CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

CHARUSAT

Formed under Gujarat State Act No. : 8 of 2009

• Accredited Grade A by NAAC • Accredited Grade A by KCG

REF: CHA/ADM/IDMS/18/02/20

2nd February, 2018

WORK ORDER

To,
B L ENGINEERING
PLOT NO-455, PHASE-2,
G.I.D.C. VATVA,
AHMEDABAD -382 455
MOBILE: +91-99242 02022

Subject: Supply and Installation of 5 KG/HR CAPACITY ELECTRIC FIRED SOLID WASTE PYROLYSIS SYSTEM at Charusat campus.

REF: Your Offer Ref No. BLE/AB/J/QTN/15-16/51 dated 18/09/2017 (Annexure-1) and subsequent negotiation on dated 12/12/2017.

Dear Sir,

With above mentioned reference, we are pleased to place a Work Order for Supply and Installation of 5 Kg/Hr capacity Electric Fired Solid Waste Pyrolysis System at Charusat campus as per specifications and item rates mentioned in Annexure-1 attached herewith.

The total work value shall be **Rs. 8,96,800/- (Rupees Eight Lacs Ninety Six Thousand Eight Hundred only).** The actual payment shall be as per the actual work carried by you.

Terms & Conditions

1.	**Work completion period**	:	04 week from the date of receipt of this order.
2.	**Item Rates**	:	All the rates finalized are Inclusive of taxes
3.	**Warranty**	:	12 Month from the date of commissioning.
4.	**FOR**	:	Charusat.
5.	**Payment condition**	:	**80% against Delivery and 20% after Successful Installation.**

You are requested to return the duplicate copy of this order and Annexure-1 as token of your acceptance at the earliest.

Looking forward for your association,

Yours Truly,

Devang Joshi
Registrar

BLU-TEK

B L ENGINEERING

REGD. OFFICE & WORKS:
Plot No. 455, Phase - II, G.I.D.C. Vatva, Ahmedabad-382 445. INDIA.
(M): +91-7600033622, +91-9924202022 (PH): +91-7925833713.
Email: info@blengineering.net, sales@blengineering.net, blengineering@hotmail.com
WEBSITE: www.blengineering.net

ISO 9001 : 2008 COMPANY

MANUFACTURING OF ALL KIND OF INCINERATOR PLANTS AND POLLUTION CONTROL EQUIPMENTS

Date: 18/09/2017

Ref.No: BLE/AB/J/QTN/15-16/51

To,
Charusat University of Science & Technology,
Ahmedabad.

Subject : Quotation for 5 kg/hr Electric Fired Solid Waste Pyrolysis system

Dear Sir,

In context to above subject and our telecommunication our technical dept. have furnished the following details of the Electric fired solid waste pyrolysis system for 5kg/hr. The technical details are followed by our offer for the said system with terms and conditions. Kindly refer the following parameters meeting your requirements and please feel free to contact us for your concerns or queries.

1. TECHNICAL SPECIFICATION OF 5 KG/HR SOLID WASTE PYROLYSIS SYSTEM :

	PRIMARY REACTOR	
TYPE	:	RECTANGULAR
MoC	:	MS 2062
FUNCTION	:	Thermal Disintegration of Solid Waste
	SECONDARY CHAMBER	
TYPE	:	RECTANGULAR
FUNCTION	:	To Combust the fuel gas mixture
MoC	:	Shell : BQ-516
	Heating Element (Heating Source)	
COMBUSTION	:	01 NOS. (1 NO. FOR PRIMARY CHAMBER -8 kW 3PH) 01 NOS. (1 no. For Secondary Chamber 4-kW 3PH)
	CIRCULATION (SCRUBBING) PUMP	
TYPE	:	CENTRIFUGAL MUD PUMP
SIZE	:	125mm X 15mm
POWER	:	0.5 HP @ 1440 RPM
MoC	:	CONNECTED PART SS-316 COMPLETEWITH REPUTED MAKE
	QUENCHER cum Scrubber	
TYPE & MoC	:	Negative Pressure Jet Type with Shell – SS316
FUNCTION	:	To quench the gases from secondary reactor
	ID FAN	
POWER	:	2 HP, 3 Phase, 415 VAC, 50HZ
MOC	:	CONTACT PART MS-2062 & OUTER BODY MS 2062 WITH BASE FRAME DAMPER, V BELT AND PULLEYES ETC.
FUNCTION	:	To Provide negative pressure in all sub system and to carry the exhaust as out to atmosphere.

+ FD Fan
1 HP, 1-Phase, 50Hz

CHIMNEY		
TYPE	:	PYROLYSIS SYSTEM MOUNTING CHIMNEY
DIMENSION	:	6 MTR. HEIGHT, STRAIGHT DIA 100 mm
MOC	:	MS 2062 GR-3 mm PLATE
INTER CONNECTING DUCT LINES		
Description	:	Ducting from combustion chamber hopper to wet scrubber to second scrubber to ID Fan to Chimney
MOC	:	Made from 3 mm Thk. MS2062 plate with inside portion duly lined with refractory material
CONTROL PANEL		
Descriptions	:	Cubical Type Electric Control Panel 16 G Sheet Construction for mounting all necessary indication lamp, operating switches, start stop push button, safety controls & accessories, Audio Visual Alarms starters, contactors and internal wiring. All Switch Gear in the panel shall be reputed L&T or reputed make only.
Contains	:	Start On/Off Switch, Fuses, Ammeter with selector Switch, Voltmeter, Temperature controller with indicator for Chambers, Indicating Lamps, Thermocouple Sensors, Timer, Hooter and contactor overload relays etc complete within all respect duly filled and wired.

1. SCOPE OF WORK:

B. L. Engineering's scope of work for the design, manufacturing, supply, installation and demonstration of Pyrolysis system plant for Solid waste disposal at "Charusat University of Science & Technology - Ahmedabad is as detailed below.

a. **Items & activities under the scope of B. L. Engineering:**

i) Design and Engineering of the entire Pyrolysis Plant.

ii) Manufacturing, supply, installation and demonstration of 5 kg/hr solid waste Pyrolysis Plant at CUST - Ahmedabad. Quantity of items to be supplied under the 'Pyrolysis Plant' is as indicated in technical details of this proposal.

iii) Erection and commissioning of Pyrolysis Plant at CUST – Ahmedabad.

iv) Cabinet/ Shed for Pyrolysis plant.

b. **Items not in our scope but required for demonstration of Pyrolysis system Plant:**

i) Crane for unloading of material at site.

ii) Electrical power @ 440V, 3 phase, 50 Hz at installation site. The tentative electrical power requirement is listed out in this proposal.

iii) Water for operation and maintenance & space to store consumables.

iv) All support as required during installation and commissioning

v) Any other item or activity necessary for the installation and demonstration of the proposed Pyrolysis Plant, but not in our scope.

2. PROJECT COST:

Sr. No	Item Description	Cost in INR
1.	Pyrolysis system for disposal of 5kg/Hr Solid Waste (Paper, Plastic, Cardboard)	7,00,000.00
2.	Erection & Commissioning Charges	25,000.00
3.	Transportation	20,000.00
TOTAL (In words Rupees Seven Lakhs Forty Five Thousan Only)/-		7,45,000.00

+FD Jam
+Shed

3. TERMS & CONDITIONS:

+18%. 150000-00

Total 760000/-

12/12/17 Approved
cfc
12/

a. Price Basis :

The offered prices exclusive of all taxes, govt. levies and duties. All the taxes shall be applicable extra on the above price as per govt. norms at the time of billing.

b. Payment Terms:

i) 50% of the order value as advance along with confirmed order.

ii) 50% of the order value against delivery of proposed Pyrolysis system Plant.

iii) All payments to be made by cheque/DD in faviour of M/s "B L Engineering, Ahmedabad". In case of electronic fund transfer, the payment may be made through RTGS with details as under:

1. Bank name : Bank of Baroda
2. Branch : Vatva Industrial Branch
3. Company name : B L Engineering
4. A/c number : 15960200000005
5. IFSC code : BARB0INDVAT

c. Duration:

- The total duration of the project shall be 2 months. This however, excludes the time taken for obtaining approval of design and drawings.

d. Validity of proposal:

This proposal is valid for a period of 30 days.

e. Warranty:

The performance of equipment carries a warranty of 12 months from the date of commissioning. Warranty of all bought out items is subject to warrantee offered by the purchased parts suppliers like electric motor, electronic controllers and all other electronic parts. This warrantee is further subject to proper storage, proper handling and operation. The warrantee shall be considered void on willful damage to equipment and parts and by labour unrest and by natural calamities.

f. Right to design & modifications:

B. L. Engineering shall have the right to modify or make alterations in design and rating of the components to meet the performance criteria of Pyrolysis system Plant without any prior consent.

g. **Force Majeure Clause:**

B. L. Engineering shall not be responsible for any delay in delivery of system due to force majeure conditions beyond its scope of control, such as earth quake, flood, cyclones, natural calamities, epidemics, riots, war etc.

h. **Jurisdiction:**

To settle any kind of disputes, the exclusive jurisdiction shall be Ahmedabad.

We hope that above parameters full fill your requirements and we shall soon be working on the said project.

Thanking you and assuring of our best attention,
With Kind Regards,

For *B L Engineering*

Jatin
(Admin. Dept.)

