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Press Release

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Nexis SCD-2030

World's most innovative solution for sulfur detection

Nexis SCD-2030 Sulfur Chemiluminescence Detection system launched /
High sensitivity meets highest selectivity /
Dramatically improved operability and maintainability

Shimadzu, one of the world leaders in analytical instrumentation, has released the Nexis SCD-2030 sulfur chemiluminescence detection system. It consists of a Nexis GC-2030 high-performance GC and the newly developed SCD-2030 sulfur chemiluminescence detector. With this product, Shimadzu serves a growing request for easy operation and maintenance as well as high stability even during long term operation for high selective and sensitive sulfur detection systems.

The sulfur in fossil fuels not only causes air pollution, but also interferes with catalysts during chemical reactions. Petrochemical companies are making efforts to reduce the sulfur content of fuels and have developed low sulfur gasolines containing only several tens of ppb or less. To accurately measure trace amounts of sulfur in fuel, a high sensitivity SCD detector is essential. Against this background, global sales of SCD detectors are expected to increase steadily in the future, and demand is growing for instruments that excel in highly sensitive detection.

The Nexis GC-2030, a next generation gas chromatograph, offers world-highest level of performance. It is based on the concept of superior usability and expandability for a wide variety of analytical applications, e.g. research and development and quality control in areas such as food, beverages, fragrances, gases and fuel cells. For these purposes, the Nexis GC-2030 can be equipped with any of a family of high-sensitivity detectors such as the newly developed sulfur chemiluminescence detector to create the Nexis SCD-2030 specialized system. It will deliver a new solution for low concentration sulfur component analysis to a variety of users.

Special features of the Nexis SCD-2030 are:

1. **Highest levels of sensitivity**

   The strength of the sulfur chemiluminescence detection technique lies in high sensitivity combined with highest selectivity to sulfur. Quantification of lowest sulfur traces is performed without the need for full separation from other constituents in fuels.

   By adopting a horizontal positioning system for the redox cell, the reaction time for the important conversion of sulfur compounds to sulfur oxide is extended while the total flow path from cell to detector is reduced to one-third compared with previous SCD detectors. Unstable components can be introduced into the reactor chamber at high speed, minimizing sensitivity loss and enabling analysis to be performed with the highest level of sensitivity.

2. **Dramatically improved operability and maintainability**

   Together with chemiluminescence detection, the redox cell is the crucial part of an SCD detector, influencing selectivity and thus the final sensitivity. Depending on the sample, it requires frequent maintenance due to contamination of the pyro tube. In models with built-in vertical redox cells, replacing consumable parts (the inner pyro tubes) is problematic because it is difficult to reach them at the top of the instrument. With the Nexis SCD-2030 horizontally positioned sulfur chemiluminescence detection system, replacement of the inner pyro tube takes only 5 minutes. An SCD detector is usually more difficult to control than a general GC detector, but the Nexis SCD-2030 adjusts gas and temperature automatically, so measurement preparations are completed with just a single touch. Combined with the LabSolutions analysis data processing system, the entire workflow from system check to starting/ending of analysis and stopping the instrument can be automated, supporting a more efficient work flow and minimizing the influence of human error.

3. **High stability**

   Shimadzu has introduced the first horizontal positioning system in the industry for the redox cell, a core component of sulfur chemiluminescence detectors. This design enables a stable redox reaction by ensuring sufficient reaction zone and reaction time. Compared with other SCD detectors, fluctuation of sensitivity is less (24-hour sensitivity fluctuation is about 1.6 times better) and the effect of differences in analytical conditions such as column flowrate is minimized.

Web summary

Shimadzu has released the new Nexis SCD-2030 sulfur chemiluminescence detection system consisting of a Nexis GC-2030 high-performance GC and the newly developed SCD-2030 sulfur chemiluminescence detector. It provides highest sensitivity for sulfur detection, e.g. in petrochemical applications. This market is expected to grow steadily in the coming years. The Nexis SCD-2030 offers dramatically improved operability and maintainability. Combined with the LabSolutions analysis data processing system, the entire workflow can be automated to support efficiency while minimizing the influence of human error.

Figure 1: The Nexis SCD-2030 sulfur chemiluminescence detection system is a world-most sensitive solution for petrochemical applications.

Web link: www.shimadzu.eu/nexis-scd-2030

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