

## **On-line Charge Density Analyzer for sludge separation**

The separation of water and solids is often applied at sewage treatment plants for reducing costs or for sludge disposal, precleaning of industrial waste water through settling, flotation or filtration.

Chemical separation involves the use of coagulants and flocculants, polymeric agents that precipitate suspended solids. Due to the dynamic character of many water treatment works, it is difficult to measure and control the actual optimal dosing of the chemicals. In reality, “optimal” dosing is based on trial and error and is reduced to a fixed dose aimed at maximum load, at the expense of excess chemicals. On-line monitoring is an excellent tool to cope with the dynamic character of water treatment works and provides operators real-time data to take corrective actions when needed.

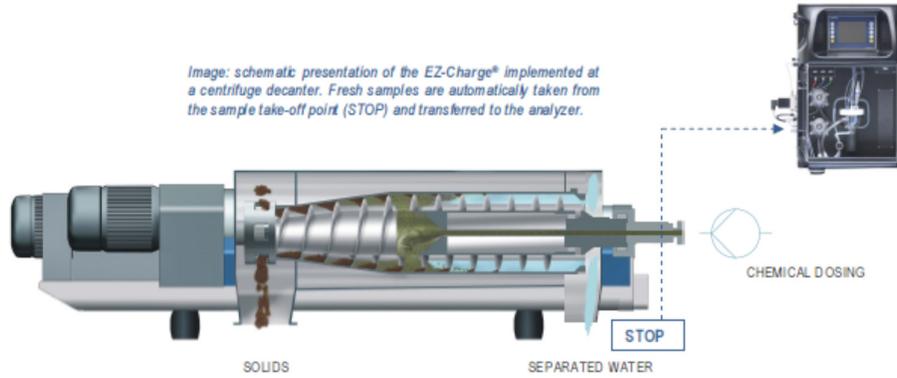
The EZ-Charge® On-line Charge Density Analyzer is an on-line analyzer built on an advanced titrator mainframe and specifically designed for the purpose of dosing control in chemical separation processes. The result output of the on-line analyzer can be compared against a specific setpoint, if necessary with alarm thresholds, so that the right amount of chemicals can be dosed at the right moment. The EZ-Charge® is a unique way to effectively control the chemical dosing in waste water treatment.

The operational benefits of the EZ-Charge® include:

- **Continuous, automatic monitoring of the separation process** Controlling the process setpoint, even under alternating loads and dynamics of the process
- **Less giveaways: consumption of chemicals is reduced compared with fixed (maximum) dosing programs**
- **Easy implementation within a dynamic control strategy**
- **Outperforms zeta potential & streaming current technology**



*Image: schematic presentation of the EZ-Charge® implemented at a centrifuge decanter. Fresh samples are automatically taken from the sample take-off point (STOP) and transferred to the analyzer.*



- Sedimentation
- Flotation
- Filtration



- All solids in aqueous systems are charged
- Removing suspended solids in three steps:

1. Coagulation (particles < 100 µm, by adding Al, Iron)
2. Flocculation (particles > 100 µm, by adding Polymer)
3. Aggregation (further growth and entrapment)

