

# **1989 - 2009 Ethylene Producers' Conference Proceedings Index**

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**Editor: Rashmi K. Shah**

The Ethylene Producers Committee has made a good faith attempt to ensure that the information contained in the library is an accurate representation of the information presented at the EPC Conferences. The purpose of this publication is to promote the sharing of knowledge to help improved the safety and environmental performance of the ethylene industry. This library contains the proceedings of the EPC conferences, dating back 1992.

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ISBN: 978-0-8169-1048-9

Pub #:P-254

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# **1<sup>ST</sup> Ethylene Producers' Conference**

**AIChE Spring Meeting  
George Brown Convention Center  
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April 4, 1989**

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W.B. Stewart, The M.W. Kellogg Company

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- Session 86: Process Technology Improvements in Ethylene Plants
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# **5<sup>th</sup> Annual Ethylene Producers' Conference**

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**Houston, Texas**

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# **7<sup>th</sup> Annual Ethylene Producers' Conference**

**March 19 - 23, 1995**

**Houston, Texas**

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- Session 24: Ethylene Furnace Maintenance

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# **8<sup>th</sup> Annual Ethylene Producers' Conference**

**1996**

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**The Application of EPR to the Study of Acetylene Removal and Deactivation Reactions over Pd-based Ethylene Purification Catalysts**

S. Bailey, F. Hancock, and J. Booth

**PYROCAT Steam cracking in Coated Cracking Coils: Technology and First Commercial Scale Demonstration**

M. Wyrostek, M. Rupp, D. Kaufmann, and H. Zimmermann

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S. Glass, Jr.

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W. Vergara.

**Ethylene - Geared for Global Growth. The Move to Self-Sufficiency**

G. Adams

**Implementation of Thailand's Second Olefins Plant - Thai Olefins Company**

V. Visanuvimol, A. Bisalbutr and S. Rothman

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A. Al-Majed and C. Carradine

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C. Patel and S. Ravikumar

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T. Watanabe and S. Yamada



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Chair: John Burke; Co-chair: G. Froment

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S. Nirula

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S. Parks and C. Schillmoller

**Computer Generated Pyrolysis Models: Application of Graph Theory and Quantum Mechanics**

M. Klein, L. Broadbelt and D Grittman

**UOP/HYDRO MTO Process for Ethylene and Propylene Production**

B. Vora, R. Lentz, T. Marker, H. Nilsen, S. Kvisle and T. Fuglerud

**Deep Catalytic Cracking for Light Olefins**

L. Chapin and L. Zaiting

**Fischer-Tropsch Routes to Olefins**

T. Fenton

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G. Froment

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Chair: Ray Orriss; Co-chair: David Manley

**Process Designs for Ethylene Recovery**

D. Manley

**Thermodynamic Properties for Ethylene Recovery Process Design and Simulation**

H. Gros, L. Urlic, R. De Beistegui and E. Brignole

**Use of Mixed Refrigerants for Ethylene Plants**

A. Shaikh

**Utilization of a Hybrid Membrane System in Olefin Production**

A. Al-Rabiah, K. Timmerhaus and R. Noble

**Exergy, the Monetary Future of Industrial Economics**

V. Kaiser

**Improved Butadiene Technology for Naphtha Cracking**

H. Abrevaya, B. Vora and R. Lentz

**Selective Olefin Recovery: Facilitated Transport Membranes for Olefin Separation**

R. Barchas and C. Wallsgrove

# **9<sup>th</sup> Annual Ethylene Producers' Conference**

**1997**

**Houston, Texas**

- Session 31: Fundamental Topics in Ethylene Production
- Session 32: Ethylene Plant Technology
- Session 33: Ethylene Plant Operations
- Session 34: Ethylene Plant Environmental Issues
- Session 35: Ethylene Plant Safety
- Session 36-37: Ethylene Plant Turnarounds
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#### **Characterization of Metal Sites Responsible for Catalytic Coking in Olefin Steam-Cracking Furnaces**

M. P Kaminsky

#### **Multilevel Mixed Refrigeration for Ethylene Recovery**

David B. Manley

#### **Yield Indicators Derived from the Rigorous Simulation of Thermal Cracking Units for Ethylene Production**

F. Bouvart, F. Vincent, J. W. Snoeck, and G. Froment

#### **Are Delayed Coking Naphthas Suitable for Olefin Production?**

G. Bozzano, G. Bussani, M. Dente, and E. Ranz

#### **The Use of Electro-Optic Interferometry to Study Carbon Deposition on Transition Metal Surfaces: Preliminary Results**

Hans van Dongeren and Albert Sacco, Jr.

