



Reshaping the world's largest water ecosystem through technology – every process and every product.

Recognised by DPIIT, pre incubated at NSRCEL, IIM B.

Currently undergoing Incubation at center of incubation and business acceleration (CIBA).

Vision: To provide clean and healthy drinking water to everyone, literally everyone.





## WHAT'S INSIDE

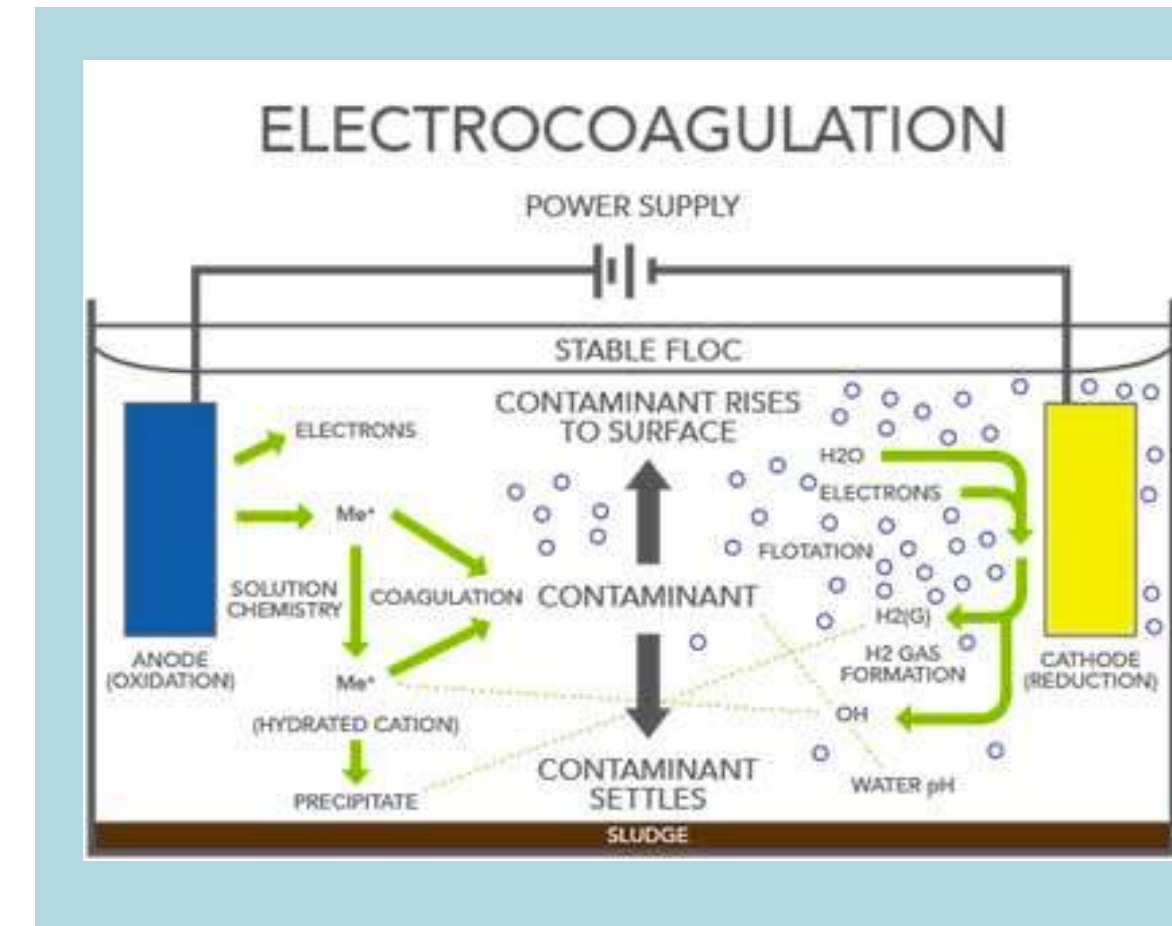
- A brief comparison between Zoss advanced control electro systems (ACES) and traditional technologies.

# WHAT IS ZOSS ACES ?

Zoss advanced control electro system (ACES), work on the principle of Electrocoagulation.

