

AIR FACTS



News on Gas Phase Filtration

Inaugural Issue

Dear Friends,

We welcome you to the first edition of our newsletter, "AIRFACTS", as we surge ahead into the future to touch greater heights. It is an effort to consolidate our relationship with our clientele. After all, we believe that our success lies in team work and in fostering strong relationships.

This issue of the newsletter is the beginning of what we intend to grow into regular communication with our customers.

Bry-Air, is known world wide for its expertise as a solutions company for complete environmental control with specialization in air and gas purification, humidity control, dehumidification, drying, storage, preservation, and plastics auxiliaries supported by state-of-the-art facilities, worldwide operations and customers in almost every industry.

Yet another Innovation by

Sets new benchmark in Gas Phase Filtration through its innovative **Honeycomb Matrix Technology**

Bry-Air, recently, announced a yet another breakthrough in its 'in-situ' synthesized macro porous Honeycomb technology research by extending it to gas phase filtration. In a chemical filter, gases are filtered and cleaned out when they are passed through a chemical filter. The cleaning of gas occurs at molecular level, through a process known as **chemisorption**, when a pollutant gas molecule reacts with chemicals (e.g. KMnO4, KOH, etc) in the chemical filter. The chemicals in the chemical filter get consumed over time as it reacts with gases. Bry-Air's new honeycomb matrix based macro-porous chemical filters provides the largest amount of impregnated chemical (typical 15% for KMnO4) for the chemical reaction for maximum efficiency for a given physical size and geometry of the media matrix and its air carrying capacity for a given pressure drop.



This breakthrough in gas phase filtration is particularly relevant for Data Centers, Server Rooms and DCS rooms which are located near to high density traffic zones, sewerages and drains, landfill sites and process industries emanating such gases.

This proprietary technology not only reduces the size of chemical filtration equipment but also increases efficiency, life and decrease in energy usage. **This patent pending technology has been developed by Bry-Air's R&D group. This is one of the five patents filed by the group in the last 2 years in field of air treatment and moisture measurement technology.**

In our inaugural issue of AIRFACTS, we are pleased to share with you:

- Launch of our new innovative technology Honeycomb Matrix
- Application of Gas Phase Filtration at Petrochemical plant and refinery.
- Corrosion problem solved at 3G Hutchison by **Bry-Air Ecoscrub** Solution and our entire product range.

News from

from other **PAHWA**TM Enterprise



- Delair - Leaders in compressed air drying, successfully organized Dealer's meet at Dalhousie in July, 2011. The meet was attended by Delair team and Delair dealers from all over the country. For more information visit at www.delairindia.com
- DRI confirms its participation in various shows from HVAC industry, to name a few with - Green Construct, FEBRAVA, Greenbuild International Conference and Expo Congress India, Green Building Conference. For more information visit at www.drirotors.com



Gas Phase Filtration in Petrochemical Plant and Refinery

Are your Control and Switchgear rooms healthy ???

The process parameters in a petrochemical facility are extremely critical, because even a small malfunction can cause tremendous loss in revenues. Petrochemical plants generate fair amount of hydrogen sulphide, sulphur dioxide, and nitrogen oxide, etc. Corrosive and Toxic gases like chlorine and ammonia, present in critical areas can corrode critical electronic equipment housed in control rooms / switchgear rooms.

Petrochemical industry can be segregated into two parts :

- Vertically - Petroleum refiners using their hydrocarbons to produce primary and intermediate petrochemical materials.
- Horizontally - Firms that manufacture a family of related petrochemicals of similar types or for similar markets.

This industry was one of the first to go for computerization of its process controlled applications, and one of the first to see the need for corrosion control of those electronic process controls. The processes involved in the petrochemical production area generate sufficient quantities of hydrogen sulphide, sulphur dioxide, and nitrogen oxide, other than many high molecular weight hydrocarbons. Chlorine and ammonia too are present in small concentrations.

Areas needing Gas Phase Filtration :

- ✓ Distillation
- ✓ Catalytic cracking
- ✓ De-sulphurization
- ✓ Coke plant
- ✓ Oil by-products
- ✓ Tank farm
- ✓ Oil loading/handling areas

- ✓ Power generation plant

Controlling Gas Phase Contamination in Control / MCC rooms :

- In case of rooms with very low movement of personnel coming in and out, only pressurization with chemically cleaned air is sufficient. Provide from 3 to 6 air changes per hour, to attain approximately 2.5 to 5 mm WC positive pressure inside the room.
- Rooms with high pedestrian traffic, such as Operator Control rooms would require air purification by re-circulation mode in addition to air pressurization. This is due to the absorption of contaminants on clothes and body surface of plant personnel while attending to duties at the different process locations, which are generally highly contaminated. Such absorbed gases would immediately de-sorb upon entry to a relatively cleaner area.

Our valued customer :

Indian Oil Corporation Ltd., Panipat, referred as one of India's most modern refineries joined hands with Bry-Air and our Airgineers helped them in removing Gas Phase Contamination from the control room. The toxic gases present in the refinery were depreciating the life of electronic equipments present in control room through the process of electronic corrosion, the problem was duly taken care by the Bry-Air Airgineers. Bry-Air EcoScrub Air & Gas Purification System was installed in the refinery and the problem was eliminated with full effect, creating a healthy environment for the employees and stabilizing further



Bry-Air EcoScrub Air & Gas Purification System is the ideal and most cost-effective solution to these problems. Its unique process eliminates odour and cleans the contaminated air of suspended particles and corrosive gases, making the working environment healthy for you and your equipment.