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Khalid Farid

#### **The Relative Economics of Mixed C<sub>2</sub> Processing Routes**

Stacia M. Edwards, Stephen J. Stanley, and Margaret M. Shreeha

#### **Cleansteam Open the Way to Feedstock Flexibility for Ethylene Production**

J. P. Burzynski and E. Lenglet

#### **Fireside Modeling in Cracking Furnaces .**

David J. Brown, Marc A. Cremer, Philip J. Smith, and Richard T Waibel

#### **Quench Exchanger Technology Development**

H. Lachmann, P Brucher

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R. E. Brown, L. E. Reed, T P Murtha, S. A. Owen, and R. J. Callejas.

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Chair: John M. Burke; Vice-Chair: Rick J. Callejas

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Mohamed S. M. Shakur, Peter J. McGuire, and Larry G. Bayer

**Effects of Selectivity on Acetylene Removal Unit Plant Operations**

K. Sasaki, J. Kimble, M. Scharre, and R. Callejas

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Steve Owen and Chanin Wray

**Maintenance of Ethylene Pyrolysis Furnaces**

Kenneth R. Oldham

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Gary C. Astle

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J. G. Berret

**Improvement of Ethylene Plant Operations Through the Application of Advanced Control and Closed-Loop, Real-time Optimization**

Jeffrey T Jones, Douglas N. Kelly, and Raymond L. Coker

**Retrofit Application of an Ultra Low NOX Burner in an Ethylene Furnace**

Karl Krotzer, Doyle Bishop, and David Giles

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Robert L. Croy, Cynthia Wyman Simpson, Dennis B. Tipton, Pinaki Sinha, and Mark E. Lashier

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Brian K. Sullivan, Kenneth V. AlIsford, Yutaka Kitayama, and Toru Miyoshi

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R. E. Sherman and A. W. Woltman

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Carl W. Bradow

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Ninni Heyerdahl and Kjell Arne Sulutvedt

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H. Mayr, H. J. Rosezin, J. Korkhaus, and J. Heners

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Hermie L. Bundick, David L. Mullenix, and Matthew A. Taylor

**Achieving Extended Run Lengths Through an Equipment Integrity Assurance Program**

John W. Jagger

**Detection of Corrosion Through Insulation**

Gary W. Carriveau

**Planning -- The Foundation of a Successful Turnaround**

Robert R. Sabota

**Coatings to Mitigate Fouling on Rotating Equipment Used in Ethylene Production**

Bill McCune

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Gerry May

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Sponsored by the Feedstocks and Products Issues Subcommittee of Ethylene Producers' Committee

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J. A. Reid

**Arsine Survey**

**Introduction to Arsine and Arsenic Compounds Removal Methods**

J. A. Reid



# **10<sup>th</sup> Annual Ethylene Producers' Conference**

**1998**

**New Orleans, Louisiana**

- Session 16: Fundamental Topics in Ethylene Production
- Session 17: Ethylene Plant Technology
- Session 18: Ethylene Plant Process Control
- Session 19: Ethylene Plant Safety
- Session 20: Ethylene Plant Environmental Issues
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S. Kogan, M. Herskowitz, H. M. Woerde, and P F van den Oosterkamp

