NATIONAL INSTITUTE FOR INTERDISCIPLINARY SCIENCE & TECHNOLOGY

THIRUVANANTHAPURAM

TESTING & ANALYTICAL CHARGES

(W.E.F. 1-4-2011)

TESTING & ANALYTICAL CHARGES AT NIIST, TRIVANDRUM

(W.e.f. 1-4-2011)

(Applicable service charges are to be collected from the customer over and above the rates given below)

Division: **Agro processing & Natural Products**

Sl.No.	Facility/ Equipment	Rate			Remarks
		For R&D Instt.& SSI	Students	Industry	
1	GC-MS (Shimadzu 5050A-Model)	1200/-	600/-	2400/-	Per sample
2	F.T.I.R. (Perkin Elmer Model Spectrum100)	500/-	250/-	1000/-	„

Division: Biotechnology

A. Assays

Sl.No.	Facility/ Equipment	Rate			Remarks
		For R&D Instt.& SSI	Students	Industry	
1	Anti-Microbial activity assay				
	(a) Anti-bacterial	1000/-	750/-	2000/-	2 cultures
	(b) Anti-fungal	1000/-	750/-	2000/-	2 cultures
	(c) Anti yeasts	1000/-	750/-	2000/-	2 cultures
2	Compositional analysis of biomass				
	(a) Cellulose and hemicelluloses	5000/-	3500/-	10000/-	Per sample
	(b) Carbohydrate analysis	5000/-	3500/-	10000/-	„
3	Alcohol analysis by GC	2500/-	1750/-	5000/-	„

B. Supply of Cultures

Sl.No.	Facility/ Equipment	Rate			Remarks
		For R&D Instt.& SSI	Students	Industry	
1	Supply of culture(Freeze-dried)	400/-	300/-	2000/-	Per sample
2	Supply culture (active on slant)	600/-	500/-	3000/-	Fungi only
3	Freeze-drying of culture	2000/-	1500/-	10000/-	Ten ampoules

Division: Chemical Sciences & Technology

Sl.No.	Facility/ Equipment	Rate			Remarks
		For R&D Instt.& SSI	Students	Industry	
1	HNMR Proton NMR (where the dueterated solvent is provided by the party)	600/-	400/-	1200/-	Per sample
	Proton NMR (in $CDCl_3$ provided from the laboratory)	800/-	500/-	1600/-	„
	Proton NMR (in $CDCl_3$+ small amount of DMSO-d_6) (for all NMR experiments which require methanol-d_4, aceton-d_6 etc. Solvents will have to be provided by the party)	1000/-	600/-	2000/-	„
2	CNMR (for concentrated samples requiring running time 1 hour or less)	1200/-	750/-	2400/-	„
	Cost per additional hour required (in case of dilute samples)	1000/-	600/-	2000/-	Per hour
3	IR Spectroscopy	360/-	180/-	720/-	Per sample
4	CHNS Analysis	2600/-	1300/-	5200/-	„
	For Carbon, Hydrogen and Nitrogen and Sulphur (additional)	850/-	425/-	1700/-	„
5	MALDI-TOF MS (Axima CFR Plus Kratos Analytical Shimadzu)	1400/-	700/-	2800/-	„
6	500 MHz FTNMR (Brucker AV500)				
	^{1}H NMR	600/-	500/-	1200/-	per sample
	^{13}C NMR	1200/-	1000/-	2400/-	„
	2D NMR	2400/-	2000/-	4800/-	„
	^{31}P NMR	900/-	750/-	1800/-	„
7	HRTEM	6000/-	3000/-	12000/-	„
	Carbon Coated Grid	250/-	250/-	300/-	„

Division: Materials & Minerals

Sl.No.	Facility/ Equipment	Rate			Remarks
		For R&D Instt.& SSI	Students	Industry	
1	SEM Study	2000/-	1000/-	4000/-	per sample (Two pictures)
2	EDS Two frame analysis	2000/-	1000/-	4000/-	per sample
3	EDS With X-ray dot mapping	6000/-	3000/-	12000/-	„
4	LN_2 (supply)	60/-	50/-	100/-	Per litre
5	XRD analysis	725/-	375/-	1450/-	Per sample
6	Optical Metallography (Leica DMRX microscope with digital camera and material work station)	650/-	325/-	1300/-	sample preparation charges extra
7	Stereomicroscope (Zeiss microscope with digital camera)	650/-	325/-	1300/-	Per sample
8	Microhadness tester (Clemex, JS 2000)	750/-	375/-	1500/-	„
9	Mechanical Testing Facilities Instron UTM; 10 ton static Universal Testing Machine- [Instron, UK, Model; 1195-5500R]	1000/-	750/-	2000/-	„
10	Brinell/Vickers Hardness Testing; Imported hardness tester INDENTEC, UK	400/-	200/-	800/-	„
11	Instron Dynamic test system for fracture roughness/ fatigue etc; 10 ton Dynamic testing machine Instron, UK	6000/-	3000/-	12000/-	Minimum/sample (6 hrs Maximum)
12	Model 8801 Wear & friction monitor DUCOM Instruments Model TR20LE	650/-	325/-	1300/-	Per sample
13	Carbon & Sulphur determination Strohlein Apparatus MMD/BSMR/2201	360/-	180/-	720/-	for each element
14	Surface area Analyzer Tristar 3000MMD/BSMR/0101	2500/-	1250/-	5000/-	„
15	Thermo gravimetric/Differential thermal analyzer- Diamond TG/DTA Perkin Elmer	2400/-	1200/-	4800/-	Simultaneous analysis
16	FT IR	500/-	250/-	1000/-	Per sample

