



Editorial

Dear All

We are pleased to launch the first newsletter of Control Systems Engineering. Over the past 22 years, companies throughout Pakistan have relied on CSE for successful system integration and automation, for both industrial and commercial applications. Yet we aspire to achieve endless heights of success.

We have initiated this newsletter to create a link between our Customers and Principals. It is hoped that you will find this newsletter informative. Your comments and suggestions are highly appreciated. CSE prays that this new year brings peace and prosperity to our nation and opens new horizons for our industry.

Zehra Hasan Kazmi

CEO's Message

I am very pleased on the publication of our Newsletter. The aim is to update clients and Principals on new products, new developments in the industry and our activities.

2009 was not a good year for the whole world due to economic recession and it was worse for Pakistan, not only due to the worldwide recession but also due to War against Terrorism. However, Thanks to Almighty God that CSE did well by successfully completing its biggest DCS Project at Mustehkam Cement. I hope and pray for a better and prosperous 2010.

Hasan A. Kazmi

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WaterFlux

KROHNE, a market leader in the development and manufacture of innovative measurement technology has introduced Water Flux, an electromagnetic water meter suitable for water and wastewater industries. The new WATERFLUX 3070 is highly accurate and being a magnetic-inductive meter, it is superior to mechanical water meters in terms of pressure loss and long-term stability. For large diameters, the WATERFLUX 3070 has a significant price advantage compared to the lifetime cost of mechanical meters which require filters and rectifiers as well as maintenance and cleaning.



In the case of remote measuring stations, it is often not possible to connect to the power supply. That is why the WATERFLUX can also be combined with the IFC 070 converter, whose

integrated battery provides power for measurement for up to 15 years. This long life cycle is made possible thanks to the unique sensor design, which results in extremely low power consumption of the WATERFLUX components.

Data loggers and GSM transmitters can be optionally ordered as compact modules for the WATERFLUX. The optimized thickness of the metering eddy currents are minimized and allow for highly accurate measurement, ($\pm 0.2\%$).

Cross Stack Laser Gas Analyzer

Fuji Electric Systems has come up with a New Cross Stack Laser Gas Analyzer (ZSS). It is direct insertion type with high advanced technology. It can measure components such as NH_3 , HCL , $\text{NH}_3+\text{H}_2\text{O}$, $\text{HCL}+\text{H}_2\text{O}$ and O_2 gas concentrations in a stack. Because of in-situ measurement, ZSS can be used under high dust conditions, and at the same time, measured gases do not need to prepare a sampling system. With this advantage, it is possible to install upstream of the bag filter where gas sampling is normally difficult.



What's more, ZSS also has the following sophisticated function:

- High response speed
- Excellent long-term stability
- Easy maintenance
- Negligible interference by other gas components
- Measurement in a high-temperature/particulate concentration environment
- Energy saving power consumption

Dynameters

In July 2009 our CEO visited China and joined hands with Dynameters Shanghai Co. Ltd, a professional manufacturer of **Portable-Handheld-Clamp on- Insertion Ultrasonic Flowmeters.**

At present they have been exporting to USA, Italy, Germany, Russia, South Africa, Australia, India, Turkey, etc. On account of innovative R&D capability and advanced equipments, Dynameters can provide not only ultrasonic flowmeters itself, but also welcome OEM component cooperation.



These ultrasonic flowmeters can be used in Power Plants, Oil and Gas, Water and Waste water, Chemical, Pharmaceutical, Food Industry. A few features and advantages are listed below:

- Quick & Easy Installation
- Convenient Maintenance
- Many Mounting modes for choice
- Wide measuring range from 12 mm to 4570 mm pipe dia
- Energy saving, no interruption of liquid, no extra pressure drop
- High Precision; Accuracy +/- 1.0%
- Data logging on SD Memory card
- Insertion type also available with HOT-TAPPED Installations
- Explosion Proof Models also available
- Heat flow BTU function as an option available

Hydrogen Cooled Turbogenerator Monitoring for Safety and Efficiency

- Hydrogen purity means money, just a few percent of impurities can cost thousands of dollars – per day!
- At shutdown and start-up during maintenance periods it is important that the purge cycle is monitored to avoid explosive hydrogen/air mixtures.