INCINERATOR

BLU-TEK®

B L ENGINEERING

बी एल इंजीनियरिंग

OPERATION AND MAINTENANCE MANUAL

FOR

SOLID WASTE PYROLYSIS PLANT(5 Kg/Hr)

AT

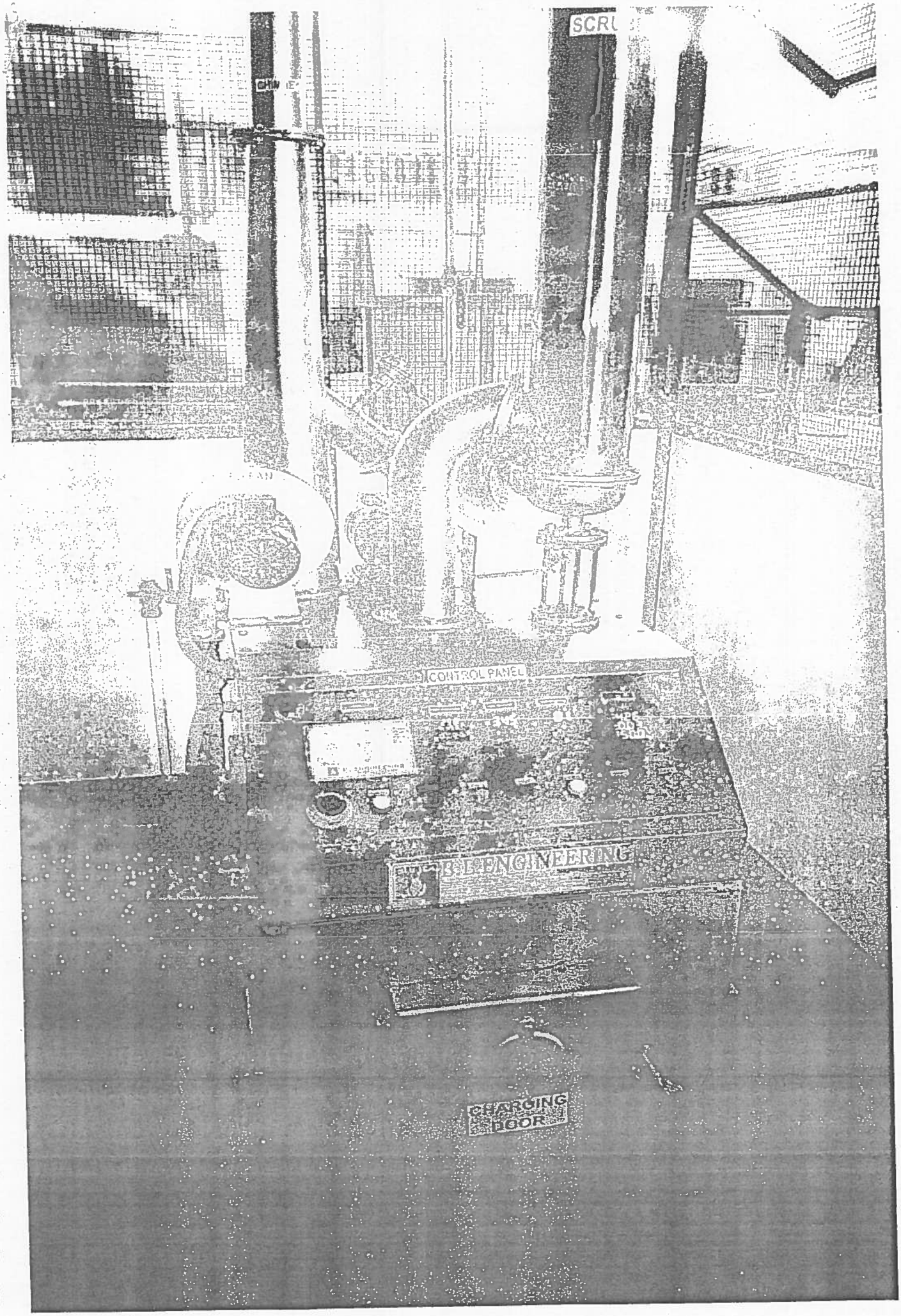
CHAROTAR UNIVERSITY OF SCIENCE &

TECHNOLOGY- CHANGA, NADIAD.

DESIGNED, MANUFACTURED AND INSTALLED BY:

B L ENGINEEERING

455, PHASE-II, G.I.D.C., VATVA, AHMEDABAD,GUJARAT(INDIA) -382445
CONTACT: +91-9974-137-636 || +91-9924-202-022 || +91-7600-033-622
E-MAIL: info@blengineering.net || blengineering@hotmail.com
WEBSITE: www.blengineering.net


SCRU
CHIN
CONTROL PANEL
B·L ENGINEERING
CHARGING
DOOR

PREFACE

The documents submitted hereby are for operation and maintenance of 5Kg/Hr pyrolysis system. This facility shall dispose and manage solid waste incoming from CHARUSAT-CHANGA, NADIAD at rated capacity. The system is designed as per M/s. BL Engineering's indigenously developed waste management technology.

Mahavir 25/04/2018

MAHAVIR SUTHAR
Engineering Department
B L ENGINEERING

CONTENTS

BLU-TEK

B L ENGINEERING

REGD.OFFICE & WORKS:
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(M): +91-7600033622, +91-9924202022 (PH): +91-7925833713.
Email:info@blengineering.net, sales@blengineering.net, blengineering@hotmail.com
WEBSITE: www.blengineering.net

ISO 9001 : 2008 COMPANY

MANUFACTURING OF ALL KIND OF INCINERATOR PLANTS AND POLLUTION CONTROL EQUIPMENTS

1.0 COMMISSIONING REPORT

Report No. : BLE/CHARUSAT/PPS-5/18-19/R-02

Date : 28/4/18

Work details:-

Name of Client	Charotar University of Science & Technology, CHARUSAT Campus-Changa, Off Nadiad-Petlad Highway, Gujarat-388421, India .
W.O.No	1. CHA/ADM/IDMS/18/02/20 - Dated: 02.02.2018
Design, manufacturing, installation and commissioning by	B L Engineering, Plot no-455, Phase-2,GIDC Vatva, Ahmedabad- Gujarat-382445

Product details:-

Plant name:	Electric Fired Solid waste Pyrolysis System
Capacity of plant	5 Kg/Hr
Waste type/Characteristic	Paper, Plastic, Cardboard, Tissue papers.
System installation date	28/4/18
Date of commissioning	28/4/18
Training date	28/4/18
Plant handover date	28/4/18

Remarks:

_____

_____

_____

B L ENGINEERING	Charusat University
NAME: Mahavir Suthar	NAME: Jayesh I Ecadi
DATE: 28/4/18	DATE: 28/4/18
DESIGNATION: Proj. Engineer	DESIGNATION: Dy Engineer.
SIGN: Mahavir	SIGN:

2. ABOUT US

M/s B. L. Engineering, a firm dedicated to indigenous development and promotion of environmental technologies was established three decades ago in India. Fully dedicated to applied research and development of waste specific, user friendly technologies we have been providing engineering solutions to meet the needs of our customers with our consistent efforts and dedication for over 30 years.

We are an ISO 9001:2015 registered company M/s. B. L. Engineering, working in the engineering field designing and manufacturing all types of Pyrolysis Systems and Pollution equipment etc. since 1985. We are a leading and well growing Engineering industry engaged in the activities of manufacturing supply of waste management equipment and chemicals plants and machinery, pharmaceutical plants and environmental projects.

In last three decades, B. L. Engineering has developed pyrolysis systems under our own brand name "BLU-TEK". We are primarily engaged in the activities of design, detailed engineering, manufacturing, supply and commissioning of waste disposal pyrolysis systems of disposal capacity ranging from **1 Kg/hr up to 5000 Kg/hr** for incineration of industrial hazardous waste management systems, hospitals, bio-medical waste, solid / semi solid waste, liquid waste, municipal common waste etc.

Keeping pace with the rapidly evolving technology we have developed all kinds of fuel efficient incinerators. We are enjoying our presence in the government, semi government, corporate and private sector organizations. **We have installed more than 400 pyrolysis systems globally with fully satisfied customers.** The unit is manned by well experienced technocrats of this trade serving the organization since its inception. The blend of expertise and progressive policies backed by innovative work culture has led the unit to a well-established business unit.

Being a technology driven organization, M/s B. L. Engineering works with the latest technology in environment preservation and waste management. In this context, we chose to adopt the next generation advanced *'Plasma Pyrolysis Technology'* for disposal of solid waste from Institute for Plasma Research (IPR) which is a research organization of national and international repute. The technology transfer agreement was signed on 18th March, 2015.

