



DYYNARO TECHNOLOGIES
"CONSERVE TO PRESERVE"

Non-Chemical Automatic Water Treatment System



Dyynaro Technologies provide customized robust Automatic Water Treatment Solutions “A Complete Analogy of Energy, Water and Ecology Efficiency” for facilities owners to address and get benefits of operating performance with lower operation cost, reduce carbon footprint, comply with ecological concerns, and enhance facilities environmental performance.

Dyynaro's Non-Chemical Automatic Water Treatment System (AWTS) provides customized solutions for Cooling/Condenser Water for Cooling Tower units like HVAC System in Pharma, Dairy, Hotels, etc., and industries like Power Plant, Cement, Paper, Sugar, O & G, and Petrochemical sector, etc.

Non-Chemical Automatic Water Treatment System

Heat Exchanger Cleaning

Intelligent Chiller Energy Monitoring System

Innovative Cooling Tower Technologies

Maintenance Challenges to keep Cooling/Condenser Water Circuit working permanently at maximum efficiency

Water-based cooling systems inevitably suffer from Sludge, which is caused by Corrosion and Bacterial activity. It blackens the water and causes sediments such as Scale, Silt, Algae and others to develop on all parts of the system. The sediments stick to all sections of the Cooling System, clogging it and leading to a drastic reduction in energy efficiency that leads to increased energy use and higher operating costs. This phenomenon is known in industry circles as Fouling.

Fouling slows down the Cooling process and results in increased operating cost due to:

- Reduced Flow and Increased Pressure.
- Lose if Throughput.
- More Frequent Equipment Replacement.
- Need for Cleaning and Disposal of Toxic Waste.
- Ongoing usage of Costly Chemical Additives.
- Increased Safety Hazards.

The Offline Solutions

The offline solutions require shutting down the process for the cleaning. It uses chemicals or mechanical means to do the job. Using Water Treatment Chemicals, Acid, Corrosion Inhibitors and Biocides are expensive; are associated with high handling and disposal costs and that are harmful to the system components as well as the environment. These drawbacks make the offline methods of cleaning expensive, cumbersome and inefficient.

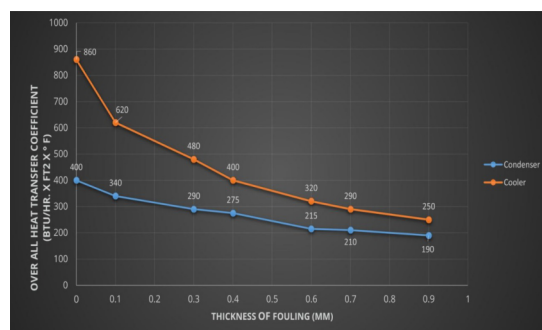
The Online Solution – Dyynaro's Non-Chemical Automatic Water Treatment System (AWTS)

Is an efficient, low maintenance and reliable way to fight against Scale, Algae, Bacteria and Corrosion using Electrolysis and keeping Cooling Tower and its Water Circuit continuously clean and the key to keeping it's operating at peak efficiency. It solves water treatment problems, in both opened and closed-loop cooling systems.

Fouling – Its Harmful Effects



(Cross Section of a Damaged Pipe in a Closed Loop System; Damaged by Bacterial Activity)



(The Graph above shows the effect of pipe sediments thickness on the unit's Heat Transfer Coefficient)



- Electrochemical Process
- Creates High Ph In Tank

- Free Chlorine Generation
- Scale/Bio/Corrosion Control

- Redundant Sand Filtration
- Automatic Backwash

- Low Cost of Operation
- Simple and Quick Installation

Dynaro's Non-Chemical Automatic Water Treatment System (AWTS)

"A complete analogy of Energy, Water and Ecology Efficiency"



ENERGY :

- Up to 30% energy savings in HVAC
- Up to 4% on power stations
- Significant energy savings



WATER :

- More than 50% savings in bleed water of CTs
- 100% savings of refuse water when replacing RO water treatment for CTs