Hitech Alternator Purge Gas Monitors are the answer. With three switchable ranges they monitor hydrogen purity and all stages of the purge gas cycle.

Fixed monitors are often preferred for hydrogen purity and the Hitech panel mount instrument can also be retro-fitted into old panels.

Sample conditioning panels are offered if necessary.

Rugged portable instruments are sometimes more convenient for monitoring the purge cycle. Like all Hitech units it is supplied as a complete instrument, fully calibrated and ready to use.



Be efficient. Ensure that you are ready for the next downtime – ask for a quotation today

From the Oldest to the Latest

SUPCON-Mustehkam Cement DCS Revamping Project Demonstration Seminar

A demonstration seminar for the cement industry of Pakistan was organized by SUPCON and M/s Control Systems Engineering, at Mustehkam Cement Ltd's newly upgraded 3300 tpd cement plant, which has been equipped with the ECS-100 DCS of SUPCON. About 30 engineers from various cement plants in Pakistan participated in the event.

The seminar began with a welcome note delivered by Mr. Hasan Kazmi, CEO of Control Systems Engineering, after which, Mr. Shi Dingyue, Vice Director Overseas of SUPCON threw light on the exclusive and evergreen relations between China and Pakistan, which encompass almost every technological domain.

This was followed by two highly commending speeches by Mr. Mahmood Afzal and Mr. Ijaz Malik of Bestway Cement Ltd, in which they highlighted the exceptional performance of the SUPCON project team during the MCL revamping project, which resulted in the timely achievement of a difficult task.

After this, the project managers, Mr. Robin Li of SUPCON and Mr. Fahad Javaid of CSE presented a summarization of the MCL project, outlining the benchmarks defined in the project timeline, and the way in which those were timely met.



In the second session after the tea break, firstly, Dr. Zhong Weitao, Assistant Director Overseas of SUPCON enlightened the audience about the ECS-100 DCS, following which, Mr. David Li, Chief Representative of SUPCON Pakistan apprised them about the current business status of SUPCON in Pakistan. The session concluded with an end user report delivered by Mr. Ghaffar Rao of MCL, who expressed his absolute satisfaction and utmost confidence in the system and services provided by SUPCON.

The participants were served with lunch at the end of the seminar, after which they visited the MCL cement plant to have a working view of the Supcon DCS.

The visit concluded with an inauguration ceremony which comprised the unveiling of curtain from the inaugural plate for Supcon DCS, which was performed by Mr. Shi Dingyue, Mr. Mahmood Afzal and Mr. Ijaz Malik.



New Investigations in Brownstock Washing

K-Patents is a partner company in an ongoing research study that seeks ways to improve brownstock washing in the chemical pulping. The aim is to find a new more holistic mill level solution that minimizes washing loss and consumes less bleaching chemicals. The first part of the study has revealed that K-Patents Process Refractometer is the most feasible instrument for determining real-time the washing loss because it measures exactly the concentration of washable liquid substances. Other methods compared were:

1. The amount of sodium
2. COD (Chemical Oxygen Demand) analysis
3. Conductivity
4. Total dissolved solids dry matter content

The amount of sodium describes the yielded sodium, but ignores all other compounds. The COD analysis determines the oxidisable compounds, but not the unoxidisable compounds, and it is an off-line method with long delays. It is also heavily influenced by methanol, which does not have any significance for the washing loss. Conductivity meter has a short response time and it is suitable for very low concentrations. However it does not follow the dry solids at the high concentrations. Total dissolved solids dry matter content is an old off-line method that has long delays.

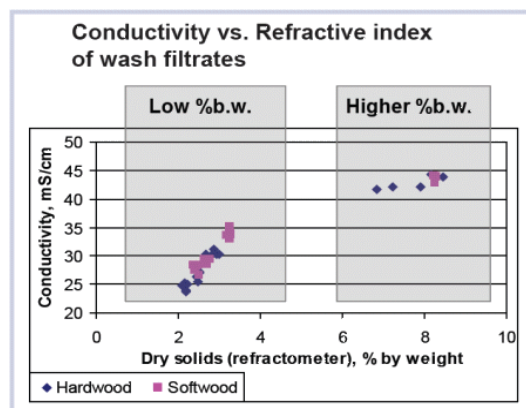
PURPOSE OF PULP WASHING

Kraft pulping is a series of water based chemical processes. The purpose of pulp washing is to remove black liquor from the pulp suspension. Pulp is washed so that the dissolved material of black

liquor can be utilized in energy production and for the recycling of chemicals.