Division: Process Engineering & Environmental Technology

A. Instrumental Analysis

Sl.No.	Facility/ Equipment	Rate			Remarks
		For R&D Instt.& SSI	Students	Industry	
1	Particle size analysis/Sedigraph 5001 Micromeritics upto 2µm	1450/-	725/-	2900/-	per sample
	Particle size analysis/Sedigraph 5001 Micromeritics upto 1µm	1750/-	875/-	3500/-	„
2	Brightness meter Color touch ISO, Technidyne Corpn. Brightness	950/-	475/-	1900/-	„
	Brightness, yellowness Colour (Lab) values	1450/-	725/-	2900/-	„
3	Zeta Potential Analyzer	2200/-	1100/-	4400/-	„
4	Viscometer Haake Viscosity (Single) of liquid	1450/-	725/-	2900/-	„
	With Sample preparation	2200/-	1100/-	4400/-	„

B. Chemical & Physical Characterization

Sl.No.	Facility/ Equipment	Rate			Remarks
		For R&D Instt.& SSI	Students	Industry	
1	SiO_2, Al_2O_3, TiO_2, CaO, K_2O, Na_2O, Fe_2O_3, LOI	3700/-	1850/-	7400/-	per sample
2	Determination of SiO_2, Al_2O_3, Fe Determination of SiO_2, Al_2O_3, TiO_2	1900/-	950/-	3600/-	„
3	Determination of SiO_2 only	1200/-	600/-	2400/-	„
4	Determination of Al_2O_3 only	1200/-	600/-	2400/-	„
5	Determination of Fe_2O_3only	1200/-	600/-	2400/-	„
6	Determination of Fe_2O_3& TiO_2	1200/-	600/-	2400/-	„
7	Determination of SiO_2 & Al_2O_3	1500/-	750/-	3000/-	„

8	Determination of Al_2O_3 & Fe_2O_3	1250/-	625/-	2500/-	„
9	Determination of SiO_2 & Fe_2O_3	1500/-	750/-	3000/-	„
10	Determination of Na_2O & K_2O	1250/-	625/-	2500/-	„
11	Determination of K_2O, Na_2O & CaO	2400/-	1200/-	4800/-	„
12	LOI	1250/-	625/-	2500/-	„
13	K_2O, Na_2O & Fe_2O_3	2500/-	1250/-	5000/-	„
14	Ash content for carbonaceous materials	1250/-	625/-	2500/-	„
15	Iron oxide for Fe_2O_3 only	1250/-	625/-	2500/-	„
16	Complete chemical analysis of high alumina refractories (Al_2O_3 more than 60% and SiO_2, Al_2O_3, MgO, CaO, K_2O, Na_2O & LOI)	3600/-	1800/-	7200/-	„
17	Sieve Analysis (one sieve anal.)	500/-	250/-	1000/-	„
18	Coarse particles in clay per IS: 505-1979	600/-	300/-	1200/-	„
19	Grit content	525/-	275/-	1050/-	„
20	Slaking test	325/-	175/-	650/-	„
21	True specific gravity	650/-	325/-	1300/-	„
22	Apparent specific gravity/relative density	800/-	400/-	1600/-	„
23	pH value	300/-	150/-	600/-	„
24	Water soluble matter in clay	300/-	150/-	600/-	„
25	Acid soluble matter in clay	350/-	175/-	700/-	„
26	Bleachability (reductive)	2200/-	1100/-	4400/-	„

C. Testing facilities at Environmental Technology section

Sl. No.	Facility/ Equipment	Method/ Instrument	Rate ***Minimum no. of samples =5***			Charges for additional sample (50% for students 200% for Industry)
			For R&D Instt.& SSI	Students	Industry	
1	Colour Comparison	Visual	200/-	100/-	400/-	50/-
2	Conductivity	Conductivity Meter-Schott	350/-	175/-	700/-	70/-