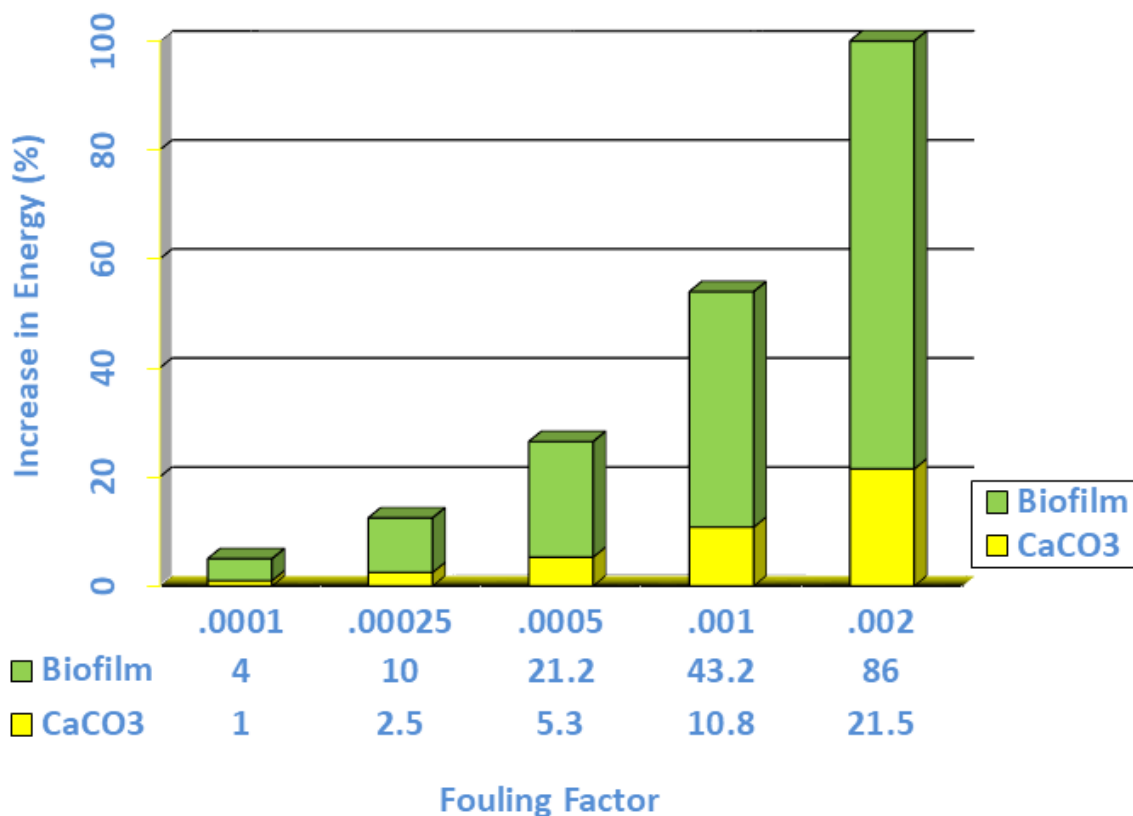


ECOLOGY :

- 100% chemical free
- 100% re-use of chemical-free water
- Green Technology

THE BENEFITS :

- Automatic and reliable turnkey system.
- Continuously cleans the basin water by recirculation.
- Avoids the need of chemical treatment and dosing equipment.
- Saves up to 60 - 80% of the blow-down water.
- 100% of blow-down water can be re-used.
- High performance sand filter cleans water and capture solids.
- Automatic self-cleaning to remove accumulated dirt and scale.
- Controls and kills bacteria, prevents growth of algae.
- Operation at up to 8500 $\mu\text{s}/\text{cm}$ without forming scale leads the COC close to 10 to 12 Cycles.
- Creates an alkaline pH environment that prevents corrosion.
- Configurable according to the existing water quality.
- Requires no additives or consumables.
- Low operating and maintenance costs.
- Robust long life.
- Absolutely environmentally safe.



Dyynaro Technologies Services "Your Trusted Service Partner"

Dyynaro's commitment doesn't over after selling the products, but we provide excellent after sales service support to the peace of mind to our valuable clients. Our technical team is competent to detect any problem and rectify the same promptly.

Dyynaro service also includes to advice our client, how to enhance your cooling and heating system to increase their substantial performance. Dyynaro's reliability services reduce the risk of breakdowns, improve operation, and extend equipment life.

Dyynaro service proposes cost effective ways to optimize the energy efficiency of your existing system and generate immediate savings.

Dyynaro service experts can advise the client the various cost effective ways to optimize the performance of the existing system and on how to save energy and eliminating the use of chemicals for water treatment for comfort and safe occupational health environment.



Reliability



Energy



Environment

Check out our other environment-friendly technologies

- OLCTCS – On-Line Condenser Tube Cleaning System
- COLTCS – Condense On Load Tube Cleaning System
- iCEMS – intelligent Chiller Energy Monitoring System
- Innovative Cooling Tower Technologies



Rely on Dyynaro Technologies



We are always there to help and support for any of our services and product. We are just a call away and technical support will assists you shortly. We are also expanding our footprints in India, Middle East, Europe, and other countries.

Our Service Team has:

- Knowledge of the history of your equipment and controls
- In-depth expertise in servicing your equipment and controls
- Access to the latest technology and support

Dyynaro Technologies Service Products

- Installation Support and Assembly Supervision
- Startup Services and Guaranteed Performance
- Performance Check, Inspection and Maintenance
- Upgrades, Reconditioning / Repair
- Energy Audits
- Training Services
- Spare Parts

Call us, let's talk.

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Dyynaro Technologies optimizes the performance of heat transfer equipment around the world. A business of Dyynaro Technologies, the leader in creating and sustaining safe, comfortable, and energy efficient environments, Dyynaro Technologies offers a broad portfolio of advanced controls and cooling systems, comprehensive services, and parts. For more information, visit www.dyynaro.com.

Dyynaro has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.



Produced on recyclable paper, using environmentally friendly print practices that reduce waste.

