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What process industries need the most is a technology and process partner who really understands their process and effective use of technological advanced solutions to De-bottleneck and Optimize the Main and Sub-process including Utilities by customized solutions.

We are the trusted partners in the field of automation, who can take up the challenges of today and tomorrow. With our many years of industry experience and reliable products, systems and solutions we can help you achieve your goals for your sustainable business success.

Productivity and Efficiency are critical success factors for any process industries. Pre-engineering plays a important and critical role in this especially when it relates to more complex process and plants. A high level of efficiency is already demanded at the Pre-engineering stage, as the first step toward better production: faster, more flexible, reliable and more intelligent.

Seamless interaction between plant expertise and automation is a fundamental prerequisite for the efficient operation of every plant and process. We offer solution to optimize the potential of your plant over the entire life cycle right from process control to product quality monitoring and consistent process optimization.

Keeping seamless integration of the processes we can increase the plant performance and profitability. You benefit from greater process flexibility as well as higher plant availability and investment confidence.

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Chemicals

Organic

In-Organic

Continuous

Batch Process

Drying

Spray drying

Rotary kiln

Paddle dryers

Fluid bed dryer

Tray ovens

Spray drying is a method of producing a dry powder from a liquid or slurry by rapidly drying with a hot gas.

Complete instrumentation package solution including Mother liquor preparation, Hot air generator –direct/indirect, spray drying, atomizer, cyclone, scrubber and fluidized bed controls including packing

Food: Milk powder, coffee, tea, eggs, cereal, spices, flavorings, starch and starch derivatives, vitamins, enzymes, stevia, colorings

Pharmaceutical: antibiotics, medical ingredients, additives

Industrial: paint pigments, color additives, ceramic materials, catalyst supports, microalgae, chemicals

Rotary dryer/ Calciner is a type of dryer employed to minimize the liquid moisture content of the material it is handling (or) are used to cause chemical reactions or state changes in varying materials by bringing it into direct or indirect contact with a heated gas.

Complete solution including air heater, Kiln feed control, Product bulk density control, surface temperature profiling, product temperature measurement and control, heat recovery systems, scrubber and product cooler controls

Agriculture products

Food products,

Mining products

Mineral products,

Fertilizer products

Chemical products

Agglomeration

Paddle dryer is a mechanically agitated, indirect heat transfer devices that add or remove heat from a process mass. They are used for drying, heating, cooling, pasteurization, crystallizing

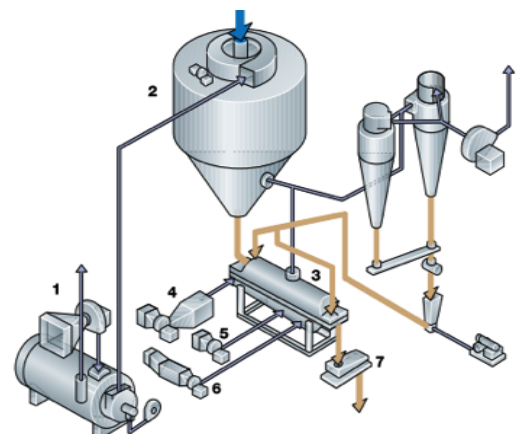
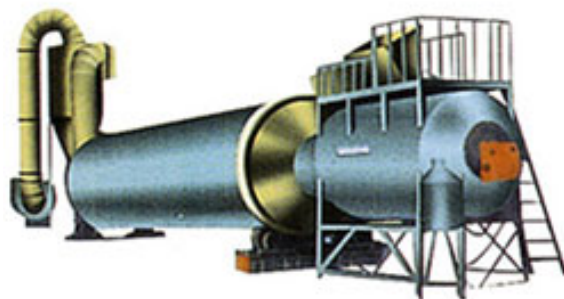
Complete solution including Thermic oil heaters, Steam generators, Zone temperature control, Feed control system, Emission control etc..