Electrocoagulation Is a technique involving the passage of electricity through water or effluent to be treated. The electric current destabilizes dissolved and colloidal particles and alters the charge on suspended matter permitting electro coagulation, agglomeration, electro flotation and their removal.

The effluent is passed through the EC chamber which works on the principle of electro coagulation and precipitation to coagulate suspended impurities. Electro-coagulation will cause dis-integration of ions release of dissolved gases and coagulation of fine colloidal matter and dissolved organic matter due to high current passing through the cell. This is followed by ionization, destabilization, oxidoreduction, electrolysis, free radical formation, electromagnetic field formation, and emulsion breaking and separation.



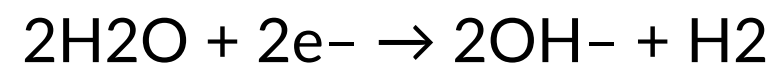
# WHAT IS ZOSS ACES ?

At the anode, the generation of oxygen resulting from the oxidation of the water causes the formation of H<sup>+</sup> ions which, due to the charge, are attracted to the cathode. At the cathode, the reduction of water to form hydrogen causes the formation of hydroxyl (OH<sup>-</sup>) ions which, unlike the H<sup>+</sup> ions, are attracted to the anode.

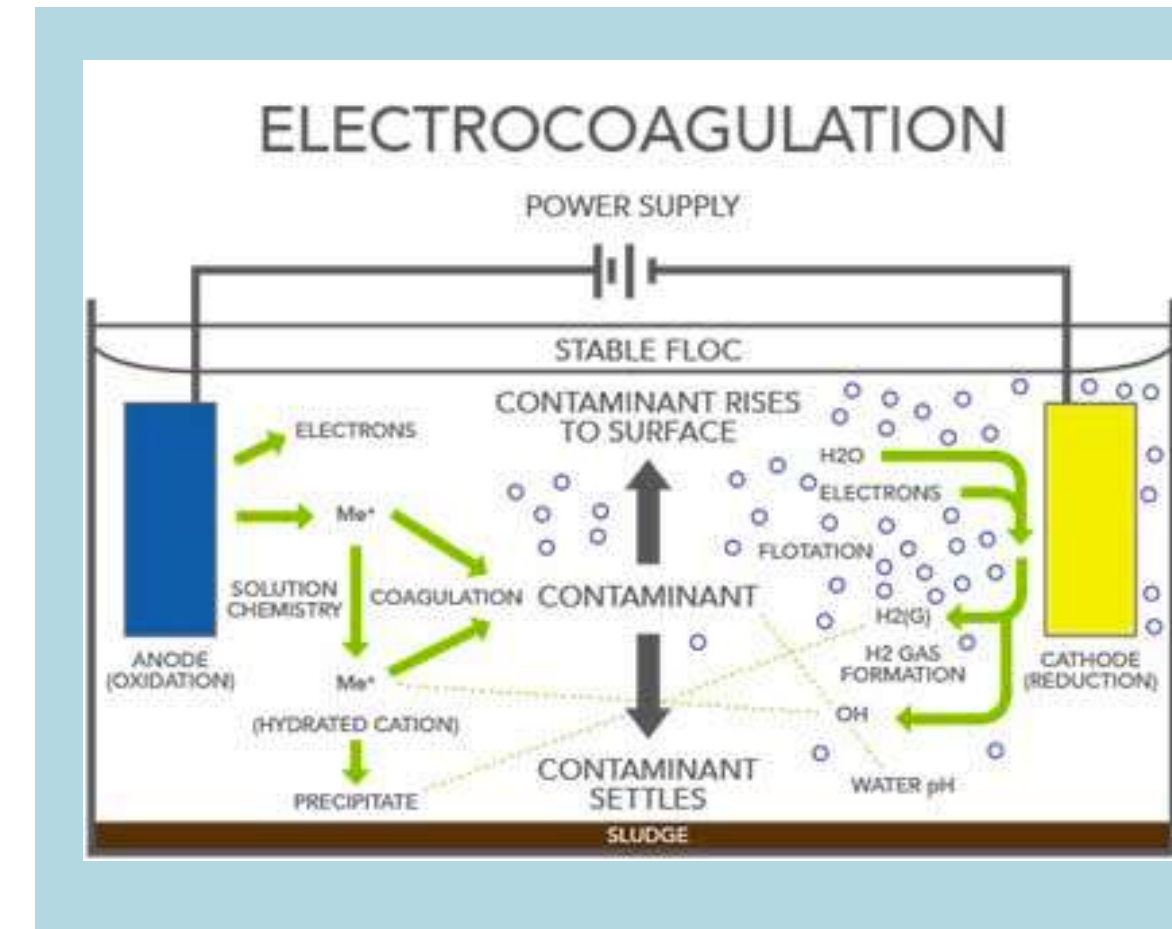
Anode:



Cathode:

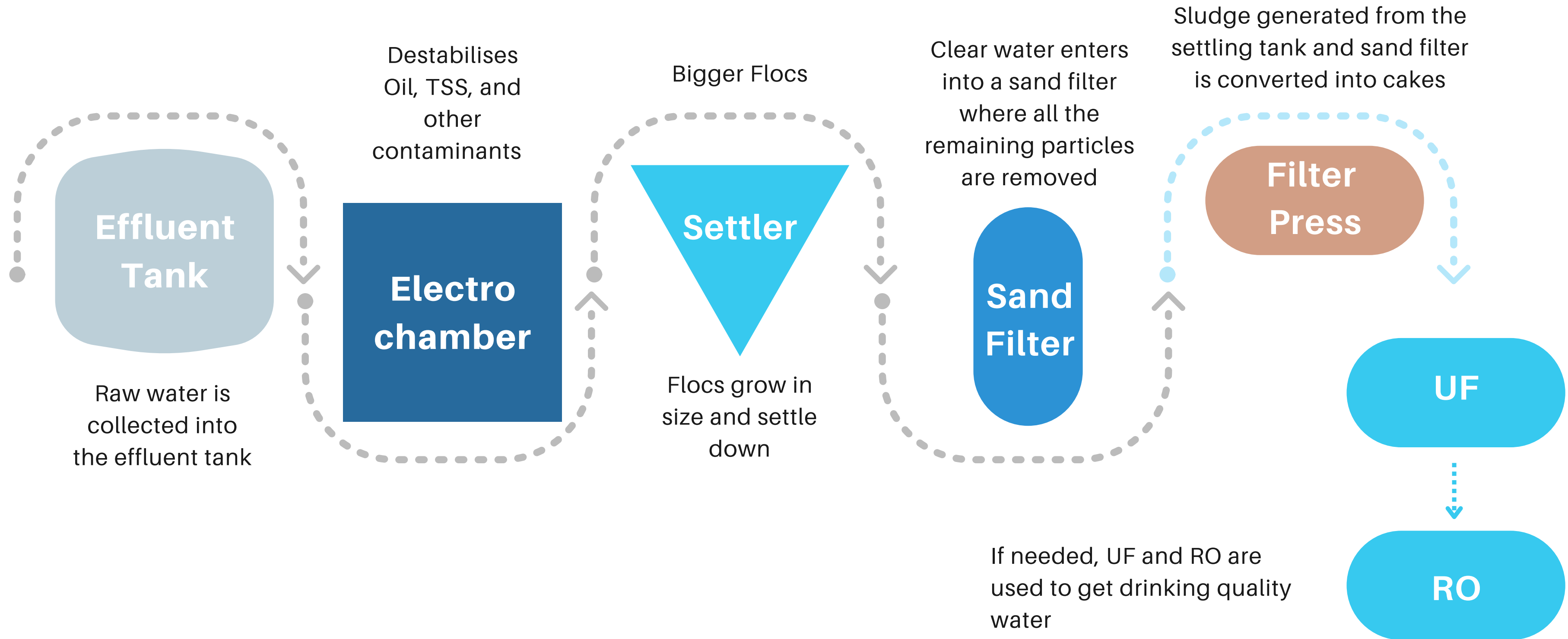


The treated effluent will be collected in filter feed tank. The clear supernatant is sent to the tertiary polishing section comprising of a dual media filter. The treated water shall be used for irrigation/horticulture or further purification as per the need.