#### **A New Ethane Pyrolysis Process for Complete Conversion**

J. P. Burzynski, C. Busson, G. Louis, T Landais, and H. Verbockhaven

#### **Anticoking Coatings for High Temperature Petrochemical Reactors**

P. S. Broutin, F Ropital, M. F Reyniers, and G. F Froment

#### **A Catalytic Route for Aromatics Production from LPG (Applicable Patent)**

G. Froment and W. DeHertog

#### **Integration of the UOP/HYDRO MTO Process into Ethylene Plants**

C. N. Eng, E. C. Arnold, B. V. Vora, T. Fuglerud, S. Kvisle, and H. Nilsen

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R. C. Wiesel

#### **Coke Reduction and Coil Life Extension: A Coil Vendor's Viewpoint**

J. J. Jones and J. Huber

#### **Coke Free Cracking - Is it Possible?**

K. X. Pham, D. Duncan, and J. M. Gondolfe

#### **Coke Inhibition in Pyrolysis Furnaces**

Y. Tong, M. K. Poindexter, T. C. Arnst, J. C. Kisalus, and P. G. Watkins

#### **A "Carbon-Like" Coating for Improved Coking Resistance in Pyrolysis Furnaces**

S. Petrone, R. Mandyam, A. Wysiekierski, K. Tzatsov, and V. Chen

#### **New Developments in Fouling Inhibition of Cracking Coils and TLE's**

H. M. Woerde, P F van den Oosterkamp, G. Zimmerman, and W Zychlinski

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**Advanced Control and Optimization of a Naphtha Cracker at DSM**

W Jacobs, H. Gerards, J. Bazelmans, R. van der Linden, H. Smolenaers, M. Dreissen, H. Peeters, D. G. Robertson, and B. Minter

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B. W. Stancato, K. V. Allsford, Y. Kitayama, T. Miyoshi, and M. Kuwajima

**Major Control System Upgrade at Lyondell Olefin Plant 2, Equistar Chemicals LP, Channelview, Texas**

R. T. Eubank and M. A. Tibbitts

**Model Based Control of Fractionation in an Ethylene Plant**

M. G. Kesler and V. Z. Friedman

**Rapid Modernization of Ethylene Plant Control System**

G. L. Funk, B. Lifienthal, A. R. Soto, and H. Rosales

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Chair: William L. Bergstrand; Co-Chair: Gary D. Lovetinsky

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N. Griswold

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T. P. Mayeux

**Pipeline and Salt Dome Storage Safety**

R. Ellington

**Improving Environmental and Safety Performance of Atmospheric Relief Valves**

M. D. Moyer

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K. J. Enqvist and R. T. Halle

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J. Errington and P.T. Bullemer

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M. Villanueva and M. J. Kennedy

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M. A. Cammiss and P A. Beckingham

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J. D. Zachary

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**In-Plant Training Methods and Experiences**

C. D. Thomas and M. Collier

**World Class Training: Job Performance is the Key**

W. D. Moore

**How a Minor Operational Change Can Adversely Affect Unit Operation and Safety**

A. Bradt, D. Corwin, C. Cummings, and B. Henstock

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**Experience of European Ethylene Plants with Water Injection to Charge Gas Compressors**

J. Heners and G. R. Taylor

**Optimizing Performance of an Ethylene Plant Cracked Gas Compressor Train**

R. Chow and D. Miller

**Solving Valve Problems in the Transfer and Decoking Line of Ethylene Units**

N. Marx

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Chair: Steve Coleman

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J. A. Reid

**Sulfur Analysis in Ethylene Manufacturing**

D. Hines and T. Paxson

**Sulfur Distribution and Removal with Refinery Gas to a NGL Cracker**

D. C. Garska, R. M. Manyik, and D. Milks

**Sulfur Removal Technologies: An Overview**

S. Kapur

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John A. Reid

# **11<sup>th</sup> Annual Ethylene Producers' Conference**

**1999**

**Houston, Texas**

- Session 62: Ethylene Control Topics
- Session 63: Ethylene Furnace Technology and Operations
- Session 64: Ethylene Revamps and Retrofit Technology
- Session 65: Ethylene Plant Safety
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Steven E. Gallun, Richard P. Cutting, Stephen A. Kline and R. Donald Bartusiak

#### **ASM Update for Ethylene Producers'**

Ian Nimmo and George Pohle

#### **Ethylene Plant Feed Maximization Controller**

Norman Farrell, Raymond L. Coker, Chandra Gannavarapu, and Rebecca L. Jones

#### **Advanced Process Control in Ethylene Plants--The Big Questions**

George S. Birchfield

#### **Multivariable Control and Online Optimization of an Ethylene Plant**

Gary Sowers, Chris Reed, Bernardo Corripio, David Starks, and Mark Marinan

#### **Advanced Control of Ethylene Plants: What Works, What Doesn't and Why**

Y. Zak Friedman

### *SESSION 63: Ethylene Furnace Technology and Operations*

Chair: Curtis Eng

#### **Ethylene Furnace Coke: How Is It Made?**

Chris Kneupper

#### **Results of a Furnace Tube Surface Treatment in a Full Furnace Trial**

David Mullenix, and Arun Kurlekar

#### **A Low Coking Environment for Pyrolysis Furnaces - CoatAlloy**

Michael P. Bergeron, Edward Maharajh, and Thomas F. McCall

#### **Mixing Element Radiant Tube (MERT) Improves Cracking Furnace Performance**

T. Torigoe, K. Hamada, M. Furuta, M. Sakashita, K. Otsubo, and M. Tomita

#### **Evaluation of Olefin Cracking Furnace Tube Life Using Weibull Reliability Analysis**

Ralph E. King

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Chair: Steve Stanley; Vice-Chair: Brenda Donnelly