Chemical: salts, catalyst, brominated organics, cellulose, starch

Petrochemical: Solids devolatilization

Polymer and plastic: Polypropylene, PET, Polycarbonate, PTA Polyphenylsulfide,

Food: flour, beverage powders, confectionary ingredients, meat products
Mine metal: metal powders, metal carbonates, sulfates and hydroxides



Distillation process involving the conversion of a liquid into vapor that is subsequently condensed back to liquid form. Distillation is used to separate liquids from nonvolatile solids, or in the separation of two or more liquids having different boiling points.

We offer complete instrument package for different distillation process includes Simple, Fractional, Vacuum distillation etc.. Which includes Feed control, Re-boiler level/ temperature control, Reflux control, Column pressure control, Accumulator level control, Product purity control etc.. Feedback/ Feed forward loops, ratio control etc..

Reactors can be batch or continuous,

Process reactors are used in adhesives, agriculture, chemical, cosmetics, food and beverage production, paints and coating production, paper and pulp processing, pharmaceutical and medical production, plastics/thermoplastic processing.

We offer a control system to control the parameters such as DO, foam, pH, speed & temperature. System can be designed to have automatic batch quantity addition, pH dosing system, additive/ catalyst addition, temperature profile control using Steam/ Thermic oil/ Chilled water, Cooling water, Pressure control, Vent control, N2 blanketing

Batch Process Management Software has rich, proven functionality for *recipe and procedure management, paperless operating instructions and electronic batch records*. It is scalable and flexible batch management system with complete batch history and traceability.

Control system connectivity and operator procedure integration improves enhanced automation, empowered people and increased operational efficiencies.

This facilitates complete functional capabilities, increases operational efficiencies, improved quality sigma value, compliance to safety standard and minimizes the environmental issues

Chemicals

Organic

In-Organic

Continuous

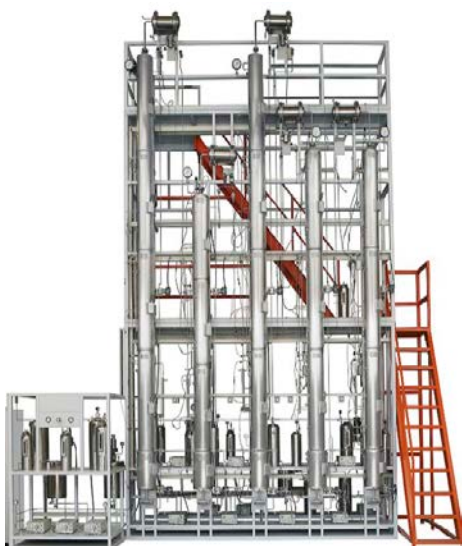
Batch Process

Distillation

Reactors

Neutralizers

Evaporators



Steel

Coal / Sinter
moisturizing

Oxygen skids

Gas Mixing
stations

Argon. Nitrogen
skids

Cooling water
skids

Caster
automation

Gas Mixing Stations

for gases like Oxygen, Argon, Nitrogen & air which are used for decarburization, degassing and desulphurization in Ladle Furnace, AOD, BOF converter etc .. The gas mixing stations designed for this application provides safe, smooth operation. Features include upstream pressure control, downstream flow control.

The control and instrumentation system provides a complete Piping Skid ready for site use directly with either conventional controller based control panel or with PLC/ SCADA system to display process parameters such as flow rates, pressure, totalized flow. The system provides features like data acquisition, control, report generation. The system will also provide converter, lance hood, burner safety interlocks, audio-visual alarms..

BF gas / Coke oven Gas mixing skids

In integrated steel plants, BF gas is normally being used mixed with either coke oven gas or converter gas or both. The mixed gas is used as a fuel in various furnace of the plant.

Our scope involves of design, engineering, fabrication, supply and commission of the full Blast Furnace / Coke Oven gas mixing station with option of Natural gas injection to enrich the calorific value of the mixed gas at outlet. As both the gas operating pressure are relatively low, care is taken during design stage to have low pressure drop across the skid. And also we can design the control logic to achieve minimum calorific value at outlet. Either system shall have dedicated control panel or centralized PLC based control system for remote monitoring and control.

