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For Immediate Release

Applied NanoWorks announces FlexDS™ Process for Petroleum Oxydesulfurization

'Single Process' removes sulfur, nitrogen and trace metals from oil distillates

Rensselaer, New York, July 29, 2008. Applied NanoWorks, an inorganic materials development company, announces FlexDS™, a new, patent-pending process for the removal of sulfur, nitrogen and trace metals from oil and oil distillates. In developmental testing FlexDS™ outperforms both existing hydrodesulfurization (HDS) and other oxydesulfurization (ODS) processes in converting sulfur compounds for extraction from oil feeds.

FlexDS™ is a 'single process' for the conversion and extraction of sulfur, to oxidize and remove nitrogen compounds and remove trace metals. The FlexDS™ process ensures no unwanted oxidation takes place, with oxidant selectivity greater than 99.1%. The process provides the ability to remove thiols, sulfides and disulfides, and is effective in converting alkylated dibenzothiophenes without oxidizing benzylic hydrocarbons (i.e. cumene, tetralin, or toluene) or internal olefins. The petroleum industry currently employs separate processes to extract sulfur, remove nitrogen, and reduce trace metal concentrations. The FlexDS™ process utilizes a unique chemistry to achieve high conversion, high selectivity, and straightforward separations.

"FlexDS provides significant process and economic advantages over traditional HDS methods," Said Eric Burnett, CEO, Applied NanoWorks. "In a front-end crude oil upgrading unit or an ultra-low sulfur diesel polisher, achieving low levels of sulfur and extracting other unwanted elements without the use of hydrogen or ancillary processes creates an immediate economic advantage."

The technology is based on an Applied NanoWorks patented titanium catalyst that enables ODS chemistry that has the highest reactivity rates to date for an ODS catalyst. The highly reactive FlexDS™ process efficiently converts and extracts sulfur from 15,000 ppm to well below 10 ppm. Current HDS processes become increasingly inefficient at extracting sulfur at levels below 1,000 ppm, requiring very high pressures to achieve ULSD standards. The FlexDS™ operates at ambient pressure and near ambient temperature conditions, greatly reducing conditions for hazardous reactions found with the high temperature and pressures required by current HDS processes.

The titanium catalyst, in both homogeneous and heterogeneous versions, was created through Applied NanoWorks' patent-pending MCP Technology™, a platform to invent and develop inorganic materials required for disruptive advancements in material and energy systems.

"In an industry facing increasingly stringent international standards for sulfur in petroleum products, FlexDS offers a single, clean approach to processing oil and oil distillates that can economically meet global sulfur dioxide emission standards," said Burnett. "And with global oil reserves rapidly growing more sour, the extraction of these sulfur compounds is becoming increasingly cumbersome and expensive with current industry processes. The FlexDS process offers the flexibility to handle a wide range of crude oil quality."

Applied NanoWorks is an inorganic materials development company focused on creating new inorganics that provide the performance and compatibilities required to build new material and energy systems in a clean tech world. For information you can find us at www.appliednanoworks.com or call 518.471.5780.

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