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Roger C. M. Longley

**An Approach to Ethylene Plant Modernization**

C. E. Shannahan, W. M. Campbell, and M. G. Kesler

**Converting an LPG/Naphtha Cracker to 100% Ethane Feedstock On-Line, Almost**

P. N. Beattie, S. Antonas, and W. Bairlein

**Quench Oil Improvements at an Olefins Unit**

Jay R. Milbrath

**Increase C2 Splitter Capacity with ECMD Trays and HIGH FLUX Tubing**

Mohamed S. M. Shakur, Raymond E. Tucker, Kevin J. Richardson, Michael R. Sobczyk, Richard D. Prickett, Charles Polito, and Steve E. Harper

**Caustic Tower Revamp Using High Capacity Second Generation Ripple Tray Technology**

Denis Dionne, Sabah Kurukchi, and Joseph Gondolfe

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Chair: Gary Lovetinsky; Vice-Chair: Bob Strack

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Robert Bailes

**Shiftwork/Fatigue Countermeasures Reducing the Risk of Fatigue/Assuring Alertness: NOVA Chemicals' Journey**

Wendy Joel

**Safety Results Mirror Expectations at Westlake Petrochemicals New Grassroots Ethylene Plant**

Curtis R. Keller, Karl Kolmetz, and Stephen J. Wallace

**The Operating Errors and the Deficiencies in the Design or in the Safety Systems that Lead to the Acetylene Converter Temperature Runaway**

Kari J. Enqvist

**Temperature Monitoring Systems for Detecting Hot Spots in Exothermic Reactors**

Jenniter L. Bancroft

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J. A. Reid

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Brenda Donnelly, J. R. (Bob) Norman, Angie Shaikh, Mike Hazel

**Ethylene Plant Operator Training**

John Dennehy and Tracy Goodman

**Commissioning and Start-up of Exxon Chemical's Baytown, Texas 700 KTA Gas Cracker**

David C. Dutschmann and William R. Banic

**Improved Cooling Tower Designs and Advanced Cooling Tower Upgrading**

Peter M. Phelps and Larry G. Bayer

**Troubleshooting of C2 Splitter Columns: Two Cases**

N. Sankaran and Noralba Moreno

**Temporary Flare Installation at Chevron's Port Arthur Ethylene Plant**

Steve E. Harper, Carl M. Barber, and Michael A. Judice

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Chair: Michael Kennedy; Vice-Chair: Greg Dunnells

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Bryan S. Cashion and George E. Rosen

**Volunteer Employee-Driven Wildlife Habitat Enhancement Programs and Their Benefits to Corporations**

Jeffrey C. Brinck

**Performance Update Regarding Dow's Zero Blowdown Ethylene Plant**

Blair S. D. Horn

**Environmental Concerns Addressed During The Cleaning of Aboveground Storage Tanks**

Paul Sievert and Tom McQueary

**Environmental Concerns Addressed in The Design of a New Ethylene Plant**

Chris Gaines and Karl Kolmetz

**Benzene Stripper Fouling Experiences and Recommendations**

Gordon M. Combs, David R. Simms, and Mark S. Whitney

**Update Regarding Ethylene MACT Standard (NESHAP for Ethylene Processes)**

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Chair: Gilbert Froment

**DEXST: DSM's Styrene Extraction Process**

Co de Bock, Bert Bosman, Cees van Luijk, and Mark Vester

**Acetylene Hydrogenation Catalysis using Pd/A1203, Finding the Optimum Pd Dispersion/Loading and Space Velocity**

Mark P. Kaminsky, Vince J. Kwasniewski, and Peter Lysenko

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V. Kaiser, J. P. Laugier, R. Di Cintio, and M. Picciotti

