and signature of laboratory in-charge			

CENTRAL INSTRUMENTATION FACILITY (CIF) LOVELY PROFESSIONAL UNIVERSITY

Jalandhar - Delhi G.T. Road, Phagwara, Punjab (India) - 144411, Telephone: +911824444535, Fax no: +91824-506111, Email-id: cif@lpu.co.in

ANAL	YSIS REPO	<u>ORT</u>					
Requisition form ID: Sample receipt date:			Report No: Analysis report date:				
ΓS:							
Result (Units)	Method of analysis	Instrument used	Sample analysis date with time				
he data privacy	and strictly pres	serve the IPR of	the users.				
ted values we	re obtained by	use of procedu	ires appropriate for				
ched to this re	port						
from the instr	rument.						
		Name and si	gnature of operator				
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