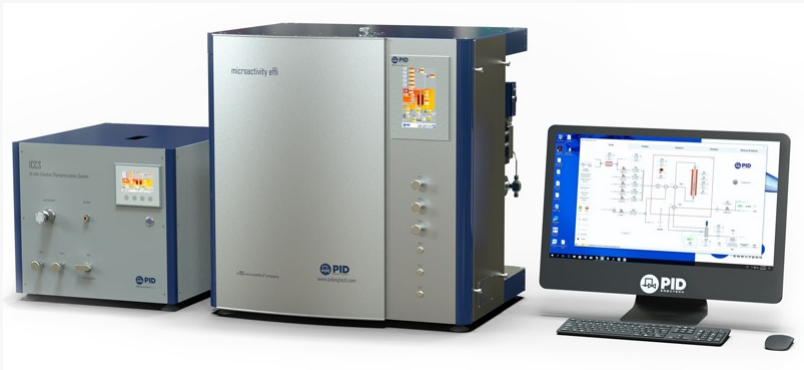
Researchers welcome new solutions to enhance the integrity of catalyst characterization studies

In-situ Catalyst Characterization System transforms capabilities of existing test apparatus



Micromeritics in situ Catalyst Characterization System (ICCS) connected to the Microactivity EFFI

NORCROSS, GEORGIA, UNITED STATES, January 8, 2020 /EINPresswire.com/ -- Micromeritics Instrument Corp., a leader in material characterization technology, is seeing enthusiastic interest from researchers keen to use the new Micromeritics in-situ Catalyst Characterization System (ICCS) to enhance the integrity of heterogeneous catalyst studies by adding new capabilities to existing reaction screening systems. Standard practice is to remove a catalyst from the reactor and transfer it to a separate system for characterization a following a reaction, but this risks environmental contamination and compromising data quality. With the ICCS, a catalyst can be characterized at any point after a reaction, in the reactor, to gain representative data. The broad compatibility of the ICCS makes this extremely valuable insight into reaction, deactivation and regeneration widely accessible.

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> *Dr. Simon Yunes, Senior Scientist, Micromeritics.*

"Researchers use a wide range of different apparatus to assess catalyst performance," said Dr Simon Yunes, Senior Scientist, Micromeritics. "From in-house glassware units to sophisticated, automated systems such as our Micromeritics Microactivity Effi reactor. Following a reaction, it is desirable to re-quantify defining characteristics such as the number of active catalysts sites to observe any change. This typically means removing the catalyst from the reactor and transferring it to a chemisorption system. There is widespread recognition that this process undermines the integrity of the resulting characterization data, so we're delighted to be able to offer a solution which so many people can use."

The ICCS can be connected to most existing, flowing test rigs, to deliver an extensive range of well-established catalyst characterization capabilities. The ability to simply add on this functionality enhances the value of existing equipment and makes the ICCS a valuable addition. The characterization techniques it enables include pulsed chemisorption and temperature programmed analyses (reduction, oxidation and desorption) which are applied to measure performance-defining metrics such as number of active sites, metal dispersion and activity under specific conditions. These analyses can be carried out at pressures up to 20 bar, depending on the rating of the attached apparatus, and the conditions of interest.

“We’ve had excellent feedback from leaders in the field of catalyst development, who are already using the ICCS to access new information to drive their studies,” said Dr Yunes “A better understanding of the mechanisms of the reaction, catalyst deactivation, and regeneration are crucial for the commercialization of higher performance catalysts. The ICCS is a powerful solution for any researcher looking to efficiently augment and enhance their heterogeneous catalyst characterization strategies.”

For more information on the Micromeritics In-situ Catalyst Characterization System please visit our product page here.

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Micromeritics

About Micromeritics Instrument

Micromeritics Instrument Corporation is a global provider of solutions for material characterization with best-in-class instrumentation and application expertise in five core areas: density; surface area and porosity; particle size and shape; powder characterization; and catalyst characterization and process development.
The company is headquartered in Norcross, Georgia, USA and has more than 400 employees worldwide. With a fully integrated operation that extends from a world class scientific knowledge base through to in-house manufacture, Micromeritics delivers an extensive range of high-performance products for oil processing, petrochemicals and catalysts, to food and pharmaceuticals, and works at the forefront of characterization technology for next-generation materials such as graphene, metal-organic-frameworks, nanocatalysts, and zeolites. Under its premium brand Particulate Systems, Micromeritics discovers and commercializes innovative material characterization technologies that are complementary to core product lines. Cost-efficient contract testing is offered via its laboratory Particle Testing Authority (PTA).
The strategic acquisitions of Freeman Technology Ltd and Process Integral Development S.L. (PID Eng & Tech) reflect an ongoing commitment to optimized, integrated solutions in the industrially vital areas of powders and catalysis.

For additional information visit www.micromeritics.com

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