**Propylene Production from Fluid Catalytic Cracking Process**

K. M. Sundaram, T. Y. Chan, and R. Venner

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David Leung, Jichuan (George) Hu, and Wiltred Lam

**A Catalytic Process for Olefins Production**

W. De Hertog, G. F Froment, and M. P. Kaminsky

**The Impact of Selected Sulfides on Coke Formation on Various Metal and Alloy Surfaces**

Cher Dip Tan and R. Terry K. Baker

**Reactor Model and Process Design for the Selective Dehydrogenation of Propane**

J. H. Vleeming, F P. M. Waterreus, H. M. Woerde, P F van den Oosterkamp, S. Kogan, O. Malinovski, and M. Herskowitz

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Chair: Steve Coleman

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Steve Coleman

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Larry Christian

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John A. Reid

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John A. Reid

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John A. Reid

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*TUTORIAL: Ethylene Plant Cracking Heater Operation & Maintenance Tutorial*

**Ethylene Plant Cracking Heater Operation & Maintenance Tutorial**

Charles Nagy, John Albano, and Paul Fell



# **12<sup>th</sup> Ethylene Producers' Conference**

**March 5 - 9, 2000**

**Atlanta, Georgia**

- Session 85: Ethylene Plant Compressors
- Session 86: Fundamental Topics in Ethylene Production
- Session 87: Ethylene Technology Challenges Beyond 2000
- Session 88: Ethylene Plant Safety
- Session 89: Ethylene Plant Operations
- Session 90: Process Control for Ethylene Plants
- Session 91: Ethylene Plant Environmental
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Sanjeev Kapur, Leonard Schaidler, and Hans Weyermann

#### **Advancements in Ethylene Plant Compressor and Steam Turbine Design**

Robert A. Taylor, Robert Beck, and Kevin S. Eads

#### **Process to Evaluate Centrifugal Compressor Re-rate, Revamp, or Replacement Opportunities**

John F. Vanderhoff and Charles D'Angelo III

#### **Case Study: Revamping and Replacing Major Compression Systems as a Part of an Ethylene Plant Expansion**

Hans P. Weyermann and Diane E. Scheponik

#### **Case Study: Reduce Ethylene Production Cost by Increasing Compressor System Efficiency and Improving Equipment Reliability**

Matthew J. Kress

#### **Case Study: Performance Difference Between Late 1980s and Mid 1990s Cracked Gas Compressor Designs**

Rodney J. Fruge

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#### **Metathesis - An Enhanced Propylene Production**

Jean Paul Laugier

#### **Methanol to Olefins: Enhancing Ethylene and Propylene Selectivity Using Modified SAPO-34**

Michael G. Abrara, Xianchun Wu, and Rayford G. Anthony

#### **New Developments in Fouling Inhibition of Cracking Coils and TLEs**

H.M. Woerde, P.F. van den Oosterkamp, G. Zimmerman, W. Zychlinski, C. Brun, and L. Sposito

#### **Factors to Consider in Choosing Chemical Additives for Coke Suppression and CO Control in Hydrocarbon Pyrolysis Furnaces**

Stan A. Zisman, Steve A. Owen, Darin B. Tiedtke, Larry E. Reed, Lucy H. Anderson, Jacques Leger, and Chad A. Jennings

**An Evaluation of the Coking Resistance of a High Performance Oxide Dispersion Strengthened (ODS) Alloy Tube**

Keizo Hosoya, Kenji Satoh, Katsumi Yamamoto, Godfrey J.A. Hack, and Ronald M. Haeberle

**Improved Operation of Pyrolysis Unit: Reduced Formation and Collection of Coke in Ethylene Units**

Lyle F. Albright

**Performance of Coatalloy Coating Systems in Ethylene Pyrolysis Furnaces Using Different Feedstocks**

Ted Redmond, Arthur Bailey, Yan Chen, Gary Fischer, and Randy Miller

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Chair: Colin Bowen; Vice-Chair: Alberto Morales