2.1 Some Of The Satisfactory Works Of Govt. & Private Sector As Under

- ✓ Bhabha Atomic Research Center (BARC) - Trombay, Mumbai.
- ✓ Bhabha Atomic Research Center (BARC) - Tarapur, Mumbai.
- ✓ Hindustan Aeronautics Ltd. (HAL) - Bangalore.
- ✓ Indian Space Research Organization, (ISRO) – Ahmedabad.
- ✓ Nuclear Power Corporation of India Ltd., Kakrapar, Surat, Gujarat.
- ✓ Nuclear Power Corporation of India Ltd., Kaiga, Karnataka.
- ✓ Maharaja Sayajirao University, Vadodara.
- ✓ Nirma University, Ahmedabad.
- ✓ Sajjan India Ltd. G.I.D.C., Ankleshwar
- ✓ Ratnagiri Gas & Power Pvt. Ltd, Ratnagiri, Maharashtra.
- ✓ AL KARAR, Iraq. (Export)
- ✓ PTB, LANG, Bontang, Indonesia. (Export)
- ✓ M.G. Hospital, Jodhpur, (Government of Rajasthan)
- ✓ Indian Railway, DMW, Patiala.- Punjab.
- ✓ Civil Hospital, Asarwa, Meghaninagar, Ahmedabad.
- ✓ West Central Railway, Wagon Repair Shop, Kota, Rajasthan.
- ✓ North Western Railway, Diesel Shed, Abu Road, Rajasthan.
- ✓ North Western Railway, Bhagat ki Kothi, Jodhpur, Rajasthan.
- ✓ Director Of Medical Education, Guwahati, Assam.
- ✓ Institute Of Life Science, Bhubneshwar, Orissa.
- ✓ Bio Clean System, Ahmad Nagar & Solapur (Two Plant).
- ✓ Cadila Helthcare Ltd. (Zydus), Ahmedabad
- ✓ Dishman pharmaceuticals & Chemicals Ltd., Ahmedabad.
- ✓ Parabolic Drugs Ltd., Chandigarh.
- ✓ Cadila Pharmaceuticals Ltd. Ahmedabad.
- ✓ Nuclear Power Corporation of India Ltd., Kakrapar, Surat (NPCIL – KAPS)

2.2. REGISTRATIONS WITH GOVERNMENT AGENCIES:

- Technology Transfer partner of Institute of Plasma Research(Govt. Of India)
- Military engineering Services , Govt. of India.
- District Industries Commissioner as an S.S.I. Unit. &specially as pyrolysis Mfg.
- ISO 9001:2015 Certified Company.
- VAT Registration No. 24075601048 Date. 01/07/2002
- TIN (CST) Registration No. 24575601048 Date. 31/12/1996
- Service Tax Registration No. AACFB1283ESTO01
- Professional Tax Registration No. E - 235064427
- Permanent Account Number (PAN) : AACFB1283E
- Central Excise Registration No. AACFB1283EXM001
- Factory License Registration No. 1454/29299/1995
- EPF (Provident Fund) No. – GJ/AHD/SRO/VAT/ENF/I/46
- ESIC Registration Code No. 37000285690000504
- Importer-Exporter Code (IEC) No. 0811000788

3.0 BRIEF DESCRIPTION OF THE PLANT:

The entire proposed pyrolysis plant can be divided into the following sub-systems:

Fig 1: Flow chart of liquid waste processing mechanism in different sub-systems of pyrolysis plant as proposed herewith.

a) Pyrolysis system:

The pyrolysis system is an assembly of primary reactor, heaters, FD Fan, Control Panel, Ash removal pit and secondary reactor. The main purpose of the primary reactor with 'electric heater' as extreme heat source is to pyrolyse the solid waste and dispose them in an eco-friendly manner.

b) Air Pollution Control Devices (APCD):

The air pollution control devices include scrubbing and quenching system which is important to quench the hot gases from secondary reactor (>1050°C) so as to prevent formation of toxic dioxins and furans. This sub-system also helps remove particulate matter in gas by wet scrubbing. This involves components such as wet scrubber, pumps etc. Details of the system are given in technical specifications of this document.

c) Exhaust system:

The exhaust system's main role is to filter the scrubbed gases and exit them. This system comprises of sub-systems such as ID fan and a 2.5m height chimney. Details of this sub-system are provided in the technical specifications section below.

4.0 TECHNICAL SPECIFICATIONS:

The total performance of the pyrolysis plant will meet the following requirements:

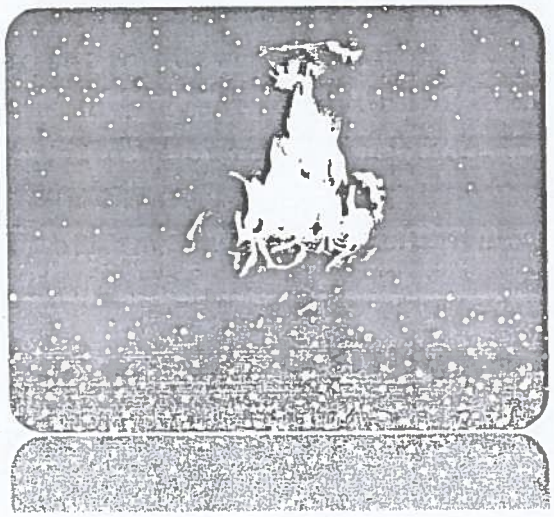
- ✓ disposal capacity : 5 kg/Hr
- ✓ Volumetric reduction of organic waste : >99%
- ✓ Gas residence time : ~2 seconds
- ✓ Volatile organic compounds in ash : less than 0.01%

The detailed specifications of all systems and sub-systems of pyrolysis plant are discussed herewith.

a. <u>Pyrolysis System:</u>

The pyrolysis system is the heart of this project. The main function of pyrolysis system is to combust the waste into gas & ash and subsequently process the gases to make them clean from any toxins. The whole pyrolysis system comprises of various sub-systems viz. primary reactor, heaters, FD Fan, Ash collection reactor and secondary reactor. The technical details of this system are as given below:

i) Primary Reactor



Description	Specification
Name of System	Primary reactor
Type	Rectangular
Function	Decomposition of organic waste into flue gases and ash.
Quantity	1 No.
Material of Construction	Shell : MS2062 Wall Lining : (from inside)

ii) Secondary reactor

The combustible gases from the primary reactor enter into the secondary reactor due to negative pressure maintained by ID Fan. These gases are mixed with air and further combusted. The residence time of the gases in the secondary reactor is approx. 2 seconds to ensure complete combustion.

Descriptions	Specifications
Name of system	Secondary Reactor
Type	Rectangular type
Function	To combust the flue gases from the primary reactor
Quantity	1
Material of Construction	Shell : MS -2062 Wall Lining : (from inside)

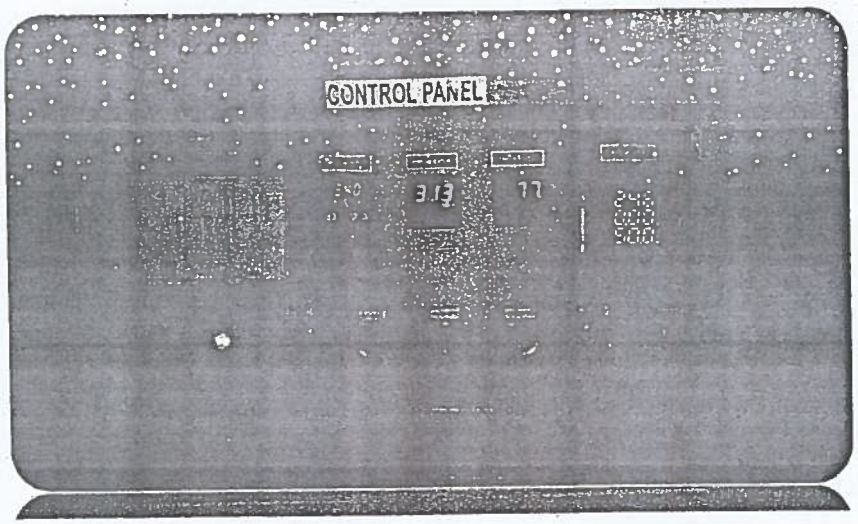
iii) Control Panel

Cubicle type electrical control panel 16 G sheet construction for mounting all necessary indication lamps, operating switches, start stop push buttons, safety control & accessories, audio visual alarm, starters, contactors and internal wiring. All switchgear in the panel are of siemens or L&T or reputed make only.

Weatherproof control panel housing operating in a automatic control switches comprising the following.

1. Start ON /OFF Switches.
2. Fuses
3. Ammeter with selector switch.
4. Voltmeter with selector switch.
5. Temperature controller cum indicators for primary & secondary reactors.
6. Temperature indicator for scrubber and stack.
7. Indicating lamps.
8. Thermocouples sensors for primary & secondary reactors.
9. Timers.
10. Hooters.
11. Interlocking arrangement to safe guard against accidents that may occur in case the ID Fan is not working.

Contactor, overload relays etc complete within all respect duly fitted and wired.



iv) **Force Draft (FD) Fan**

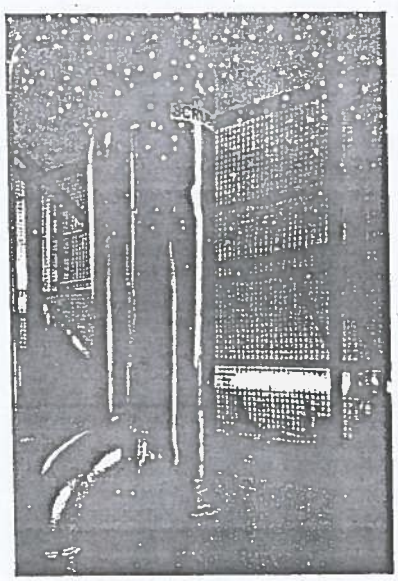
FD Fan provides air to the burners for efficient combustion of fuel.

Description	Specifications
Name of System	Force Draft Fan (FD FAN)
Type	Direct
Function	Provide air into the reactors
Quantity	1 No.
Motor Specification	3 Phase, 0.25HP, 415 VAC, 50Hz
Air Flow rate	150 CFM
Air pressure	50 mmWC
Noise level	< 60 dB
Material of Construction	MS2062

b. <u>Air pollution control devices (APCD):</u>

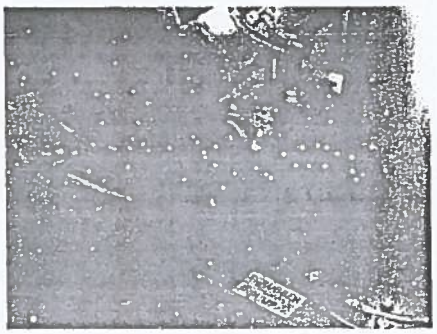
The Air pollution control devices(APCD) comprises of a Quencher, Scrubber tank and Pump.

i) **Quencher cum Scrubber**



The quencher is a vessel used to quench and clean the hot gases coming out from the secondary reactor of pyrolysis system. This quencher is an important component since it prevents the formation of toxins.