# PROCESS - EVERY ZOSS ACES UNIT IS CUSTOM BUILT (2KLD ONWARDS)



# ZOSS ACES (STP & ETP)

Zoss ACES wastewater treatment method uses new ideas to meet a wide range of water treatment needs. Zoss ACES is a packaged effluent treatment system that doesn't require any civil works or installation time, so it can be put in place and used right away, like a water filter system. Zoss ACES works on start and stop system.

When there is effluent, treatment can begin, and when there isn't any, it can be turned off. Zoss ACES can be custom built from 2KLD onwards. based on how much throughput is needed, without the need for a technical team.

## SUSTAINABLE & NATURE FRIENDLY

- EC (Electrocoagulation based).
- Non biological.
- Minimal civil work required.
- Lesser natural additives.
- Lesser greenhouse gases.
- Fast start and stop as needed.
- Smaller footprint.

## FINANCIALLY & OPERATIONALLY SMARTER

- Lower costs per KLD.
- Can be retrofitted.
- No technical operator required.
- Custom built (2KLD onwards).



ACTUAL 5KLD PLANT



# COMPREHENSIVE PROCESS COMPARISON (1)

## Traditional

## ZOSS ACES

|                                |  |  |
|--------------------------------|--|--|
| <b>Type of Process</b>         | BOD reduction takes place aerobically by attached growth on plastic media within the reactor. Fixed film process. Flow through process. Sludge recycling not required.   | BOD reduction takes places due to electro-coagulation will cause dis-integration of ions leading to free chlorine formation, release of dissolved gases and coagulation of fine colloidal matter and dissolved organic matter due to high current passing through the cell.  |
| <b>Principle of operation</b>  | Organic matter is brought in contact with bacteria attached to plastic media, which is in suspension. Excess sludge is sloughed off automatically, and separated in the clarifier. No sludge recycle is required.            | Electro-coagulation will cause dis-integration of ions leading to free chlorine formation, release of dissolved gases and coagulation of fine colloidal matter and dissolved organic matter due to high current passing through the cell. The sacrificial anode made of Mild Steel will aid in coagulation of the fines to form heavy suspended sludge which will be suitably settled in the succeeding systems. |
| <b>Process variables.</b>      | No sludge volume index / recycle need be checked. System is self sustaining. Excess biomass automatically gets wasted off. Hydraulic retention time required is minimum one hour to three hours depending on the waste load. | There is large capacity of taking excess parameters as the current can be varied according to the load factor and so there is no need of recycling of sludge, or higher retention time etc.  |
| <b>Sensitivity of process</b>  | Sensitivity of the process is low, owing to very high attached bacterial growth.   | Sensitivity of the process is very low as the process is not related to bacterial load, highly suitable for shock loading.   |
| <b>Plant area requirements</b> | Being a flow through process with a very large specific area of the plastic media, aeration tank volume and plan area is substantially lower than the other processes. Secondary clarifier is necessary.                     | This process has the lowest area requirement compared to any technology as there is no retention time for the electro coagulation.   |
| <b>Power requirement</b>       | Power requirement lower than ASP, but higher than UASB process.  | Power cost and operation cost are lesser to that of MBBR technology.   |



# PROCESS COMPARISON (2)

## Traditional

## ZOSS ACES

|                                |  |  |
|--------------------------------|--|--|
| <b>Type of Process</b>         | BOD reduction takes place aerobically by attached growth on plastic media within the reactor. Fixed film process. Flow through process. Sludge recycling not required.   | BOD reduction takes place due to electro-coagulation will cause dis-integration of ions leading to free chlorine formation, release of dissolved gases and coagulation of fine colloidal matter and dissolved organic matter due to high current passing through the cell.   |
| <b>Principle of operation</b>  | Organic matter is brought in contact with bacteria attached to plastic media, which is in suspension. Excess sludge is sloughed off automatically, and separated in the clarifier. No sludge recycle is required.            | Electro-coagulation will cause dis-integration of ions leading to free chlorine formation, release of dissolved gases and coagulation of fine colloidal matter and dissolved organic matter due to high current passing through the cell. The sacrificial anode made of Mild Steel will aid in coagulation of the fines to form heavy suspended sludge which will be suitably settled in the succeeding systems. |
| <b>Process variables.</b>      | No sludge volume index / recycle need be checked. System is self sustaining. Excess biomass automatically gets wasted off. Hydraulic retention time required is minimum one hour to three hours depending on the waste load. | There is large capacity of taking excess parameters as the current can be varied according to the load factor and so there is no need of recycling of sludge, or higher retention time etc.  |
| <b>Sensitivity of process</b>  | Sensitivity of the process is low, owing to very high attached bacterial growth.   | Sensitivity of the process is very low as the process is not related to bacterial load, highly suitable for shock loading.   |
| <b>Plant area requirements</b> | Being a flow through process with a very large specific area of the plastic media, aeration tank volume and plan area is substantially lower than the other processes. Secondary clarifier is necessary.                     | This process has the lowest area requirement compared to any technology as there is no retention time for the electro coagulation.   |
| <b>Power requirement</b>       | Power requirement lower than ASP, but higher than UASB process.  | Power cost and operation cost are lesser to that of MBBR technology.   |