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Rein Willems

**Emerging Technologies for Olefins Production (Synthesis)**

Robert J. Gartside, Thomas F. McCall, Eric Wagner, and Mark S. Whitney

**NAFTA Region Olefins Complex: NROC. A Texas Sized Steam Cracker**

John McNab and Patrick Plehiers

**Ethylene 3 Project - World's Largest Ethylene Unit**

C.R. (Chuck) Hucik

**Mega-Project 3 - Dow Fort Saskatchewan Expansion**

W.C.S. Pick, G.A. Hansen, and W.W. Pell

*SESSION 88: Ethylene Plant Safety*

Chair: Robert Strack; Vice-Chair: Curtis Keller

**Furnace Learning Experiences at Dow Chemical**

Brian Funk

**Furnace Learning Experiences: Dow Benelux NV Netherlands**

Aad Tuit

**Steam Cracking Furnace Safety Incidents**

David B. Spicer

**Furnace Incident at Shell Chemical Company**

David G. Brignac and Tommy L. Brumfield

**Brittle Failure of a Carbon Steel Flare Line**

David Mullenix

**Cooling Tower Collapse**

Daniel Stockl

**Hydrogen Release in a Pyrolysis Gasoline Hydrotreater**

William H. Henstock

**Failures of Components in Vibrating Service**

W. Douglas Thomson and Robert D. Strack

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Chair: John Burke; Vice-Chair: Rick Callejas

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David A. Strobhar

**Shell OP 3: Aftermath of the Fire and Explosion**

Tommy Weatherly

**Total Productive Maintenance**

Susan Alvarado, Carlton R. Jensen, Melinda S. Meachem, and Mike A. Woolbert

**Increase Ethylene Processing Capacity and Efficiency with Improved Liquid/Liquid Separation**

Michel Guyot, Sylvie Balouet, Thomas H. Wines, and Denis Bretelle

**Refrigeration Compressor Lube Oil Skid Revamp and Reliability**

Matt Kress, David Reynolds, and Ralph Teran

**Turbocompressor Seal Oil Systems "On Line" Function Testing**

Tommy Weatherly

**Compressor Lube and Seal Oil Systems Reliability Upgrades**

T.P. Mayeux

**Critical Motor Checking**

Philip Crepinsek

SESSION 90: Process Control for Ethylene Plants

Chair: Jack Buehler; Vice-Chair: Jim Stoos

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John A. Reid and Pat Zuniga

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Ravi Nath, Zak Alzein, Rogier Pouwer, and Mario Lesieur

**Compositional On-Line Analysis for Furnace Feed and Effluent**

Ron L. Johnson, Jerry Clemons, Kelley Bell, Jim Kelly, and Mark Podvorec

**Process Control and Optimization of an Ethylene Cracker**

Simon Lopez, Pete Sharpe, and Douglas Prior

**An Alternate Approach to Control of Ethylene Plants without the Use of Multivariable Control**

Charles D. Herzog

**The Impact of Olefin Plant Revamps on Advanced Process Control and Real-Time Optimization**

Paul D. Leggett, R. Mark Stout, and Elizabeth A. Teeter

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Chair: Michael Kennedy; Vice-Chair: Keith Wade

**Use of Enclosed Ground Flares**

Dennis P. Tiemeier and Dennis Knott

**Opportunities to Reduce Greenhouse Gas Emissions in the U.S. Ethylene Industry**

Zoe Hartley and Skip Laitner

**Facing Up to the Challenge of Zero Emissions**

Roger W. Matthews

**The Dutch Approach of Covenants Concerning Energy Efficiency**

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# **13<sup>th</sup> Ethylene Producers' Conference**

**April 22-26, 2001**

**Houston, Texas**

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- Session 76: Cracked Gas Compressor Fouling - Causes and Mitigation Applied
- Session 77: Safety Issues in Ethylene Plants
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**March 10-14, 2002**

**New Orleans**

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**March 30 - April 3, 2003**

**New Orleans, Louisiana**

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- Session 55: Ethylene Plant Safety
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# **16<sup>th</sup> Ethylene Producers' Conference**

**April 25-29, 2004**

**New Orleans, Louisiana**

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- SESSION 55: Feedstock Contaminants in Ethylene Plants. How Does Your Plant Measure Up?
- SESSION 56: Ethylene Producers Conference Keynote Address/Ethylene Plant Environmental Issues
- SESSIONS 58 and 61: Ethylene Plant Maintenance - Maintaining Olefins Plant Energy Efficiency
- SESSION 59: Olefins Production: Fundamental and Technological Aspects: Creativity and Technological Innovation
- SESSION 60: Ethylene Plant Operations
- SESSION 62: Ethylene Plant Safety
- SESSIONS 63 and 64: Ethylene Plant Technology - Furnace Burner Technology Review and Roundtable
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Sally Shaver

