

Applied Catalysis and STAX[®] Modeling for Petroleum Residue Upgrading

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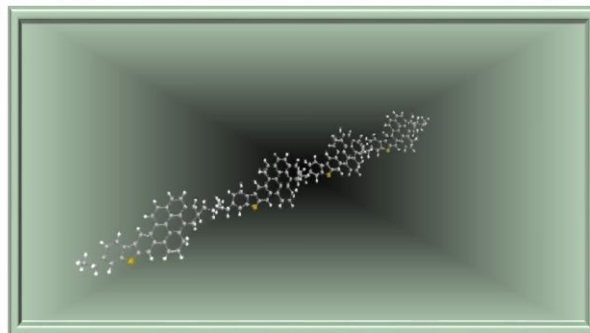
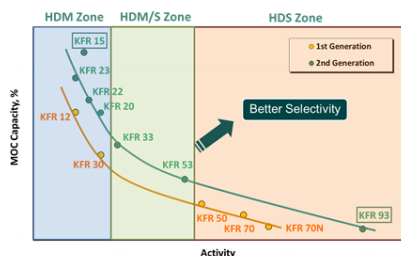
Abstract:

For the past 30 years Albemarle and Nippon Ketjen (NK) have worked to continuously improve Ketjenfine Residue (KFR[™])-grade Fixed-Bed Resid (FBR) catalysts. Latest developments involve state-of-the-art Hydrodemetallation (HDM) catalysts of KFR 15, KFR 16, and KFR 24, and substantially high Hydrogenation portfolio of KFR 93 and KFR 95. These catalysts have been used in many commercial units around the world for RFCC feed preparation, fuel oil production, and MHC applications. Albemarle has developed unique STAX kinetic modeling technologies which enable KFR[™]-grade catalytic loading optimization and reactor performance design. This presentation introduces catalysis for petroleum heavy oil applications, unique KFR[™] catalytic portfolio and STAX[®] kinetic optimizer which can be fully leveraged in the oil refining residue upgrading.

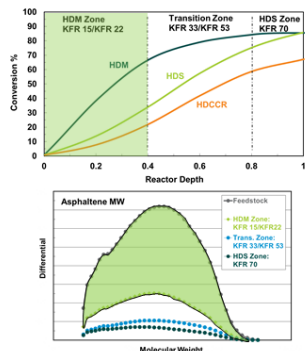
Keywords: Asphaltene, Residue upgrading, KFR catalytic portfolio, STAX kinetic modeling

Albemarle/NK's KFR[®] Catalyst Portfolio

- In-depth understanding of asphaltene molecules, diffusivity and reactivity
- Continuous improvement of catalyst portfolio (> 20 catalysts over 30 years)
- Unparalleled technical service experience resulting in considerable commercial improvement (> 100 loads)



Zone-1: HDM Zone Performance



STAX[®] Capability w/ Slicing Function

