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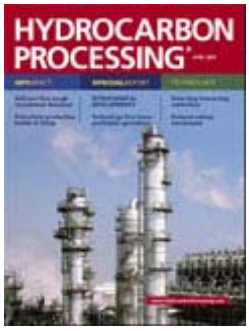
SPECIALreport: petrochemical developments



Petrochemical and polymers outlook – 2006 and beyond
For this industry, the forecast is optimistic. Yet, energy prices can dim future demand and profits
A. B. Swanson

Ammonia industry – today and tomorrow
Innovations in technology and best practices facilitate economic survival for global operating companies
M. P. Sukumaran Nair

Maximize butene-1 yields
A new reactor system capitalizes on shifting butene-2 to butene-1 from C_4 fractions
R. J. Gartside, M. I. Greene and H. Kaleem

Fine-tune cracking efficiencies for larger olefins crackers
Innovations in radiant coil design and layout facilitate leap to greater-capacity single-cell furnaces for ethylene plants
Z. Yue and C. W. Zheng

Maximize ammonia production cost-effectively
Operating company chooses to revamp the primary reformer to increase capacity of existing unit
E. West-Toolsee and R. Patel

Minimize acid content from reactor exit gases
Plagued with operating problems from solid benzoic acid accumulation, this Canadian operating facility successfully converted the venturi scrubber into a packed tower/ quench unit
A. Normandin, F. Boucher and L. Lachapelle

process optimization

Prevent system hydrate formation during sudden depressurization
Using this technique can help size gas plant inhibitor packages
B. Asadi Zeydabadi, M. Haghshenas, S. Roshani and M. Moshfeghian

process control

Detecting interacting controllers using fast Fourier transforms and correlation coefficients
Using both techniques provides the best solution
P. Lo, W. P. Swan, D. H. Chen, P. Wetuski, S. Stout and J. Stout

maintenance/structurals

Delayed coking turnaround involving three civil engineering projects
Innovative project construction phasing, and the combination of precast, cast-in-place and pre-

tensioned concrete construction technologies resulted in a proper restoration
T. Kline

corrosion/heat transfer

Estimating corrosion in metallic stacks caused by hydrochloric acid
Simple method can be used to calculate the dewpoint temperature
J. F. P. Gomes

management guidelines

Harness the power of effective personnel evaluations
Use these techniques to help improve organizational culture and business alignment
A. L. Riddle

engineering case histories

Case 32: Piping flexibility concerns
Thermal upsets can cause pump problems due to piping loads
T. Sofronas

hp impact

Competitive demands, public expectations ratchet up for refiners
Petrochemicals sector in China sees rapid capacity buildup
Owners respond to era of 'sharing' the workforce shortage
Professional piping designer program fully operational
Downstream activity in Latin America perks up on profits
Continued growth in energy stocks forecast by S&P
US pump demand to reach $8.5 billion in 2010

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About the Cover
CNOOC and Shell Petrochemical Corp. (CSPS) Lower Olefins Plant successfully started up in January 2006. This 800,000-tpy ethylene plant is a key unit in the CSPS Nanhai complex, China's latest major petrochemical joint venture. The olefins unit was designed, engineered, constructed and commissioned by JGC Corp./ Shaw Stone & Webster.