An efficient washing requires the control of the volume of washing fluid that is added to the system. Using large amounts of washing fluid a cleaner pulp is obtained, but an efficient operation of the recovery system requires minimum dilution of the black liquor, in order to reduce the consumption of energy during the evaporation.

On the other hand, in the case of insufficient washing, there is an excessive loss of black liquor, which affects the thermal balance of the line and of the chemical products in the recovery section, as well as leads to a greater consumption of oxidizing agents during bleaching.



IMPROVED WASHING EFFICIENCY

The key finding of the research study was that neither the traditional lab sampling every 12 to 24 hours, nor the conventional on-line methods can reveal all process variations that take place. Refractive index measurements showed remarkable concentration changes in the bleaching pulp line. These variations have considerable implications on the Efficiency Factor, but they have been neglected until now. The process control has relied on faulty assumptions.

Refractive index measurements revealed that 10-20 l/s too much wash water is used for one washer.

This results in additional evaporation costs of 300.000 - 600.000 EUR in a year.



WIRE MESH CABLE TRAY

CADDIE Ltd., Co. is one of the biggest Wire Mesh cable tray manufacturers in China. Caddie was established in 1928 in France, and has become one of the biggest trolley and steel bar product suppliers.

Wire Mesh Cable Tray is mainly used for Electric Construction for laying of cable. It has been widely used in all types of industries mainly, Oil & Gas, Pharmaceuticals, Sewage Disposal, Data Centre, Offices, Airport, Shopping Malls etc.

Caddie has completed a number of famous projects with IBM, BNP, SHELL, NELSON, MICROSOFT, METRO, etc.

Features

- ✓ Low Cost
- ✓ Lighter & Beautiful
- ✓ Better Electromagnetic Compatibility
- ✓ Better Convenience for Mounting
- ✓ Save up to 60% of installation time compared to other types of cable tray
- ✓ Safety & Quality Guaranteed
- ✓ Protects Environment by Reducing Materials Used
- ✓ Good Capability of heat leading, reducing the energy consumption
- ✓ Convenient mounting and maintenance, no prefab unit for mesh cable tray



Wall Mounting



Ground Mounting



Ceiling Mounting

**Winters are here and you can now lower your Gas & Electricity Bill
Use Solar Power**

Features

- 100 litres Capacity
- Heating Capacity of 55°C to 60°C
- Highly efficient heat pipe technology
- Easy Plug-in Installation
- No maintenance cost
- 55mm CFC free PU Foam insulation
- Food Grade Stainless Steel Inner Tank
- Zinc Coated Color Steel Outer Tank



**Initial investment will be recovered in 1 year.
15 years normal life of tubes**

**Save 80%
Gas Bill**

***Our Solar Water Heater will give
you***

**One time investment, Life time
benefits**

The Best Price with Prompt Delivery

Reliable Quality

Readily Available in Stock

Control Systems Engineering

Technology with Commitment

Review

Last year CSE participated in a number of events and exhibitions, not only as a visitor but also has an exhibitor. Besides that we conducted some seminars and training programs.

Pakistan Oil, Gas & Energy Exhibition and Conference (POGEE)

Karachi

May 2009

MICONEX, Shanghai

July 2009

DCS Training for WAPDA Power Plants in UET Lab

Oct 2009

DCS Seminar at MCL for Cement Plants

Nov 2009

CALENDAR OF EVENTS 2010

- | | |
|----------|-----------------------------------|
| 1 | DCS Seminar for Chemical Plants |
| 2 | DCS Seminar for Power Plants |
| 3 | DCS Seminar for Fertilizer Plants |
| 4 | Training in DCS at UET |

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