Coal Moisturizing System

Process control and cost savings are the primary focus for many industries. It is essential to measure and control the input variables within limits to achieve the goals. The measurement and control of dry weight of coke provides better thermal control and improves the process control in blast furnace.

We can offer a total solution including measurement of Pre and Post moisture levels and ratio control with coal feed rate to optimize the water spray rate. The water sprayed will be split in to major and minor addition of water. A complete spray manifold is designed to cover the entire belt area to get optimum output. A PLC control system controls the entire operation and having facility to hook up with main DCS plant control system.



Oxy-Fuel burner sys

Conventional air-fuel burners uses combustion air and nitrogen present in the air gets heated and exhausted from the furnace, resulting in unnecessary heat and energy losses.

Oxy-fuel burners uses oxygen and reduces the quantity of air and hence the nitrogen content.

The fuel and oxygen are injected into the furnace through separate ports, to form a oxy-fuel flame.

This effect provides:

- Fuel saving
- Uniform heating
- Low flame temperature
- Less NOx formation
- Reduced CO2 emission

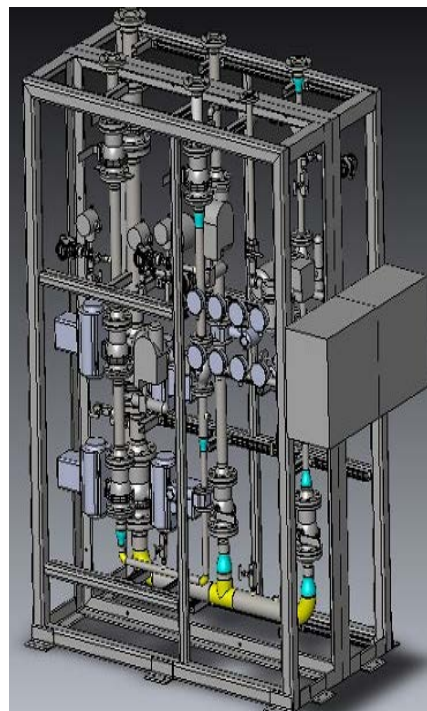
We offer complete PLC based instrument system which includes Oxygen pressure regulation and flow control, Fuel oil heating, pressure regulation and flow control, atomizing air/steam control, cooling water control for burner gun system, pilot flame system. The entire system is skid mounted, fabricated and tested before delivery at site. System is designed with critical interlock to enhance the safety.

Oxygen Enrichment

Oxygen is required for any combustion process. Incremental increase in oxygen percentage shall have better impact on burning zone control and kiln operations.

Oxygen enhances the combustion of fuels, enabling improved burning zone control, greater kiln stability, and lower emissions. By increasing the oxygen concentration of combustion air through the addition of relatively pure oxygen, flame temperatures rise, heat transfer rates improve, and overall combustion efficiency increases. It helps in increase production and lower fuel costs

We offer complete instrument package including Oxygen pressure control, flow control, injection Spurger on duct, ratio controller to maintain the oxygen injection with respect to combustion air



Ferrous & Non-Ferrous

Furnace control

Oxygen

Enrichment

Oxy-Fuel systems

Natural Gas RMS/MRS skids for Natural Gas from high pressure distribution point to low pressure end user plant requirement with custody metering.

We offer complete design & engineering, fabrication, installation and commissioning of Natural Gas Pressure Reduction & Metering Skids including gas conditioning equipment like Knock out drum, Two stage filter separator/ Dry gas filters, Vane mist eliminator, scrubber, temperature compensation for Joule Thomson effect using Water bath heaters – Electric/ Gas fired, Multi stage pressure reduction, Custody metering as per AGA standards using single/ double chamber orifice assembly, Turbine/ Ultrasonic flow meter, Gas Chromatograph with flow computers with facility for integrating with plant level SCADA system with Telemetry for remote transmission.

Fuel Skids for Liquid and Gas fuels like fuel Furnace Oil, Diesel, LPG, LNG, Natural gas etc.. used for plant furnace needs. The skid involves both conditioning and pressure/ flow control , ratio control with safety interlocks and optional steam / electrical heat tracing.

