



- Fluid characterization
- Static / dynamic separation tests
- Separation performance prediction
- Process optimization

Laboratory services

Sulzer supports oil processing industries to achieve their optimal separation efficiency in VIEC™ (Vessel Internal Electrostatic Coalescer) applications by offering state-of-the-art laboratory facilities that help to pinpoint and address separation problems as well as optimizing separation processes. Important factors that are considered include scale differences between laboratory and field as well as the role of electrostatic coalescence. In addition, Sulzer can use its mobile equipment to test predictions of offshore separation performance.

In order to provide consistent and representative assessments and predictions of separation performance with VIEC technology, Sulzer offers certified test methods for the analysis of crude oil and has conducted more than 80 tests.

More precisely, to predict separation performance with high accuracy, Sulzer combines fluid characterization and flow analytics with small scale static separation tests as well as dynamic separation tests on a larger scale.

Predicting separation performance

Sulzer has developed a multi-tier approach to predict separation performance in VIEC-based systems. This comprises a number of tests

designed to assess all the relevant aspects, from microscopic to macroscopic scales. This approach is divided into three stages:

Stage 1. Characterization of crude oil and water-in-oil emulsions formed by the crude: Relevant physical and chemical parameters are determined.

Stage 2. Separation tests using a small-scale static test setup: A qualitative understanding of the separability of the crude oil is obtained.

Stage 3. Separation tests using a larger scale dynamic test setup: Input from previous stages used to design tests under more representative flow conditions.

By using special scaling laws, developed and verified in-house, Sulzer can scale

up the results obtained to generate representative, real-world flow predictions and separation performances.

Process optimization

The results obtained via Sulzer's laboratory tests can be used to optimize and/or debottleneck customers' separation processes. In particular, Sulzer can determine the impact of VIEC and specific designs on the separation efficiency, e.g. quantifying potential savings, and providing customized designs and recommendations.

Potential saving and benefits are identified and custom-fitted process specific recommendations are given.