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PRESS RELEASE . . .

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Chemical Catalysts in China – Opportunities are Process Dependent...

Unlike its upstream counterpart, the oil refining catalyst/process segment, the petrochemical/chemical catalytic process industries in China are deficient of advanced products and lack widespread technological advancement. Although China has approached higher levels of “self-sufficiency” in a number of important products, such as ethylene, benzene and a number of intermediate alcohols, it remains dependent upon trade for significant volumes of xylenes, methanol and glycols. Some of this can be blamed on rapid market expansion and demand outpacing supply; however, much of it results from poor state-guided funding of R&D in order to meet anticipated demands. The PRC is in need of huge amounts of investment not only in production assets, but also in technology development leading to more efficient utilization of its petroleum, gas and coal-based resources. In particular, catalysts and catalytic process technologies for aromatics production, oxidation reactions and dehydrogenations can be seen as significant opportunities for consideration by Western and other Asian companies.

Findings of particular interest from TCGR’s study (currently in progress) highlight both where and how global catalyst and process technology companies might pursue their interests:

- As in the case for upstream (oil refining) catalysts, SINOPEC and CNPC dominate both supply and development in the petrochemical/chemical sector (excluding supply of catalysts for fertilizers, which is diffuse). Although a few cases exist where the technologies are comparable to Western alternatives (e.g., selected hydrogenation and alkylation catalysts), most processes reflect older generations of catalysts and inefficient uses of feedstocks and assets (although largely offset by inexpensive labor costs).
- Competition from foreign (mostly Western and other Asian) suppliers has been blunted by the monopolies of SINOPEC and CNPC as well as a reluctance by foreigners to expose leading-edge technologies to the lack of protection for technology and intellectual property (IP). As some have shown, there are ways to control access to, and use of, particular technologies, although these are involved and require detailed oversight. It is worth noting that China is now able to meet almost 80% of its internal demands for petrochemical catalysts as they are applied in around 100 distinct processes.
- Recognizing the opportunities surrounding its coal and gas resources, China is developing its own conversion technologies to serve domestic needs for liquids (e.g., GTL and CTL) as well as one-step routes to key intermediates and products, such as direct ethane to acetic acid and propane to acrylonitrile. Although not yet “world class,” these are expected to be competitive with alternatives developed globally.

- As in the refining sector, China lacks the commercial development and scale-up capabilities which are available in the West and other Asian countries. Coupled with a focused, streamlined R&D effort, there is potential for broad-based and rapid expansion of external technologies, if acceptable terms can be reached with either SINOPEC and/or CNPC.

In its comprehensive study of the strategic challenges and opportunities in the catalytic process industries in China, TCGR is completing a series of four (4) reports, each dedicated to a major catalytic process area: Refining; Petrochemical/Chemical; Polymerization; and Environmental (Mobile and Stationary). **The segment report on refining will be complete at the end of April and the other three reports are being prepared, with the petrochemical/chemical segment report due in May/June.** Each segment report is a “stand alone” but integrated strategic assessment of the current situation in China, offering executive level guidance on opportunities and threats, with supporting data to enable further analyses in-house. Reports document market sizes, suppliers and buyers, industry structure, price trends and trade flows as well as technological developments and the competitive landscape. Analyses are provided so that resultant opportunities are identified and characterized, including notable hurdles. Conclusions and recommendations are made with specific action steps to be considered for short-term implementation.

The value of the report, “*The Catalytic Process Industries in China: Markets, Technologies & Strategic Implications*”, will be drawn from findings developed by two well-known and well-respected sources: The Catalyst Group Resources (TCGR) and the China National Chemical Information Center (CNCIC). TCGR has a history of nearly 25 years of providing catalyst industry evaluations and assessments for a global client base; CNCIC is the PRC’s leading data and information provider, with proven capabilities in data gathering and industry evaluation. It is clear that understanding how the markets, the players and the governmental bodies interact is crucial for successful involvement; knowing the specific market sizes, potential for growth and opportunities for participation will undoubtedly increase the likelihood of success.

For more information, see our website at <http://www.catalystgrp.com/CatalyticProcessIndustriesInChina.html> or contact John J. Murphy at 215-628-4447 (jjm@catalystgrp.com).

The Catalyst Group Resources (TCGR), a member of The Catalyst Group, is dedicated to monitoring and analyzing technical and commercial developments in catalysis as they apply to the global refining, petrochemical, fine/specialty chemical, pharmaceutical, polymer/elastomer and environmental industries. The Catalyst Group Resources' assessment is based on information obtained from the public domain as well as internal sources and industry interviews. TCGR's analysis will report factual information, as well as hypotheses/interpretations based on this information, in order to derive a reasonable set of expectations. Factors could cause actual results to differ from our forward-looking statements and The Catalyst Group Resources undertakes no obligation to publicly revise these forward-looking statements to reflect events or circumstances after the date hereof.