The control and instrumentation system provides a complete Piping Skid ready for site use directly either with conventional controller based control panel or with PLC/ SCADA system to display process parameters such as flow rates, pressure, totalized flow. The skid uses conditioning equipment like strainers/ micro filters to filter out unwanted foreign particles, recycling system, safety release. The system will also provide burner safety interlocks and audio-visual alarms..

Custody Metering Skids for gases like Natural gas, Liquid Petroleum Gas, Crude oil, Edible oil, Solvents etc.. where two different agencies are involved in commercial bonding.

We offer complete design & engineering, fabrication, installation and commissioning of the complete skid. This includes conditioning equipment like filters/ strainers, emergency shut down valves, manual isolation valves, Master and Custody meter, Pressure/Temperature correction, Flow control valves, Flow computer and optionally with mobile provers. The system is fully fabricated including stress analysis, radiography tests and leakage test. The custody metering system is provided with either single or multiple stream flow computer, PLC control, SCADA system.

Oil & Gas

Natural gas custody metering skids

Natural Gas pressure reduction stations

Natural Gas City gas stations

Natural Gas RMS/ MRS stations

LPG skids

Crude oil skids

Commercial oil skids



Oil & Gas

Tanker Loading and Unloading

Tank Farm Management

Tanker Loading and Unloading system

Chemicals, edible oil, Oil and derivatives requires accurate, error free loading and unloading operations without compromising on environment and safety norms.

We offer complete design & engineering, fabrication, installation and commissioning of Tanker loading and Unloading stations which includes; Top/ Bottom loading skids, Option of variety of flow meters include Coriolis, Turbine and Positive displacement meters, batch controller, Access control system, Tanker earthing system, Overspill monitors, emergency shutdown system, Loading arms, Tank level gauging. We offer dedicated PLC based SCADA system and integrating with plant level system. The system can be seamlessly integrated with ERP solutions in importing and exporting of data

Tank Farm Management

Management involves all necessary operations in order to run an efficient liquid storage system. Operations for the smooth operation of tank farms can be simplified using advanced technologies.

We offer complete solution for Tank farm management. This includes monitoring of tank level, water layer above or below the liquid, Multi point temperature measurement, spot/ average temperature across the tank level, corrected volume, specific gravity of the liquid etc.. of each tank and displayed at Tank side indicator. All the tank side indicators are connected to a common centralized SCADA system in control room. The system also offers appropriate control of temperature for storage tanks and steam tracing systems

Tank Protection System

Storage tanks are subject to explosive risk if air enters the tanks containing volatile compound. And also when liquid is pumped out, vacuum is developed. Hence it is necessary to protect the tank from explosive risk and also bulge due to high vacuum. Hence a low positive constant nitrogen gas pressure is maintained in the vapor space of a tank, to reduce the oxygen content in the vapor space, eliminating the possibility of risk of explosion and also prevents any vacuum development.

We offer Nitrogen blanketing system including manifold for nitrogen cylinders, pressure reduction & low pressure regulators, flow monitoring system, safety interlock system to control the in-breathing and out-breathing and pressure / vacuum breather valves for the tanks as additional protection



Water Metering and Quality measurements

We all know water is the most precious resource among all. Today we all are facing the biggest problem that is scarcity of water drinking water as the level of water is continually decreasing. Hence it is essential to monitor the water quantity and quality.

We offer complete water solution right from water resource metering either from river pumping, bore wells, government body distribution etc.. And also measuring the water quality parameters to ascertain the quality of water. Water metering by Electro Magnetic Flow meters, Orifice metering, Mechanical turbine meter, Open channel Weir and water quality monitoring using pH, TDS, Conductivity, Dissolved oxygen, Residual chlorine etc.. Also it is important to monitor the water level in sumps/ tanks, pump pressure and power We offer dedicated SCADA system to display the real time value, trends, reports etc.

