

# Media Release

## Clariant and Siemens to introduce New Sour Gas Shift Technology for Coal Gasification

- **Joint development and global commercialization of new process and catalyst for coal-to-chemical applications, with strong focus on China**
- **Advanced technology with significant end-user advantages in costs, safety and operational flexibility**

Muttenz, May 28, 2014 – Clariant, a world leader in specialty chemicals, announced today that it has signed an agreement with Siemens Fuel Gasification Technology to cooperate in the commercialization of a new, jointly developed sour gas shift (SGS) technology for coal gasification. The agreement appoints Clariant as the exclusive catalyst supplier for all Siemens gasification integrated SGS projects. While the collaboration covers all global projects, commercialization will focus on China – the region with the highest growth rate of coal-to-chemical projects.

Stefan Heuser, Head of the Catalysts Business Unit at Clariant, stated: “This global cooperation is a very important step in marketing our innovative catalysts for coal-to-chemical applications. With its strong commercialization focus on China, the cooperation supports Clariant’s strategy to increase our presence in the growing markets of Asia.”

Frank Hannemann, Head of Technology of Fuel Gasification Business at Siemens, declared: “This advanced technology makes coal to chemical plants more competitive and environmentally friendly. This global cooperation enhances the broader acceptance of gasification plants in China and in growing markets around the world.”

The advanced SGS technology from Clariant and Siemens significantly decreases total capital cost for coal-to-chemical and IGCC applications through optimization and simplification of total plant concepts. The entrained-flow Siemens Fuel Gasifier (SFG) is able to produce syngas from a wide range of fuels – even for low ranks of coal. Clariant’s new ShiftMax® 821 catalyst enables a simple, once-through process without further adjustment of the exit gas from the gasifier. The simplified layout uses smaller and fewer reactors, and requires no steam adjustment for temperature control. This combination reduces capital expenditure for the shift system by up to 20%, and optimizes operating costs with up to 30% lower catalyst volume.

The new technique can handle different steam-to-gas ratios and high carbon monoxide content in the gas, resulting in improved availability and reliability of the whole process. Thanks to steam-independent control of the exothermic reaction, it is an inherently safe process and there is no risk of temperature run-away reactions.

Clariant's Catalysts Business Unit is one of the foremost global suppliers of process catalysts. Its broad portfolio includes catalysts that enable the use of coal as feedstock, which are particularly well-suited to the needs of China's industry. Clariant's previous investments in the market include commercialization of the first coal-to-propylene catalysts in China, and local production of coal-to-methanol catalysts. Clariant is also the market leader in catalysts for coal-to-ammonia conversion.

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Clariant is a globally leading specialty chemicals company, based in Muttenz near Basel/Switzerland. On December 31, 2013 the company employed a total workforce of 18,099. In the financial year 2013, Clariant recorded sales of CHF 6.076 billion for its continuing businesses. The company reports in four business areas: Care Chemicals, Catalysis & Energy, Natural Resources, and Plastics & Coatings. Clariant's corporate strategy is based on four pillars: managing businesses for profitability, research & development and innovation, growth in emerging markets, and repositioning of the portfolio.

[www.siemens.com/energy](http://www.siemens.com/energy)

The Siemens Energy Sector is the world's leading supplier of a broad spectrum of products, services and solutions for power generation in thermal power plants and using renewables, power transmission in grids and for the extraction, processing and transport of oil and gas. In fiscal 2013 (ended September 30), the Energy Sector had revenues of EUR 26.6 billion and received new orders totaling approximately EUR 28.8 billion and posted a profit of approximately EUR 2 billion. On September 30, 2013, the Energy Sector had a work force of approximately 83,500.