Description	Specifications
Name of System	Scrubber
Type	Pressure jet throat type Negative pressure
Function	To scrub out suspended particulate matter from secondary reactor gases.



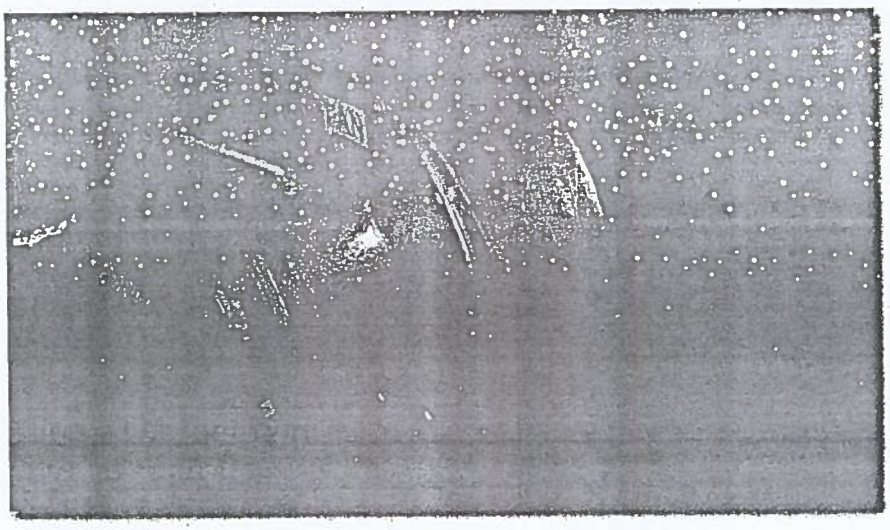
Material of construction	Shell : SS304
Water Pumps	0.5HP, 1Phase centrifugal monoblock water pump for venturi scrubber
Water Tank	MS2062- tank of 300 ltr capacity

c. Exhaust System:

The main function of exhaust system is to release the cleansed gases from scrubbing assembly in atmosphere as per statutory/regulatory guidelines. The exhaust system comprises of ID fan (01 No.) and a chimney (01 No.).

i) Induced Draft (ID) Fan

Induced Draft (ID) fan creates negative pressure in line from primary reactor to ID fan inlet. The ID fan shall be of 300 CFM capacity. The ID fan maintains 10-15 mm negative water column in primary reactor which ensures no leakage in environment. The ID fan is made of stainless steel. It has a damper (shut-off value) to adjust the suction opening. The noise level will be less than or equal to 60 db.



Description	Specifications
Name of System	Induced Draft Fan (ID FAN)
Type	Direct drive
Function	To provide negative pressure in all sub system and to carry the exhaust as out to atmosphere
Quantity	1 No.
Motor Specification	3 Phase, 0.5HP, 415 VAC, 50Hz
Noise level	< 60 dB
MOC	SS304 L impeller and body of MS2062

ii) Chimney

The chimney is a requirement of the pollution control board and the exhaust gases from pyrolysis system is required to be released through a chimney of 2.5 m height. 01 no. chimney will be provided as a part of the exhaust system.

Description	Specifications
Type	Self supported
Dimensions	2.5 m height
MOC	MS with heat resistance 2 coat paint
Quantity	1
Outlet gas temp	60°C to 110°C

d. Paint

All the assemblies of the proposed pyrolysis plant will be painted for functional purpose.

Description	Specifications
Type	HR silver paint upto 600°C
No. Of Coat	2 coat
Items To be painted	MS & CS parts to be painted with 2 coats of HR silver paint & SS parts shall be finished.

e. Electrical load balance chart

It is important to access the electrical load required to install and operate the pyrolysis plant. For this, the electrical load information is provided as below:

Sr. No.	Particular	QTY	Power (HP)
01	Pyrolysis heater	01	3.2kW ~ 4.3HP
02	Scrubber Pump	01	0.5
03	I D Fan	01	0.5
04	FD Fan	01	0.25
	Total power		6 HP ~ 4.5 kW

5. HOW TO OPERATE THE PYROLYSIS SYSTEM

5.1 PRE-OPERATIVE CHECKLIST :

1. Check the pyrolysis reactor for any solid deposits, if they are present clean it perfectly surround the pyrolysis reactor and bottom floor.
2. Maintenance door and view port completely closed before starting.
3. Scrubber tank must be filled up to overflow connection.
4. Check ash tray and remove any ash deposits from it.
5. Check the following valves are open/ closed as per instructions or not.

Sr.No.	Valve description	Positioning
1	Id Fan suction valve	80% open
2	scrubber discharge	100% open
3	FD Fan valves	80% open

5.2 OPERATING PROCEDURE :

1. Switch on main switch of control panel and check RYB lamps for 3 phase power. If any lamp is off check input power connection in panel and if all 3 lamps are on go to step 2 and follow steps sequentially.
2. Turn on ID Fan.
3. Turn on Scrubber pump.
4. Turn on Heater.
5. After the temperature in primary chamber reaches 150°C , Turn ON FD Fan.
6. Charge the waste when temperature reaches 200°C.

6. HOW TO STOP THE PYROLYSIS SYSTEM

1. Turn off heater.
2. Let the temperature of primary chamber reach 60°C.
3. When temp in primary is </= 60°C Turn of scrubber pump, FD Fan and ID Fan.
4. Turn off ID Fan Suction Valve.
5. Turn off Main switch of the panel.

7. GENERAL MAINTENANCE

1. Clean the reactor and ash collection tray every day before operation.
2. Check for electric earthing of every electrical component: motor, pump, burner ,control panel.
3. Clean the thermocouple once a week, remove the carbon/ash perfectly.
4. If the sensor is damaged fix a new sensor(thermocouple "K" type)
5. All fasteners (foundation bolts) check once a month.
6. Clean scrubber tank every 2 days and refill with new water.
7. In case of improper function of any sensor, check for the scaling/rusting and remove scaling/rust or replace the parts.
8. Paint the entire system with HR aluminum paint every 12 months.

8. SAFETY INSTRUCTIONS DURING OPERATION OF THE PLANT

8.1 Do's :

1. B L Engineering's trained operator is only allowed to operate the pyrolysis plant.
2. The operator should be always attentive to the pyrolysis plant while it is operating condition and should never leave it unattended or in the hands of any unskilled person.
3. Operate according to the operation instructions only.
4. In working condition all maintenance doors i.e. Primary main door, Secondary reactor, scrubber tank, ID Fan, maintenance ports in ducts must be closed.
5. It is advised to keep the first aid box and fire extinguisher at plant.
6. Wash hands after each charging.
7. Always wear safety gloves and safety shoes while at plant.
8. All doors must be closed when plant is in operating conditions.
9. Visitor/ operator must wear safety shoes, mask and helmet while in plant.
10. Check Earthing of plant every 30 days.

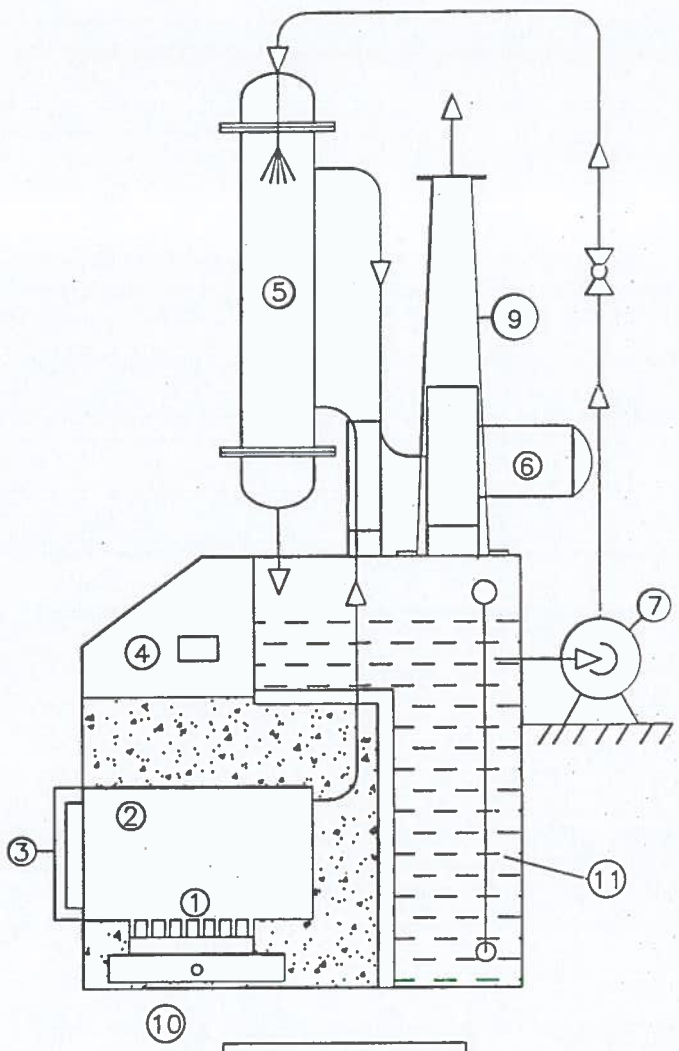
8.2 Dont's :