Remote Telemetry Systems for water monitoring offer cost savings, easy access to remote monitoring locations. The advantages are Frequent access to detailed data, No need to travel to remote field locations, Elimination of manual data collection, , Self-management gives additional savings and data security. The applications are Remote water level monitoring, Long-term drought monitoring, Water in take Management, Water distribution Management, Mine water management, Flood and storm water management etc..

We offer complete solution in providing two way telemetry both monitoring and controlling with local PLC with centralized SCADA system. The system uses GSM/ GPRS network for transferring the data. The package also allows monitoring the data and trends over dedicated web site with security.

Water / Sewage Treatment Plant Water treatment is the process of removing pollutants from raw water to produce safe water for human use Water should also be aesthetically acceptable, free from turbidity, smell and unpleasant color.

We offer complete instrumentation system for water treatment/ wastewater treatment/ sewage water plants. This includes monitoring and control of treatment process using dedicated PLC based SCADA system. System automation includes in Coagulation/ Flocculation, Filtration, Disinfection and Sludge removal. We offer automatic alum/ lime solution addition, aeration of water, filter bed level control, pH correction, chlorine dosing system etc.. We also do full/ semi automation in Evaporation and Crystallization, Micro / Ultra / Nano filtrations, RO plants

Water & Wastewater

Water metering

Water quality measurements

Remote Telemetry Systems

Water Treatment Plant automation

RO Plant automation

Sewage Plant Automation

Waste Water Management



Flow
Pressure
Temperature
Level
pH
TDS
Conductivity
Residual Chlorine

- Tank weighing
- Mixing reactors
- Drying
- Moisture control
- Edible oil Refinery
- Hydrogenation
- Deodization
- Batching/
Blending
- Auto Clave
- Solvent extraction
- On line Weighing

Drying In a diversified and extensive food industry, it would be expected that a great number of different types of dryer would be in use. The major problem in calculations on real dryers is that conditions change as the drying air and the drying solids move along the dryer in a continuous dryer, or change with time in the batch dryer. Typical dryer are Tray oven, Rotary drier, Roller Drum drier, Fluidized bed drier, Spray drier, Pneumatic drier, vacuum drier etc..

We offer complete dryer automation including Feed control, Drying air Humidity & Temperature control, Drying air flow rate, Residence time, Moisture measurement and control, Bed level control, Air heater automation, Heat exchanger automation, feed-forward and feed-back control algorithms. The entire system is monitored & controlled on real time by using a PLC/ SCADA system to display real time data, trends, reports & alarms

Mixing reactors for mixing of products it is possible to use either a conventional batch mixer or a continuous blending control system. If frequent product changes or with many products that have to be prepared, it may well be sensible to use a batch mixing plant for the preparation of all types. Either parallel flow or sequential addition is employed depending upon the product. Combination of batch mixing and continuous blending is popular in most of the industries. *We offer solution in providing automatic mixing reactor control, including charging of solid/ liquid charging. We can provide both parallel and sequence charging of ingredients in the reactor using flow meters, ratio control, addition of catalysts and dosing system for pH control, DO control, Heating/ Cooling profile control using Steam/TO, Cooling/ Chilled water, tank pressure/ vent control, scrubber in product recovery etc..*

Tank weighing is invariably used in Food & Beverage industries to have very accurate control of raw material addition. The entire tank need to be installed over a load cell and the control system used to control the raw material and catalyst addition. This eliminates the requirement of flow meters in the feed system. *We offer complete weigh system for tanker weighing, which can be either Leg or Lug mounted. The system can be linked with PLC control system to control the raw material addition. The system can be designed to have common control system for multiple mixing tanks, reactors so that uniform result can be achieved. The system is especially useful, when multiple ingredients are added to produce a single product and also to have accurate mass balance of the system operation. We also provide flexible links to isolate the tank from any fixed member.*