Electronic corrosion prevention at 3G Hutchison

We are all familiar with the name of Hutchison. One who has been in touch with the latest developments in the Indian telecom sector can't keep out the name of Hutchison from his mind. 3G Hutchison is a part of the Hutchison Whampoa Group, a Fortune 500 company and one of the world's leading owners and operators of telecomm-unications. 3G Hutchison provides services on advanced 3G (3rd Generation) technology and provide end-to-end CRM (customer relationship management) solutions.

Problem faced by 3G Hutchison in server rooms:

Computer / Electronic corrosion and odour problem caused by outside pollution composed of corrosive gases in the surrounding environment due to nearby large drain and landfill area.

Main cause for the problem :

The company's office is located in the Malad area of Mumbai known for its numerous landfill sites, waste dumpage areas. The source of the problem were landfill sites near the office which blanketed the whole area with corrosive gases and an obnoxious foul odour. The odours were caused by the presence of hydrogen sulphide gas in methane, which was continuously generated due to the gradual degradation of organic material at the land fill sites nearby. (Methane, on its own has no odour and thus, is not considered as a contaminant). The gaseous contaminants in the form of outside pollution composed of Hydrogen Sulphide (H_2S), Sulphur Dioxide (SO_2), Bromine and Oxides of Nitrogen, Chlorine, etc. were invariably seeping into the server room. These corrosive gases were then reacting with copper and silver in electronic circuit boards, server cards, EVA, cooling equipments, datacom connections resulting in electronic corrosion and degradation of the reliability of electronic equipments. This was causing break down of

computer systems and servers, disrupting work and resulting in loss of business and downtime. To add to the woes, people working in the plush air conditioned 3G Hutchison office were feeling extremely uncomfortable which led to a loss in productivity too.

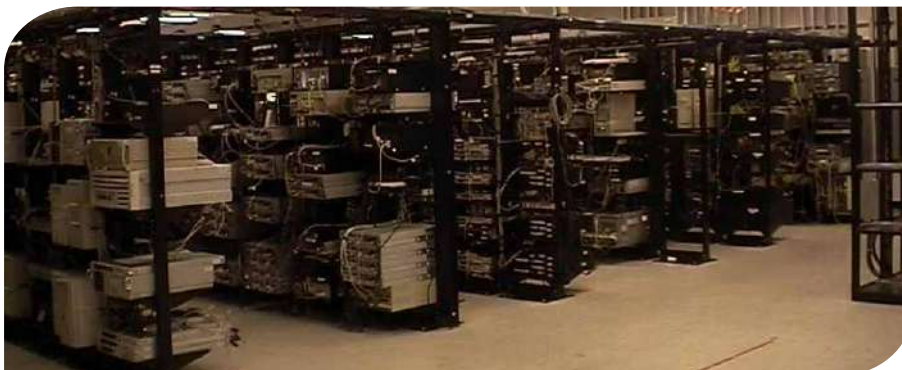
Furthering the problem was the wind direction. If the wind direction is towards the building from the contaminant generating zone, then the after effect was quite contrary to the one when its the other way round. Fluctuation in concentrations in gaseous contaminants : Hydrogen Sulphide emission from the landfill peaks when the temperature and humidity is high and carries on till the land mass is relatively warm. Hence, the rotten eggsmell starts off by mid afternoon and continues till late evenings. During the summer months, the emissions are significantly higher.



3G Hutchison eliminates electronic corrosion with

Bry-Air **EcoSCRUB** solution:

Bry-Air Airgineers helped 3G Hutchison solve the problem of frequent server/ computer failures and created comfortable working environment for staff by installing EcoScrub. Bry-Air Ecoscrub Air & Gas Purification System was installed outside the server room to maintain a positive pressure of air inside the server room. Computers no longer break down due to corrosion and staff breathes fresh air. The air quality is of G1 class (least corrosion rate) inside the facility.





Solution



Deep Bed System

Thin Bed System

Global Solution Providers for Complete Environmental Control

WE ARE NEVER TOO FAR FROM YOU!



Our Product Range

| | | |
|--|---|--|
| <p>Bry-Air DEHUMIDIFICATION & DRYING</p> <p>Dry Max Ecodry Enviroliner Compact Dehumidifier</p> | <p>Bry-Air ENERGY RECOVERY</p> <p>High Temperature Wheel</p> | <p>Bry-Air GREEN PRODUCTS</p> <p>Arctic Cooler ERV Energy Recovery Wheel Treated Fresh Air Unit</p> |
| <p>Bry-Air DRYING, CONVEYING & BLENDING</p> <p>Mould Temperature Controller Honey Comb Dryer Gravimetric Blender Volumetric Doser</p> | <p>Bry-Air ENVIRONMENTAL CHAMBERS</p> <p>Walkin Chambers TSC</p> | <p>delair COMPRESSED AIR DRYERS</p> <p>Refrigeration Dryer Customized Air Dryer Desiccant Dryers</p> |



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