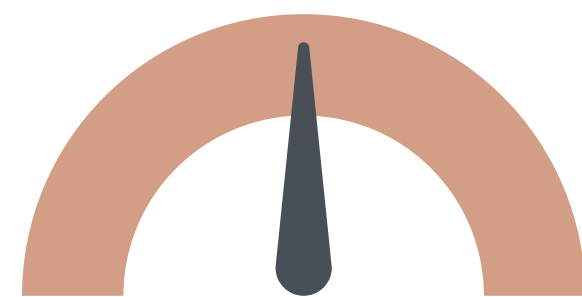


# BENEFITS OVER MBBR

Space requirements



Reaction time (Hours)



**MBBR (12 Hour)**



**ZOSS ACES (1 Hour)**



ACTUAL 5KLD PLANT

# CIVIL WORK COSTING BENEFITS ( 1000 KLD\* )

|  | MBBR     | ZOSS ACES    |
|--|----------|--------------|
| Process Tanks                              | RCC      | RCC/FRP      |
| Aeration tanks                             | REQUIRED | NOT REQUIRED |
| Foundation for pumps, biological treatment | REQUIRED | NOT REQUIRED |
| Foundation for air blowers                 | REQUIRED | NOT REQUIRED |



**OVERALL SAVINGS:  
APPX. 40 L\***



# CURRENT WORK ORDERS IN HAND

- 1) Empanelled with a major realty group for their 3 residential and 1 commercial project (Mumbai).
- 2) Empanelled with SG Chemicals for their upcoming factories in Ambernath. (Mumbai).
- 3) Currently, in the process of commissioning an 1000 KLD WTP in Jamnagar (Gujarat).

# FEW OF OUR PRESTIGIOUS CLIENTS

**Brookfield**



**Huhtamaki**



# ACCREDITATIONS & ASSOCIATIONS

01

**ISO 9001:** Our ISO 9001 certification means that our quality management system has been audited and reviewed by an official registrar to ensure that our systems are focused on meeting customer's expectations through certified procedures and a continual improvement process. We never waiver in our commitment to provide products that contribute to improved health and to the global environment, coupled with best-in-class quality and customer service.

02

**ISO 13485 and CE :** Signifies that our quality management system demonstrates its ability to provide medical devices and related services that consistently meet consumer and regulatory requirements applicable to medical devices and related services.



Zoss water products private limited is a DPIIT (Department for Promotion of Industry and Internal Trade) recognised 'cleantech' startup.







**Puneet Swaroop**  
Founder & CEO



**Vijay Bhatia**  
Projects Head



**Jaychandran**  
Sundermoorthy



**Pratish Nair**  
Cofounder & CSO



**Ajay Rihwani**  
CTO



**Dr. Santosh Pandey**



**Dr. Paula Goel**

# TEAM & BOARD OF ADVISORS

# MEET US



022 35099938



[info@zosswater.com](mailto:info@zosswater.com)



Zoss Water, Gala No. 3-6, Ground Floor, Veeram World, Bhiwandi, Thane, Maharashtra- 421302



Zoss Water, CIBA, 6th Floor, Agnel Technical Complex, Sector 9A, Vashi, Navi Mumbai, MH 400703



[www.zosswater.com](http://www.zosswater.com)



[www.facebook.com/ZossWater/](https://www.facebook.com/ZossWater/)



[www.twitter.com/ZossWater/](https://www.twitter.com/ZossWater/)