Food & Beverages

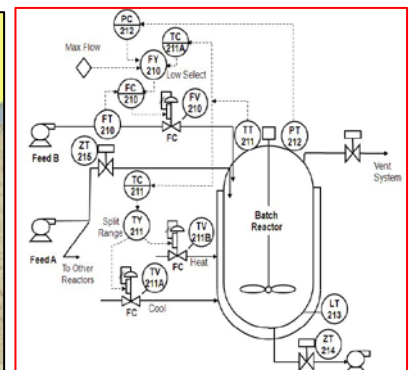
- Tank weighing
- Mixing reactors
- Drying
- Moisture control
- Edible oil Refinery
- Hydrogenation
- Deodization
- Batching/ Blending
- Auto Clave
- Solvent extraction
- On line Weighing

Hydrogenation is a chemical process that adds hydrogen atoms to the available double bonds in the vegetable oil. As the degree of hydrogenation increases, the amount of saturated fats increases and mono and polyunsaturated fats decrease.

We offer hydrogen handling system for Auto Claves. This includes hydrogen pressure reduction from the pressure range of 150 bar to 2-3 bar G pressure, hydrogen flow metering, thermic oil circulation system, auto clave vacuum control, agitator water cooling circuit, controlled vent system and auto sampling system. The entire system is designed with full safety interlocks, so that under eventuality of any mis-operation, the entire system is shutdown to safe mode. We conduct HAZOP study to design the system. We offer dedicated redundant PLC with SCADA system to display the real time value, trends, reports.

Moisture Control
Knowing the moisture content of the materials used throughout the food and baking process has become one of the most critical components in the industry. It is also important to know the moisture content during the mixing stage in the food manufacturing process as water affects quality and consistency of the end product. Variations and excess moisture in mixes can result in clumping and out of spec recipe formulas. Testing food moisture during this time will allow adjustments to be made throughout the mixing process to manage moisture levels. *We offer dehumidifier control system by independently controlling the humidity and temperature levels to control the moisture levels in the product. We integrate the control system with a real time moisture analyzers to have continuous corrective action on real time.*

Batching/ Blending
Food and beverage production process involves addition of multiple ingredients and catalyst/ additive of solid or liquid in nature at proper ratio. Typically the same reactor is used for producing multiple products of different set of recipe and process conditions. And also it is necessary to have unique batch number with process traceable system. *We offer instrumentation system for batch process, where the system stores the various raw material, additives quantity, process parameters for each product for unit volume. By entering the required batch quantity, system automatically calculates the required quantity and populates on the screen. And also system sequencing the predefined operation and controls the process parameter as per the recipe management. The system can be designed to hold at each step with operator prompt and confirmation*



Oven/ Dryer Glass and Ceramic / Refractory process involves drying of product at different stages of the process. This inclusive of control of Temperature profiling, humidification, de-humidification, air flow monitoring and control with automatic air distribution adjustment on real time to ensure the air flow circulation is uniform across the dryer. *We offer a customized system to have accurate process control of different type of dryers and ovens. This inclusive of temperature profiling, humidification and de-humidification of the oven, air flow and distribution pattern monitoring and control. The humidification system and temperature profiling system are designed such that to keep minimum product losses, optimum drying time and better thermal efficiencies. We offer dedicated PLC per oven/ dryer and common plant wide SCADA system to display the real time value, trends, reports.*

Kiln/ Furnace automation High temperature furnaces/ kilns of different variety with electrically heated or Gas, Oil or dual fuel fired system are in use for ceramic and glass process. The process are on pre-heating, firing zone, rapid cooling zone, cooling zones. Process gas circulating systems and energy optimization by recycling hot air are in practice. *We offer control system including oil/ gas treatment and handling, monitoring & controlling of the processes which includes pilot ignition of burners, main flame monitoring, temperature control of different zone, process gas circulating and conditioning system, residence time monitoring by conveyor/ roller speed, automatic lubrication system, automatic feed loading and product unloading system. The entire system is controlled by dedicated PLC and SCADA system with real time trends, reports, alarm etc..*