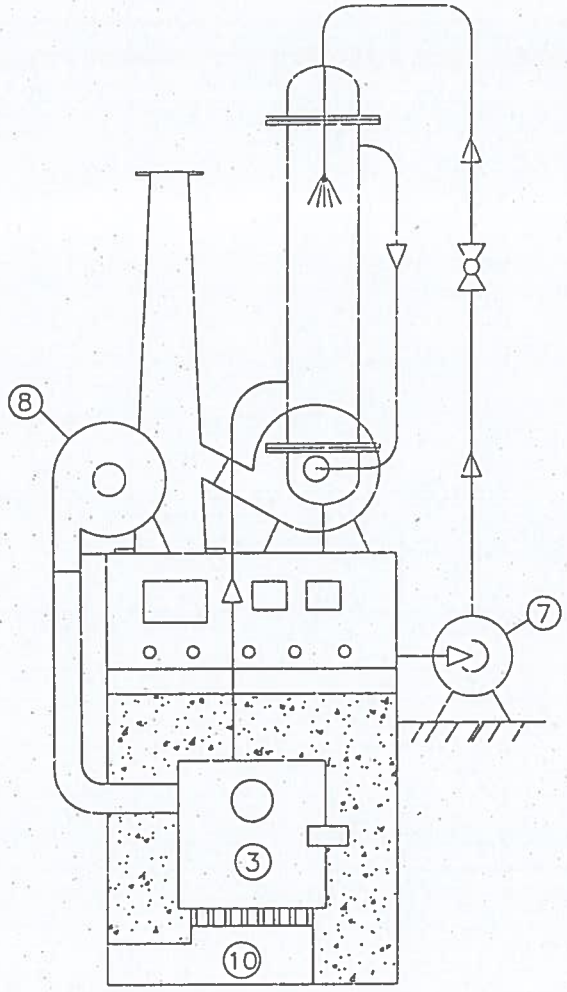
1. Do not operate without wearing safety shoes, helmet, thermal gloves (if going near hot objects).
2. Visitors should not be allowed to come near the pyrolysis plant while it is in running condition.
3. Pyrolysis plant operator should not wear polyester, terelene and loose clothes.
4. Do not keep any flammable items near the surrounding area of pyrolysis plant i.e.: plastic, paper, polyester, solvent, explosive items, oil drums etc.
5. There should not be any lubricating items on the platform, floor.
6. After starting the pyrolysis plant do not open any inspection flange or door.
7. Do not remove ash/salt from the primary reactor while in running condition.
8. Do not open control panel door in working condition.

9. In case of voltage fluctuation do not operate pyrolysis plant.
10. Turn off the control panel main switch while any maintenance is going on.
11. Do not smoke/eat/drink near pyrolysis plant.
12. There must be not be any personnel near the plant other than operator while it is in running condition.
13. Do not charge any packed cylinder, aerosol cans, glass bottle etc. in the plant.
14. Do not bring any eatables near pyrolysis plant.
15. Resting and sleeping is not allowed in the plant.
16. Person on fast(have not consumed any food prior to plant operation) is not allowed to enter the plant.
17. Do not touch any moving parts, motor, mechanical parts, components, wires and cables in running condition.

9.0 MECHANICAL

DRAWING





LEGENDS:
1 – HETER
2 – MAIN CUMBUSTION CHAMBER
3 – CHARGING DOOR
4 – CONTROL PANEL
5 – SCRUBBER
6 – ID FAN
7 – SCRUBBER PUMP
8 – FD FAN
9 – CHIMNEY
10 – ASH TRAY
11 – WATER TANK

BL ENGINEERING

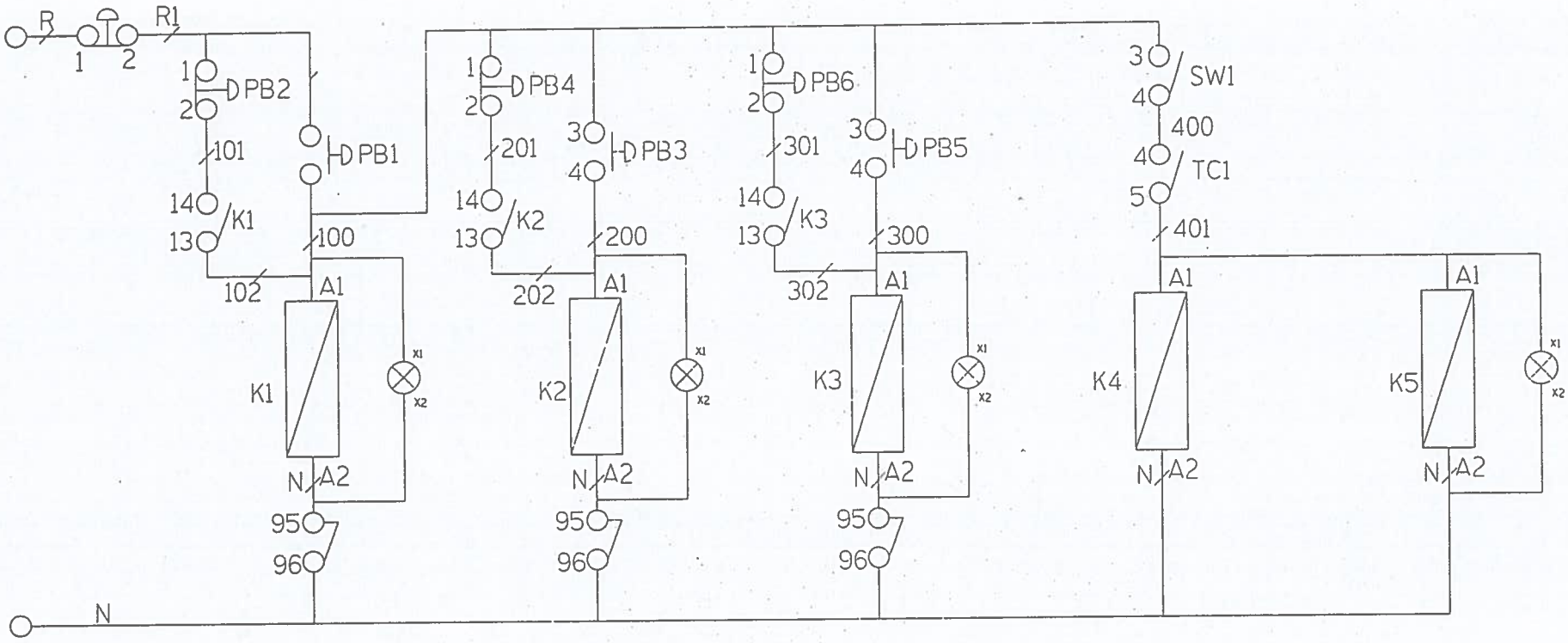
Add : PLOT No.455, PHASE-II, G.I.D.C., VATVA, AHMEDABAD,(IN)- 382445.
E-Mail : blengineering@hotmail.com ; info@blengineering.net
Website : www.blengineering.net

10.0 ELECTRICAL

DRAWING

TERMINALS DETAIL BL.ENGINEERS

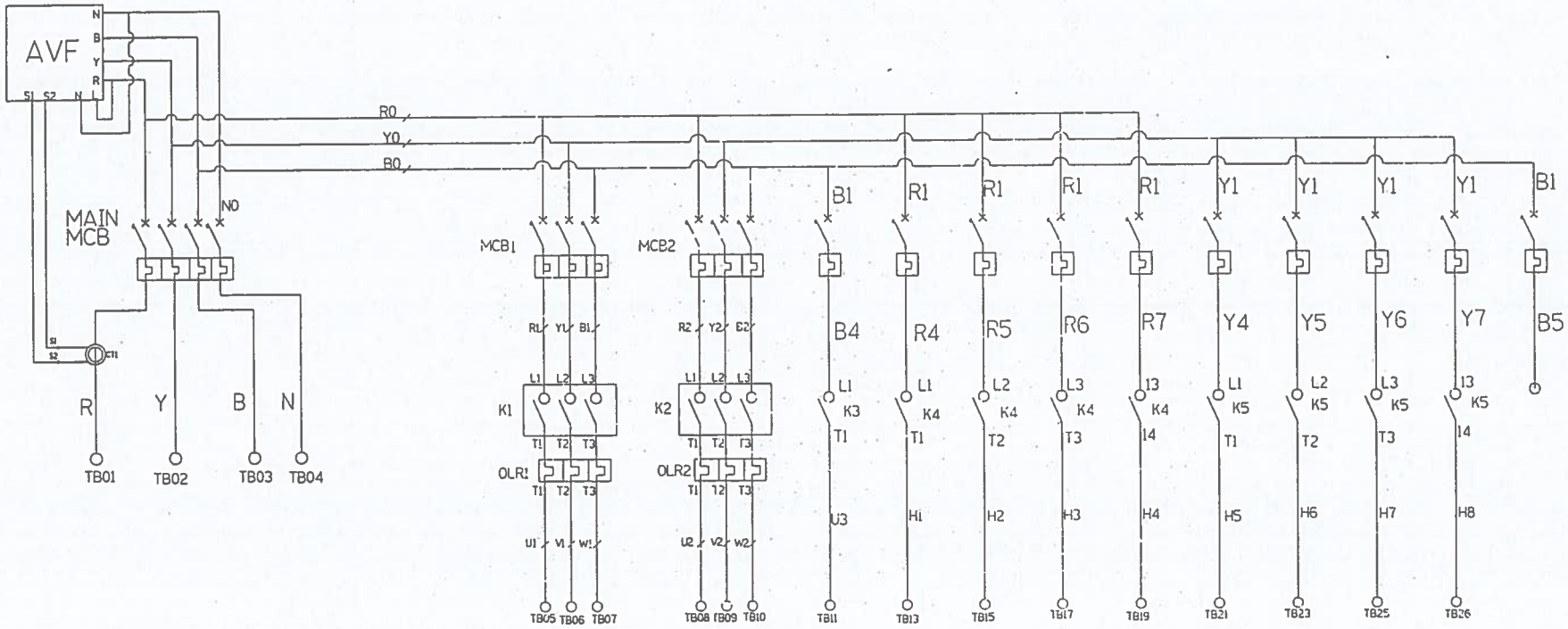
TERMINAL NO	DETAILS	FERUL NO.
1	220 VAC INPUT	R
2		Y
3		B
4		N
5	ID FAN OUTPUT 440VAC	U1
6		V1
7		W1
8	FD FAN OUTPUT 440 VAC	U2
9		V2
10		W2
11	SCRUBER 220 VAC	U3
12		N
13	THERMOCOUPLE INPUT 1	TC1
14		TC2
15	THERMOCOUPLE INPUT 2	TC3
16		TC4
17	THERMOCOUPLE INPUT 3	TC5
18		TC6
19	HEATER 1	H1
20		N
21	HEATER 2	H2
22		N
23	HEATER 3	H3
24		N
25	HEATER 4	H4
26		N
27	HEATER 5	H5
28		N
29	HEATER 6	H6
30		N
31	HEATER 7	H7
32	HEATER 8	H8
33	NEUTRAL	N



