

AMI CACE in Action

“SWAN Successfully Completes a Six-Month Trial Run with Continuous Performance Evaluation of its New AMI CACE Analyzer in Dubai”

Expertise is readily available with SWAN's new Conductivity After Cation Exchange (CACE) analyzer operating successfully at the Aluminium smelter complex in Jebel Ali, Dubai. The results of a continuous six-month trial period using a newly patented conductivity measuring technique based on electro-deionization (EDI) have proven that, under variable conditions, the **AMI CACE** consistently outperformed conventional cation conductivity techniques.

About the smelter complex at Jebel Ali

The company produces high quality primary aluminium products. With smelters in both Dubai and Abu Dhabi, it is the largest industrial company in the UAE outside oil and gas. The smelter in Dubai is powered by a combined cycle power plant with a power generation capacity of 2,350 MW. To reach this capacity, the power plant utilizes 23 gas turbines and seven steam turbine generators. The highly efficient energy technology of the gas turbines with a heat recovery steam generator produces steam for the turbines and for the evaporator units of the desalination plant. The combined cycle improves the efficiency of the plant considerably, thus allowing the plant to be more profitable.



Stack of raw aluminium ready for dispatch

Trial run of **AMI CACE**

With the continuous efforts of our customer to increase efficiency and safety, reduce operational costs and protect the environment, SWAN Analytische Instrumente AG, Switzerland & SWAN Analytical Middle East FZE, Dubai had the great privilege to install the first **AMI CACE** analyzer at the feedwater sample line in the Steam & Water Analysis System (SWAS) of one Steam Turbine. SWAN installed the new EDI based conductivity analyzer **AMI CACE** in parallel to conventional conductivity measuring instruments to test its longterm performance under variable conditions.

The **AMI CACE** is an economical, low-maintenance analyzer that continuously monitors conductivity, before and after cation exchange as well as by determining the pH value of the sample and alkalizing reagent based on differential conductivity.

AMI CACE



It uses electro-deionization (EDI), which is an electrochemical procedure commonly used in water treatment plants. It combines conventional ion exchange with electro-dialysis for constant resin regeneration.

By adopting this technique SWAN was able to build a conductivity analyzer that does not need resin column exchanging.

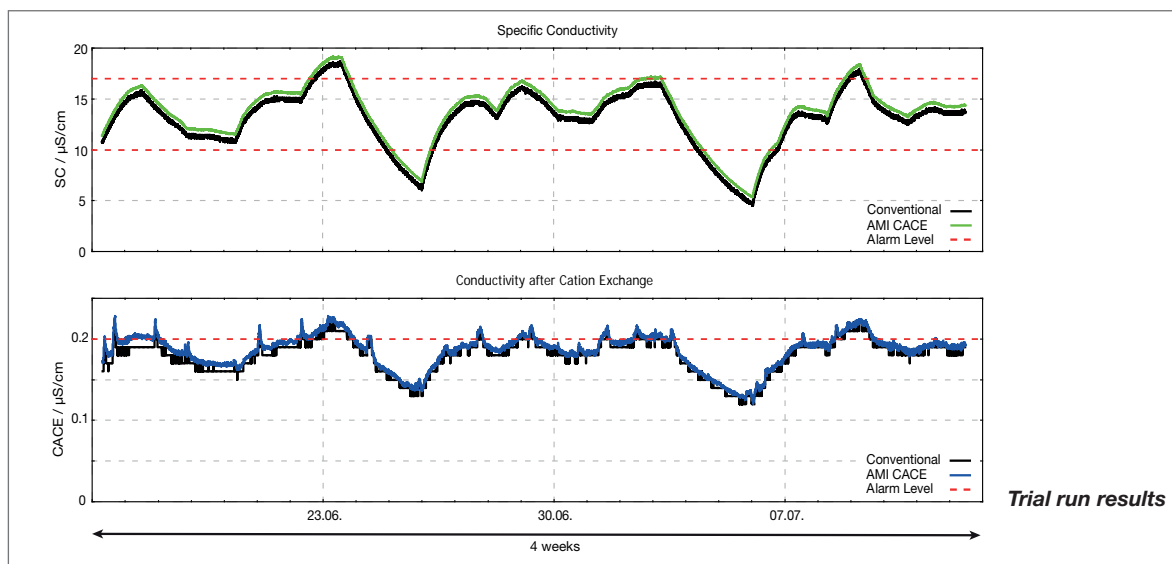
This eliminates the need for resin regeneration handling, resin wastage disposal and OEM consumables, making the **AMI CACE** analyzer a secure investment for you.

Conductivity After Cation Exchange (CACE)

201711

The Results

Within a six-month trial run, SWAN was able to demonstrate highly reliable measurements during independent operation of the EDI based online conductivity monitoring technique. The results have proven that the measurements consistently show either identical or even lower values, since potential bias from resin regeneration and further impacting effects are reduced to a minimum (see graph below).



The **AMI CACE** with its built-in continuous resin regeneration module significantly reduces the operational expenditure of the cation conductivity analyzers, providing the following advantages:

Advantages of AMI CACE	Your Benefits
Maximum instrument availability of your process monitoring by avoiding exchange of consumed resin: <ul style="list-style-type: none"> No more waste disposal No more rinse downtime 	Significantly reduce operational costs and minimize maintenance downtime
Identical or better measurement reliability compared to conventional cation conductivity techniques	Guarantees the veracity of measured data to increase your process efficiency
Continuous and precise trend analysis	Unlimited access to real-time data gives you peace of mind
Included sample flow and sample temperature monitoring element	Increasing reliability of measured data
Innovative and compact design	Straight forward instrument set up for rapid plant integration



Trial setup

Made in Switzerland 

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