Autoclaved aerated concrete, silica boards, are cured in an auto claves in controlled process condition. The process involves of accurate control of temperature profiling and pressure/ vacuum control in the auto clave and effective steam management, condensate removals. *We offer automatic instrumentation system for multiple auto claves, where the PLC based system monitors and controls the auto clave more accurately. The control scheme includes inlet steam pressure control, steam consumption monitoring, Vacuum / pressure control inside the auto clave, Automatic temperature profile management, Steam control to maintain temperature, steam transfer between auto claves, automatic condensate removal system. The system is monitored using SCADA system with real time values, trends, reports, histogram etc..*

Glass, Ceramic & Refractories

Furnace control

Dryer control

Roller kiln automation

Hydraulic press automation

Spray drying

Auto clave



Textile/ Tannery/ Rubber & Latex

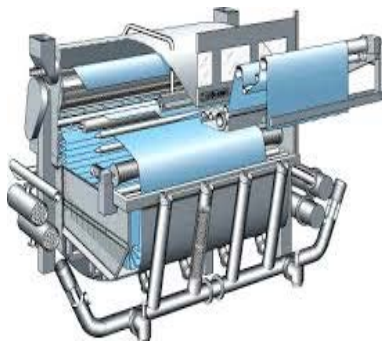
Dyeing

Drying

Dyeing and Drying process in Textile

involves lot of minute parameters, which are critical to improve the productivity and consistency in quality. The processes of dye and auxiliary chemical addition, drying as well as loading and unloading of textile materials were also automated to result in automated dye-house management.

We offer a customized instrumentation solution for Textile dyeing and drying process. It can be continuous, semi-continuous or batch process. This includes weigh system for raw material, dye dissolving and distribution system, bath, washing unit and chemical tanks level control, pH control, dosing system, profiling and temperature control, washing efficiency by conductivity monitoring, Concentration control, steam pressure control. We offer dedicated PLC per oven/ dryer and common plant wide SCADA system to display the real time value, trends, reports.



Tannery wet process

involves either fully automatic or semi-automatic process, where the drum automation, water batching, chemical preparation and dosing and hot water charging to the drum, pH measurement with certain process control. *We offer customized control system providing a complete solution for automation of all wet process in a tannery, including soaking, liming, tanning and dyeing. The component includes complete drum automation, Batching water control, and chemical dosing system, recipe management and operation monitoring to suit individual tannery requirements. Each drum and chemical preparation/ water area are provided with Micro PLC and standalone HMI unit for operator interface. The individual drum HMI are integrated with common SCADA system with real time trends, reports, alarms with facility for remote web enabled access*



Latex/ Rubber process invariably consists of mixing, dispensing, dipping, compounding, former cleaning, drying, power removal, leaching etc.. The automation helps in optimizing the process, improving the product consistency with reduced manpower.

We offer automation solution, which inclusive of preparation & mixing of raw materials, pH automatic correction of additives in former acid cleaning tank, Hot water rinsing tank temperature control, temperature control for dryers, Coagulant preparation & automatic transferring to line dip tanks, leaching tank fresh water level and pH control, size sorting system, powder removal tumbler control, dry powder collection system to make it environmentally friendly. The system is provided with small micro PLC with HMI for each stage and whole operation is monitored using Plant wide SCADA system with real time values, trends, histogram, batch production reports etc..



Pump Test bed It is mandatory to test the pumps after complete assembly to evaluate the pump performance. The typical performance test involves testing of the pump head (H), power (P), and efficiency (η) against flow rate (Q). And also it is necessary to have a common test bed for multiple pump

models.

We offer a customized system for each pump & customized test bed set up for group of pumps. The test set up include the measurement of discharge flow meter, discharge and suction pressure & temperature, discharge flow throttling valve, suction pressure throttling valve, motor power/ frequency, pump speed. As an option, we measure pump vibration levels and torque on real time. We offer dedicated PLC to control the test bed with predefined test points. A database of full range of pumps & motor parameters for easy pick up with SCADA system to display the real time value, trends, reports.