Y
X

Gview:TOP WCS:TOP Cplane:TOP

60.073
Metric



Y
X

Gview:TOP WCS:TOP Cplane:TOP

3.089
Metric

11.0 SPARE PARTS PRICE LIST UPTO APRIL'2019:

11.1 ELECTRIC SPARE PARTS

Sr.No	Description	Specification	Quantity	Rate/unit (INR)
01	MCB 5 Amp.	5 Amp.	1 No.	3000.00
02	MCB 3 Amp.	30 Amp.	1 No.	9000.00
03	Push Button Switch	30 mm Size	1 No.	1200.00
04	Burner on – off switch	30 mm Size	1 No.	2200.00
05	R.Y.B. Lamp	30 mm Size	1 No.	525.00
06	Temp. Controller	46 x 46 mm	1 No.	9000.00
07	Temp. indicator	46 x 46 mm	1 No.	8000.00
08	Main Switch (L & T/Siemens)	20 Amp	1 No.	5000.00
09	Thermocouple 'K' Type 600 Deg C.	12 " x 12 mm	1 No.	4000.00
10	Volt Selector Switch	60 x 60 mm	1 No.	3000.00

11.2 MECHANICAL SPARE PARTS

Sr.No	Description	Specification	Quantity	Rate/unit (INR)
1.	Impeller	6. 5 "	1 No.	8,000.00
2.	Pump	½" x ½"	1 No.	20,000.00
3.	Level Tube	40 " x 1 "	1 No.	3,500.00
4.	Scrubber Shower	100 mm	1 No.	4,000.00
5.	F. D. Fan Rotor	AL 450	1 No.	15,000.00
6.	I. D. Fan Rotor	I D 500	1 No.	20,000.00
7.	Ball Valve C.I.	1/2"	1 No.	2,600.00
8.	Ball Valve C.I.	1 "	1 No.	3,500.00

Note:-

- All spare parts available at our company.
- Required parts P.O. shall be provided separately and well in Advance to install the spares as per above list.

12.0 GENERAL TERMS & CONDITIONS:

12.1 Price Basis:

The offered prices are excluding all taxes and duties other govt. Levis will be charged extra on purchase of material. Applicable taxes, transportation & duties shall be extra as applicable.

12.2 Payment Terms:

i) 100% payment should be made against material delivery at site.

ii) All payments to be made by cheque/DD in favour of M/s "B L Engineering, Ahmedabad". In case of electronic fund transfer, the payment may be made through RTGS with details as under:

1. Bank name : Bank of Baroda
2. Branch : Vatva Industrial Branch
3. Company name : B L Engineering
4. A/c number : 15960200000005
5. IFSC code : BARB0INDVAT

12.3 Duration:

The validity of the above mentioned price list for spare parts is upto 25.04.2019 i.e. 1 year from the date of plant commissioning.

12.4 Warrantee:

The performance of equipment carries a warranty of 12 months from the date of commissioning. Warranty of all bought out items is subject to warrantee offered by the purchased parts suppliers like electric motor, electronic controllers and all other electronic parts. Manufacturer does not cover any rubber parts, electronic parts, paint, electric cables, any damage caused due to fire/water under this warrantee. If the plant is not operated/handled as per

manufacturers guidelines and instructions and any damage is caused due to the same, the warrantee shall be considered void. This warrantee is further subject to proper storage, proper handling and operation. The warrantee shall be considered void on willful damage to equipment and parts and by labour unrest and by natural calamities.

12.5 Force Majeure Clause:

B. L. Engineering shall not be responsible for any delay in delivery of system due to force majeure conditions beyond its scope of control, such as earth quake, flood, cyclones, natural calamities, epidemics, riots, war etc.

12.6 Jurisdiction:

Jurisdiction to settle any kind of disputes shall be Ahmedabad.

Thanking you and assuring of our best attention,

With Kind Regards,
B L Engineering
Engg. Division.

Charotar University of Science and Technology

Date: 01st January, 2018.

Approval of expenses for Purchase of 'Pyrolysis System' for Charusat campus

To,
The Chairman,
Finance Committee,
Charusat University.

Subject : Request to approve expenses for Purchase of 'Pyrolysis System' at Charusat campus.

As per directive of Chairman (Building Committee – SCMSPKM) proceedings were initiated for purchasing 'Induction Pyrolysis System' for Charusat campus solid waste disposal. Quotations from following agencies were invited in the same (Refer Annexure – 1 for details).

1. RE-DEAL Solutions, Ahmedabad (Supplier of 100 KLD Sewage Treatment Plant at Charusat).
2. B.L. ENGINEERING, Ahmedabad.

The staff members of Infrastructure Development and Maintenance Section (1. Jaymin Desai – Dy. Engineer; 2. Nayana Patel – Jr. Engineer and 3. Jignesh Patel – Jr. Engineer) visited the sites of both agencies on 13th November, 2017 to understand the systems and its technical details. Based on the feedback from the visit, the Building committee called the representative of B.L. ENGINEERING, Ahmedabad in the meeting on 12th December, 2017 at Charusat campus.

Based on the Minutes following decisions are taken by the committee:

- To purchase **5 Kg/Hr capacity Electric Fired Solid Waste Pyrolysis system @ Rs. 8,96,800/-** (Rupees Eight Lacs Ninety Six Thousand Eight Hundred only). This purchase price is **inclusive of cost of Protection shade, GST, Erection and Commissioning, Transportation, etc.** This system also contains **FD fan unit so that it can be utilised for Animals burning of RPCP.**

We request you to approve the expenses.

Prepared by:

Jignesh Patel
Jr. Engineer

Jaymin Desai
Dy. Engineer

H. S. Patel
Dy Registrar

Devang Joshi
Registrar

CHARUSAT

Jignesh Patel <jigneshpatel.adm@charusat.ac.in>

Finance Committee Approval

2 messages

bhavdip patel <bhavdippatel.acc@charusat.ac.in> Wed, Feb 14, 2018 at 2:50 PM
To: Jignesh Patel <jigneshpatel.adm@charusat.ac.in>, Jaimin Desai <jaimindesai.cem@charusat.ac.in>, Nayan Patel <nayanpatel.adm@charusat.ac.in>
Cc: Devang Joshi <devang.adm@charusat.ac.in>

Dear Sir,

The 28th Finance Committee Meeting was held on 12/02/2018. I am directed by the Registrar to communicate you that you're below mentioned proposal are approved by the committee vide Resolution No. 28.17.09

Expenses for Purchase of "Pyrolysis System" for Charusat Campus

The Committee Approved the estimated expenditure of Rs. 8.97 Lakhs for the Pyrolysis System to be installed at Charusat Campus.

You may note the same and proceed accordingly.

Regards,

Bhavdip Patel

Dy. Account Officer

Jignesh Patel <jigneshpatel.adm@charusat.ac.in> Wed, Feb 14, 2018 at 3:53 PM
To: Nirmal Patel <nirmalpatel.adm@charusat.ac.in>, Maulik Patel <maulikpatel.adm@charusat.ac.in>, naitik patel <naitikpatel.adm@charusat.ac.in>

[Quoted text hidden]

Charotar University of Science and Technology

Date: 15th December, 2017.

NOTE

Purchase of 'Pyrolysis System' for Charusat campus

As per directive of Chairman (Building Committee – SCMSPKM) proceedings were initiated for purchasing 'Induction Pyrolysis System' for Charusat campus solid waste disposal. Quotations from following agencies were invited in the same (Refer Annexure – 1 for details).

1. RE-DEAL Solutions, Ahmedabad (Supplier of 100 KLD Sewage Treatment Plant at Charusat).
2. B.L. ENGINEERING, Ahmedabad.

The staff members of Infrastructure Development and Maintenance Section (1. Jaymin Desai – Dy. Engineer; 2. Nayana Patel – Jr. Engineer and 3. Jignesh Patel – Jr. Engineer) visited the sites of both agencies on 13th November, 2017 to understand the systems and its technical details. Based on the feedback from the visit, the Building committee decided to call the representative of B.L. ENGINEERING, Ahmedabad for understanding the systems and Techno-Commercial discussion at Charusat campus. The representative of B.L. ENGINEERING, Ahmedabad was called on 12th December, 2017 for discussion.