3	pH	pH MeterSystronics 320	800/-	400/-	1600/-	160/-
4	Suspended Solids	Gravimetry	850/-	425/-	1700/-	170/-
5	Settle able solids	Gravimetry	850/-	425/-	1700/-	170/-
6	Volatile Suspended solids	Gravimetry	1000/-	500/-	2000/-	200/-
7	Dissolved solids	Gravimetry	850/-	425/-	1700/-	170/-
8	Total solids	Gravimetry	850/-	425/-	1700/-	170/-
9	Turbidity	Nephleometry/ELICO Nephelometer	350/-	175/-	700/-	70/-
10	Acidity	Titrimetry	850/-	425/-	1700/-	170/-
11	Alkalinity	Ttrimetry	850/-	425/-	1700/-	170/-
12	Aluminium	VA,Calorimetry 746 VA TraceAnalyzer, Elico	1000/-	500/-	2000/-	200/-
13	Arsenic	VA,746 VA Trace Analyzer	2000/-	1000/-	4000/-	400/-
14	Boron	Calorimetry, Elico	850/-	425/-	1700/-	170/-
15	BOD	5-Day, 20◦C	1350/-	675/-	2700/-	270/-
16	Cadmium	VA, 746 VA Trace Analyzer	850/-	425/-	1700/-	170/-
17	Calcium	Titrimetry	850/-	425/-	1700/-	170/-
18	Carbon dioxide	Titrimetry	850/-	425/-	1700/-	170/-
19	COD	Dichromate	1000/-	500/-	2000/-	200/-
20	Chloride	ISE	850/-	425/-	1700/-	170/-
21	Chloride (Residual)	Titrimetry	850/-	425/-	1700/-	170/-
22	Chromium	VA, 746 VA Trace Analyzer	2000/-	1000/-	4000/-	400/-
23	Cobalt	VA, 746 VA Trace Analyzer	1000/-	500/-	2000/-	200/-
24	Copper	VA, 746 VA Trace Analyzer	1000/-	500/-	2000/-	200/-
25	Dissolved Oxygen (DO)	DO Meter	1000/-	500/-	2000/-	
26	Fluoride	ISE	850/-	425/-	1700/-	170/-
27	Hardness	Titrimetry	850/-	425/-	1700/-	170/-
28	Iron	VA, Calori-metry 746 VA Trace Analyzer	850/-	425/-	1700/-	170/-
29	Lead	VA, 746 VA Trace analyzer	850/-	425/-	1700/-	170/-
30	Manganese	VA, 746 VA Trace Analyzer	1000/-	500/-	2000/-	200/-
31	Magnesium	TiTrimetry	850/-	425/-	1700/-	170/-
32	Nickel	VA, 746 VA Trace Analyzer	1000/-	500/-	2000/-	200/-
33	Nitrate	Colorimetry Elico	1000/-	500/-	2000/-	200/-
34	Nitrite	Colorimetry, Elico	850/-	425/-	1700/-	170/-

35	Nitrogen (Ammoniacal)	ISE/Distillation	850/-	425/-	1700/-	170/-
36	Nitrogen Kjhelda)	ISE/Distillation	1350/-	675/-	2700/-	270/-
37	Oil & Grease	Gravimetry	850/-	425/-	1700/-	170/-
38	Phenols	Colorimetry, Elico	850/-	425/-	1700/-	170/-
39	Phosphate (Ortho)	Colorimetry, Elico	850/-	425/-	1700/-	170/-
40	Phosphate (Total)	Colorimetry, Elico	1350/-	675/-	2700/-	270/-
41	Flame PhotoMetry, Systronics 128	Chem. Lab	100/-	50/-	200/-	20/-
42	Silica	Colorimetry, Elico	850/-	425/-	1700/-	170/-
43	Sodium	Flame Photometry, Systronics 128	850/-	425/-	1700/-	170/-
44	Sulphate	Turbidimetry Gravimetry	850/-	425/-	1700/-	170/-
45	Sulphide	Iodometry	1000/-	500/-	2000/-	200/-
46	Sulphide	Iodometry	1000/-	500/-	2000/-	200/-
47	Tin	VA, 746 VA Trace Analyzer	1000/-	500/-	2000/-	200/-
48	Vanadium	VA, 746 VA Trace Analyzer	2000/-	1000/-	4000/-	400/-
49	Zinc	VA, 746 VA Trace Analyzer	1000/-	500/-	2000/-	200/-
50	Microbiological Testing Total plate count	Spread plate, Laminar flow Chamber	1000/-	500/-	2000/-	200/-
	Total Coliform Count	MPN, Laminar Flow chamber	1000/-	500/-	2000/-	200/-
	Faecal Streptococci	MPN/Spread Plate, Laminar Flow chamber	1350/-	675/-	2700/-	270/-
	Suspended Solids	MPN, Laminar Flow chamber	1350/-	675/-	2700/-	270/-
51	TOC analyzer	Combustion method LiquiToC II ElementaR	4000/-	2000/-	8000/-	800/-