Fans/ Blower Test bed Similar to pumps, turbo fans/ blowers do require to test its performance. The inspection items shall include Fan total or static pressure, air volume, speed, shaft power, total pressure efficiency, temperature, noise at running condition. *We offer a customized system for each fan/ blower & customized test bed set up for group of fans.*

The test set up includes the measurement of suction and discharge pressure, shaft power and airflow, noise levels also allow the fan to run till bearing temperature get constant & record bearing temperatures. We supply air volume measurement using pitot tube, orifice plate, suction nozzles to suit each fans/ blowers. We offer dedicated PLC to control the test bed with predefined test points. A database of full range of fans & motor details for easy pick up with SCADA system to display the real time.

Customized test bed During manufacturing of critical components for specialized projects, it is essential to test the test specimen for intended purpose. It is necessary to control the pressure, flow, temperature and level during the testing and evaluate the test specimen for intended purpose. It is necessary to log the data at high sampling rate in the order of 1,000 samples per second. In many case it is needed to design the system with specialized materials. *We design, engineering, fabricate, install and commission of the complete test skid and pilot plants with full instruments. PLC & SCADA based system with real time values, trends, reports, etc. The system can be supplied with a Quality add on software, where with test results data, we can perform the Statistical Process Control charts, Process capability analysis, etc.. We can design DoE for new product developments.*

Test Rigs

Pumps

Fans/ Blowers

Control valve

Flow meter

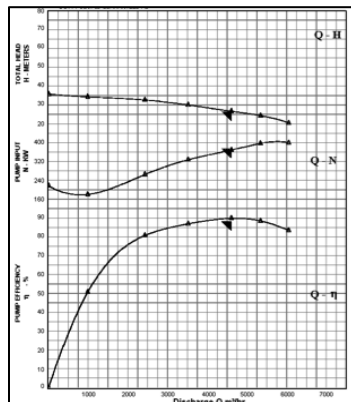
Level

Temperature

Workshop calibration station

Institution process test rigs

Pilot plants



Utilities

Boiler control & Optimization

Compressor sequencing and optimization

Water Management

Fuel management system

Chiller monitoring & optimization

Energy Management

Pump/Fan efficiency monitoring

Boiler Control It is necessary to monitor and enhance the boiler performance to get higher Steam/Fuel ratio and minimize the losses to improve the efficiency
We offer a customized system for each and individual boilers. This includes combustion control & level control. The scope includes either revamping of running unit or new unit. We offer boiler three-element control with boiler level, feed water & steam flow/ pressure. Economizer control, control of de-aerator tank, feed water pump system. Combustion control includes fuel feed management, primary/ secondary air ratio control, combustion chamber pressure control, oxygen trimming, air preheater, automatic blow down etc.. Multiple boiler load balancing/ sharing can be evolved using control logic. System can be built using Multi-loop controller with relay logic or PLC with SCADA system

Equipment Performance Optimization Plant equipment are designed to deliver few performance indices. Over a period of time, the equipment performance slips from the original datum level. It is required to monitor the equipment on real time basis and ascertain the equipment performance. The equipment can be rotary equipment like pumps, fans, blowers, agitators, compressors, drives etc.. or static equipment like chiller, heat exchanger, heater/ coolers etc..
We offer a customized system for individual critical equipment to monitor the real time performance. This is achieved by measuring the flow rate, pressure, temperature, level, power etc.. The software can be developed to calculate the equipment performance on real time & annunciate the operator on due for maintenance. The system can be developed using a standard SCADA system to display the real time with Process capability analysis and SPC charts.

Utility Energy Management Plant utility contributes almost 20% of the total cost of any production plant. It is necessary to have a energy management to optimize the resource utilization. The entire improvement can be planned using PDCA cycle. *We offer a system to implement the energy utility management across the plant. The monitoring of the process parameter like flow rate, pressure, temperature, density, level, power etc.. in various process units. This includes monitoring the performance of Steam and Thermic oil generators & distribution system, compressors, multiple compressor sequencing based on load demand, heat exchangers, power monitoring of larger equipment etc.. The system is provided with small micro PLC with HMI for each equipment and whole operation is monitored using Plant wide SCADA system with real time values, trends, histogram etc..*