After deliberations with the representatives of B.L. ENGINEERING, Ahmedabad, the committee resolved following:

- To purchase **5 Kg/Hr capacity Electric Fired Solid Waste Pyrolysis system @ Rs. 8,96,800/-** (Rupees Eight Lacs Ninety Six Thousand Eight Hundred only). This purchase price is inclusive of **cost of Protection shade, GST, Erection and Commissioning, Transportation, etc.** This system also contains **FD fan unit so that it can be utilised for Animals burning of RPCP.**

Prepared by:

Jignesh Patel
Jr. Engineer

Request for Approval:

Jaymin Desai
Dy. Engineer

H. S. Patel
Dy Registrar

Devang Joshi
Registrar

Pl. place before F/C

For Provost approval:

1/11/17

Charotar University of Science and Technology

Comparative Statement of 'Pyrolysis System' for Charusat campus

Date: 08th December, 2017.

Details	RE-DEAL Solutions Ahmedabad	B.L. ENGINEERING Ahmedabad
Function	Molecular Disintegration of Solid Waste	Thermal Disintegration of Solid Waste
Capacity	100 Kg / Day	5 Kg / Hr
Type	Electric Fired	Electric Fired
Exhaust	Through Simple Filter	Separate Air Pollution Control System
Rate (Rs.)	6,35,480/-	7,45,000/-
GST@18%	1,14,387/-	~~1,34,100/-~~
Total amount (Rs.)	7,49,867/-	8,79,100/-
Erection and Commissioning	Inclusive	Inclusive
Transportation	Inclusive	Inclusive
Warranty	-	12 Months
Payment Condition	80% against Delivery 20% after Successful Installation	80% against Delivery 20% after Successful Installation

Inclusive of FD fan unit so that system will be utilized for animals burning of RPCP. → Rs. 8,79,100

+ Rs. 15,000 Protection Shade Cost

Rs. 2,700 GST@18% on Protection Shade

Total Purchase = Rs. 8,96,800/-

Approved dt. 30/12/17

Charotar University of Science and Technology

Date : 14th November, 2017.

NOTE

Visit Report of 'Pyrolysis System'

As per directive of Chairman (Building Committee – SCMSPKM) proceedings were initiated for purchasing 'Induction Pyrolysis System' for Charusat campus solid waste disposal. Quotations from following agencies were invited:

1. RE-DEAL Solutions, Ahmedabad (Supplier of 100 KLD Sewage Treatment Plant at Charusat).
2. B.L. ENGINEERING, Ahmedabad.

The following staff members of Infrastructure Development and Maintenance Section visited the sites of both agencies on 13th November, 2017 to understand the systems and its technical details.

01. Jaymin Desai – Dy. Engineer
02. Nayana Patel – Jr. Engineer
03. Jignesh Patel – Jr. Engineer

Following technical points are noted during visit of 'Induction Pyrolysis System' of both agencies:

Details	RE-DEAL Solutions Ahmedabad	B.L. Engineering Ahmedabad
Capacity	100 Kg / Day	5 Kg/ Hr
Type	Electric Fired	Electric Fired
Exhaust	Through Simple Filter	Separate Air Pollution Control System
Tank	SS Tank without Inner lining	MS Tank with inner lining
Emission	Not as per GPCB norms	As per GPCB norms
Usage	For Solid Waste	For Solid Waste Can also be used for Animal burning of RPCP with addition of FD Fan unit.

The Photographs of Pyrolysis systems of both agencies are attached herewith.

Prepared by:

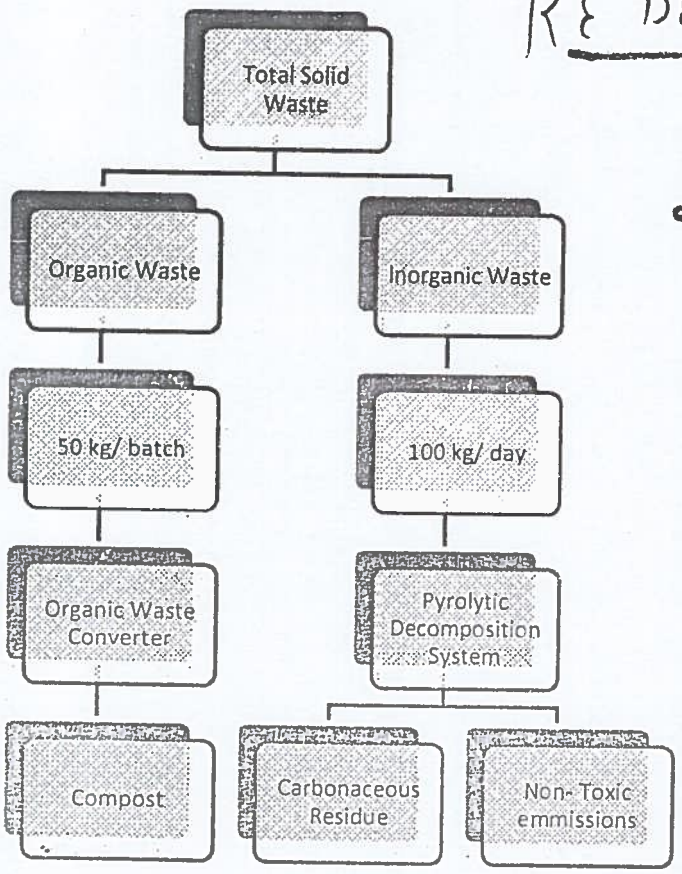
Jignesh Patel
IDMS

Jaymin Desai
Dy. Engineer

H. S. Patel
Dy. Registrar

RE DEAL SOLUTIONS

AHMEDABAD



ORGANIC WASTE CONVERTER

Features	Waste Shredder
Motor Capacity	1 HP
Electical Type	3 Ph
No. Of Motor	1
Capacity	100 to 150 kg/ hour
Blade	WPS/OHNS
Waste Type	Kitchen Waste,Garden Leaves
Forward/Reverse	Yes
Maintenance	Regular Cleaning and periodic oiling for gear and chain couplings
Dimension	29 inch L x 15 inch W x 40 inch H
Floor Space	6 Sq. Feet
Gear-Box	63-40
Out Put Size	5 -6 mm

Features	
Composting Machine	(1) (2) Composting machine will mix through mixing blade for 15 minutes. Show dust and micro-organisms needs to added during mixing process
Motor Capacity	2HP
Electrical Type	3 Ph
No. Of Motors	1
Capacity	50 kg/batch
Blades & Shaft	Make by SS-304
Maintenance	Regular Cleaning and periodic oiling for gears and chain couplings
Dimension	4.2 feet L x 2.5 feet W x 4.5 feet H
Operation Hours	1 hours in a day
Electrical Consumption	2 KW / 2 units

Curing System	
Plastic Carets Use	24
Curing Period	12 days
Capacity	30 Kg/carat
Remarks	MS Fabricated racking system

Terms of Material supply:

Prices: Ex works:	Ahmedabad
Payment terms:	50 % Advance along with Purchase order, 30% on dispatch and Balance against Performa invoice on installation
Taxes	12% GST applicable (Including)
Installation & Commissioning:	Including
Transportation	Including
Warranty:	Manufacturing warranty will be 12 Months from the date of invoice.
Delivery Period:	20 days after confirm purchase order and advance payment
Validity of offer :	30 days

Other services:

a) We will provide chemicals booster enzyme to run the unit for 01month at free of cost. After 1 month required materials would be either be purchased from us or you can procure from market.

QUOTATION:

The system includes

1. Organic Waste Shredder
2. Composting Machine
3. Curing System

The total payable amount will be **Rs. 2,87, 500 net.**

Detailed O&M guidance shall be provided after the installation is complete.

PYROLYTIC DECOMPOSITION SYSTEM

It Does not Burn garbage it decomposes through molecular disintegration into fragment compounds in oxygen starved Environment. It is based on low temperature pyrolysis that decomposes total wastes except metallic.

INPUTS
All types of wastes such as
- Industrial waste
- Hazardous medical waste
- Kitchen waste
- Agricultural waste
- Wood, vinyl, organic sludge
- Rugs, batteries, tires, etc.

Decomposition
Starts at 200 - 300
Degree Temperature

OUTPUTS
- Vapour (Non Toxic)
- Ash which can be either used as fertilizer or for brick manufacturing.

- No fuel, No electricity required.
- It does not require any segregation of wastes. but rather focused on total destruction of both toxic, hazardous wastes that are difficult to handle & manage.
- VDS can reduces 01 (one) ton of garbage into only 03(three) kg of its total volume.
- Recycled waste can be used to earn revenue.
- It is very easy to handle and manage.
- Zero maintenance and a life span more than10 years .
- Ashes can be used as fertilizers and in making bricks
- Tar can be used for constructing roads.

QUOTATION:

System Cost: Rs. 6,35,480

Tax Payable (18%): Rs. 1,14,387

Net Payable inclusive of transport and commissioning: **Rs. 7,49,867 net**

Total Payable for both the systems = Rs. 10,37,367 net.

Regards,

RE-DEAL Solutions

09201 35045

Vraj

BLU-TEK

B L ENGINEERING

REGD.OFFICE& WORKS:
Plot No. 455, Phase - II, G.I.D.C. Vatva, Ahmedabad-382 445 INDA.
(M):+91-7600033622, -91-9924202022 (PH): +91-7925833713.
Email:info@blengineering.net, sales@blengineering.net, blengineering@hotmail.com
WEBSITE: www.blengineering.net

ISO 9001 : 2008 COMPANY

MANUFACTURING OF ALL KIND OF INCINERATOR PLANTS AND POLLUTION CONTROL EQUIPMENTS

Date: 18/09/2017

Ref.No: BLE/AB/J/QTN/15-16/51

To,
Charusat University of Science & Technology,
Ahmedabad.