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Jennifer Keane

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Matthew Kuryla and Whitney Swift

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Michael Smylie and Michael Koonce

**What Can We Do About HRVOC's?**

Stephen Lang and Richard Churns

**Ethylene Plant Cooling Tower Monitoring and Heat Exchanger  
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Lisa S LeBlanc

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Session 61 Chair: Larry Bayer; Vice Chair: Thomas Cannon

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Darin R Foote

**Utilities Leak and Steam Trap Inspection and Repair Program**

David B Johnston

**The Use of Torque Meters for Monitoring Turbine/Compressor Performance**

Louis J Trahan and Lee W Allison

**Turbo Machinery Efficiency Gains through Reliability Improvements**

Patrick J. Cooper

**Steam System Optimization**

Robert Aegerter

**Maintaining and Increasing Cooling Tower Efficiency**

James L Willa

**Maintenance and Energy Economics**

Claire Cagnolatti

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Jeffrey S Plotkin

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Robert B James, Dan Wei, Jim Andersen and Walter Vermeiren

**MTP Progress with Focus on DME**

Waldemar W Liebner

**Planning and Designing the Modernization of the Recovery Area of a Flexible Cracker**

Andre Bernard and Richard Hayden

**Improve Butadiene Recovery with the KLPTM Process**

T. D Foley, S. L Krupa, B. G Cho and S. A McColl

**Coking Prediction Capability Enhances Steam-Cracker Economics**

Bernard Descales, Nicolas Sumian, Erin M Surdo, Philippe Mouille and Brian Cooke

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Luiza M Jorge, George Nowowiejski and Jose Antonio C Cunha

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Bryce Kagay

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Ralph E King

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Howard S Kruman, K. Funk

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Mark Siddoway and Natalie Salter

**Pipeline Integrity Management Program Implementation Obstacles**

Reggie Harris

**Safety Instrumented System Design for a Grassroots World Scale Ethylene Complex**

Alastair Anderson and Mark M Moderski

**Software Upgrade Triggers Events that Lead to Plant Shutdown**

David Gent

**Morris Plant Furnace Start-Up Incident & Lessons Learned**

Bala S. Devakottai, Denise R Karstensen and Bruce R. Raeburn

**Flare Line Failure Case, What Have We Learned?**

Abram Kuo and Ryan Pitt

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Chair: Chris Wallsgrove; Vice Chair: Chell Chellappan

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**Flame Rollover and Other Flame Shape Problems**

Ron Just

**The Impact of NO<sub>x</sub> Regulation on the U.S. Ethylene Industry**

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Doyle Bishop, Callidus Technologies LLC  
Michael Wignal, Hamworthy Combustion Engineering  
John Grever, Selas Corporation of America  
Keith Wade, John Zink Co LLC

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Robert J. Gartside, Peter R Ponzi, Frank D. McCarthy, S.G.(Chell) Chellappan, Paul J. Chapman and R.T. Waibel

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Michael Boell, Rob Vasbinder and Nic Castelijns

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Hitoshi Shindo, Kheng Lau, Ryugi Kaneko and John S Ayala

## **After the Alarm Rationalization - Managing the DCS Alarm System**

Jamie Errington, Tim DeMaere and Dal Vernon Reising

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# **17<sup>th</sup> Ethylene Producers' Conference**

**April 10-14, 2005**

**Atlanta, Georgia**

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- SESSION 35: Feedstock Contaminants in Ethylene Plants - Mercury (Paper Session)
- SESSION 36: Keynote Speaker
- SESSION 38: Ethylene Plant Safety (Paper Session)
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### **Reliability Assessment of Rotating Equipment**

Charlie Rutan and Mike Thuillez

### **Rotor Balancing Options**

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Mark Cooper and Mike Thuillez

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# **18<sup>th</sup> Ethylene Producers' Conference**

**April 24-26, 2006**

**Orlando, Florida, USA**

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# **19<sup>th</sup> Ethylene Producers' Conference**

**April 22-27, 2007**

**Houston, TX, USA**

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- SESSION 15: Ethylene Plant Safety - Overview of Process Safety Issues in Ethylene Plants
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- 22 - Ethylene Producers Conference Keynote Presentation
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