



Albemarle researchers and university partners discover new opportunities for improving FCC catalyst effectiveness

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BATON ROUGE, La., April 16, 2015 /PRNewswire/ -- A unique collaboration between catalyst researchers from Albemarle Corporation (NYSE: ALB), Utrecht University and Stanford University has led to an innovative new method for observing fluid catalytic cracking (FCC) catalyst behavior at the nanoscale. Using X-ray nano-tomography as a powerful chemical imaging method, Albemarle and its partners have discovered that the impurities in the feedstock can create a largely impenetrable crust on the surface of an FCC catalyst particle, preventing the feedstock from reaching the still active core. This breakthrough observation indicates that inner components of FCC catalysts are not being fully utilized, creating opportunities for catalyst optimization.



"This deeper understanding of the catalyst deactivation process is paramount as we become more dependent on heavier, more contaminated feeds," said Edwin Berends, vice president of Albemarle's Refining Solutions Research and Technology group. "This new observation technique shows that catalyst accessibility is the key in maximizing the utilization of catalyst particles and gives us insights on how to engineer even better, more sustainable solutions."

"Understanding the deactivation process of this catalyst material is important because we will become increasingly dependent on cheap, but dirty petroleum for making gasoline in the coming decades," said Bert Weckhuysen, professor of inorganic chemistry and catalysis at Utrecht University and an author of the research. "Now that we know this, we can work on solutions to make the conversion process more sustainable."

A detailed technical article discussing this research has been published in the April issue of Science Advances. To access the article, please [click here](#).

About Albemarle

Albemarle Corporation, headquartered in Baton Rouge, Louisiana, is a premier specialty chemicals company with leading positions in attractive end markets around the world. With a broad customer reach and diverse end markets, Albemarle develops, manufactures and markets technologically advanced and high value added products, including lithium and lithium compounds, bromine and bromine derivatives, catalysts and surface treatment chemistries used in a wide range of applications including consumer electronics, flame retardants, metal processing, plastics, contemporary and alternative transportation vehicles, refining, pharmaceuticals, agriculture, construction and custom chemistry services. Albemarle is focused on delivering differentiated, performance-based technologies that deliver innovative and sustainable solutions to its customers. The Company employs approximately 6,900 people and serves customers in approximately 100 countries. Albemarle regularly posts information to www.albemarle.com, including notification of events, news, financial performance, investor presentations and webcasts, Regulation G reconciliations, SEC filings and other information regarding the Company, its businesses and the markets it serves.

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