Subject : Quotation for 5 kg/hr Electric Fired Solid Waste Pyrolysis system

Dear Sir,

In context to above subject and our telecommunication our technical dept. have furnished the following details of the Electric fired solid waste pyrolysis system for 5kg/hr. The technical details are followed by our offer for the said system with terms and conditions. Kindly refer the following parameters meeting your requirements and please feel free to contact us for your concerns or queries.

1. TECHNICAL SPECIFICATION OF 5 KG/HR SOLID WASTE PYROLYSIS SYSTEM :

PRIMARY REACTOR		
TYPE	:	RECTANGULAR
MoC	:	MS 2062
FUNCTION	:	Thermal Disintegration of Solid Waste
SECONDARY CHAMBER		
TYPE	:	RECTANGULAR
FUNCTION	:	To Combust the fuel gas mixture
MoC	:	Shell : BQ-516
Heating Element (Heating Source)		
COMBUSTION	:	01 NOS. (1 NO. FOR PRIMARY CHAMBER -8 kW 3PH) 01 NOS. (1 no. For Secondary Chamber 4-kW 3PH)
CIRCULATION (SCRUBBING) PUMP		
TYPE	:	CENTRIFUGAL MUD PUMP
SIZE	:	125mm X 15mm
POWER	:	0.5 HP @ 1440 RPM
MoC	:	CONNECTED PART SS-316 COMPLETEWITH REPUTED MAKE
QUENCHER cum Scrubber		
TYPE & MoC	:	Negative Pressure Jet Type with Shell – SS316
FUNCTION	:	To quench the gases from secondary reactor
ID FAN		
POWER	:	2 HP, 3 Phase, 415 VAC, 50HZ
MOC	:	CONTACT PART MS-2062 & OUTER BODY MS 2062 WITH BASE FRAME DAMPER, V BELT AND PULLEYES ETC.
FUNCTION	:	To Provide negative pressure in all sub system and to carry the exhaust as out to atmosphere.

+ FD Fan
1 HP, 1-Phase, 50Hz

2. PROJECT COST:

Sr. No.	Item Description	Cost In INR
1.	Pyrolysis system for disposal of 5kg/Hr Solid Waste (Paper, Plastic, Cardboard)	7,00,000.00
2.	Erection & Commissioning Charges	25,000.00
3.	Transportation	20,000.00
TOTAL (In words Rupees Seven Lakhs Forty Five Thousan Only)/-		7,45,000.00

+FD fan
+ Shed

+18%. 15000-00

Total 760000/-

12/12/17 Approved
12/12

3. TERMS & CONDITIONS:

a. **Price Basis :**
The offered prices exclusive of all taxes, govt. levies and duties. All the taxes shall be applicable extra on the above price as per govt. norms at the time of billing.

b. **Payment Terms:**

i) 50% of the order value as advance along with confirmed order.

ii) 50% of the order value against delivery of proposed Pyrolysis system Plant.

iii) All payments to be made by cheque/DD in faviour of M/s "B L Engineering, Ahmedabad". In case of electronic fund transfer, the payment may be made through RTGS with details as under:

1. Bank name : Bank of Baroda
2. Branch : Vatva Industrial Branch
3. Company name : B L Engineering
4. A/c number : 15960200C00005
5. IFSC code : BARB0INDVAT

c. **Duration:**

- The total duration of the project shall be 2 months. This however, excludes the time taken for obtaining approval of design and drawings.

d. **Validity of proposal:**
This proposal is valid for a period of 30 days.

e. **Warranty:**
The performance of equipment carries a warranty of 12 months from the date of commissioning. Warranty of all bought out items is subject to warrantee offered by the purchased parts suppliers like electric motor, electronic controllers and all other electronic parts. This warrantee is further subject to proper storage, proper handling and operation. The warrantee shall be considered void on willful damage to equipment and parts and by labour unrest and by natural calamities.

f. **Right to design & modifications:**
B. L. Engineering shall have the right to modify or make alterations in design and rating of the components to meet the performance criteria of Pyrolysis system Plant without any prior consent.

BLU-TEK®

B L ENGINEERING

Regd. Office and works :
Plot No. 455, Phase II, G.I.D.C. Vatva, Ahmedabad-382 445.
Contact : +91-9974-137-636: +91-9924-202-022: +91-7600-033-622
Email : blengineering@hotmail.com: info@blengineering.net: W : www.blengineering.net

Manufacturer of all kinds of Incinerators & Plasma Pyrolysis Systems

DELIVERY CHALLAN
ORIGINAL - WHITE
DUPLICATE - YELLOW
TRIPLICATE - PINK

M/s. Charotar University Of Science And Technology, CHARUSAT campus, Changa, Nadiad-Petlad Highway, (Gujarat)- 388421

Buyer's TIN No. :

D.C. Book No. 01

D.C. No. 02 Date :

Order No. : (HA/ADM/IDMS/

Date : (2/2/18) 18/02/20

Sr. No.	Description	HSN Code	Qty.	Remarks
01)	Supply & Installation of 5 Kg/HR Electric Fired Solid Waste Pyrolysis System at CHARUSAT Campus (with Accessories)	8417	01 JOB.	Despatch Through GJ.05. AZ. 0332
	01) Pyrolysis System — 01 NO.			
	02) Shed — 01 NO.			

- Above goods received in good order & conditions.
- Any complain regarding above goods should be lodged in writing within 24 hours from the date of receiving.

TIN GST : 24075601048 Dt. 01/07/02
TIN CST : 24575601048 Dt. 31/12/96

Receiver's Signature

For, B L ENGINEERING

1/7
0111

B L ENGINEERING

REGD.OFFICE & WORKS:
Plot No. 455, Phase - II, G.I.D.C. Vatva, Ahmedabad-382 445. INDIA.
(M):+91-7600033622, +91-9924202022 (PH): +91-7925833713.
Email:info@blengineering.net, sales@blengineering.net, blengineering@hotmail.com
WEBSITE: www.blengineering.net

ISO 9001 : 2008 COMPANY

MANUFACTURING OF ALL KIND OF INCINERATOR PLANTS AND POLLUTION CONTROL EQUIPMENTS

TAX INVOICE (Duplicate)

To,	Invoice No.	Date
Charotar University Of Science And Technology, CHARUSAT Campus - Changa, Off Nadiad - Petlad Highway, Gujarat - 388421	2	27.04.2018
	Delivery Note	Date
	2	27.04.2018
Ref. WO No. CHA/ADM/IDMS/18/02/20 dated 02/02/2018	Despatch Through GJ.05.AZ.0332	

Sr.No.	PARTICULARS	HSN	Qty	RATE	AMOUNT (INR)
1	Supply and Installation of "BLUTEK" make 5 KG/HR Cap. Electric Fired Solid Waste Pyrolysis System at Charusat Campus.	84170000	1 Job	7,60,000.00	7,60,000.00
	Add : SGST @ 9%				68,400.00
	Add : CGST @ 9%				68,400.00
Total In Words Rupees Eight Lakhs Ninty Six Thousand Eight Hundred Only/-					**8,96,800.00**

Company's GSTIN : 24AACFB1283E1Z0
Company's PAN : AACFB1283E
Buyer's GSTIN :

Company's Bank : Bank of Baroda
Bank Branch : I.E.Vatva
A/C No. : 15960200000005
IFSC Code : BARB0INDVAT
(Fifth Character "Zero")

Declaration :

We declared that this invoice shows the actual price of the goods describes and that all particulares are true.

Customer's Seal and Signature

B. L. ENGINEERING
455, G.I.D.C., Phase-II,
Vatva, Ahmedabad-382445

For B L Engineering

27/04/18

Authorised Signatory

Subject to Ahmedabad Jurisdiction
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117/011

B L ENGINEERING

REGD.OFFICE & WORKS:
Plot No. 455, Phase - II, G.I.D.C. Vatva, Ahmedabad-382 445. INDIA.
(M):+91-7600033622, +91-9924202022 (PH): +91-7925833713.
Email:info@blengineering.net, sales@blengineering.net, blengineering@hotmail.com
WEBSITE: www.blengineering.net

ISO 9001 : 2008 COMPANY

MANUFACTURING OF ALL KIND OF INCINERATOR PLANTS AND POLLUTION CONTROL EQUIPMENTS

TAX INVOICE (Triplicate)

To, Charotar University Of Science And Technology, CHARUSAT Campus - Changa, Off Nadiad - Petlad Highway, Gujarat - 388421	Invoice No. 2	Date 27.04.2018
	Delivery Note 2	Date 27.04.2018
Ref. WO No. CHA/ADM/IDMS/18/02/20 dated 02/02/2018	Despatch Through GJ.05.AZ.0332	

Sr.No.	PARTICULARS	HSN	Qty	RATE	AMOUNT (INR)
1	Supply and Installation of "BLUTEK" make 5 KG/HR Cap. Electric Fired Solid Waste Pyrolysis System at Charusat Campus.	84170000	1 Job	7,60,000.00	7,60,000.00
	Add : SGST @ 9%				68,400.00
	Add : CGST @ 9%				68,400.00
	Total In Words Rupees Eight Lakhs Ninty Six Thousand Eight Hundred Only/-				8,96,800.00

Company's GSTIN : 24AACFB1283E1Z0
Company's PAN : AACFB1283E
Buyer's GSTIN :

Company's Bank : Bank of Baroda
Bank Branch : I.E.Vatva
A/C No. : 15960200000005
IFSC Code : BARB0INDVAT
(Fifth Character "Zero")

Declaration :

We declared that this invoice shows the actual price of the goods describes and that all particulares are true.

Customer's Seal and Signature

For B L Engineering

B. L. ENGINEERING
455, G.I.D.C., Phase-II,
Vatva, Ahmedabad-382445

27/04/18

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