

# Gexcon

**MARY KAY O'CONNOR  
PROCESS SAFETY CENTER**  
TEXAS A&M ENGINEERING EXPERIMENT STATION

AN ADVANCED COURSE

# DUST EXPLOSION HAZARDS

April 19-20, 2018  
Baton Rouge, Louisiana 70801

Presented by Gexcon & Mary Kay O'Connor Process Safety Center

DUST PROPERTIES  
EXPLOSION MODELING  
PROTECTIVE MEASURES  
IGNITION SOURCES  
PREVENTIVE MEASURES  
PROCESS HAZARD ANALYSIS  
LEGISLATION  
ACCIDENTS  
SELECTED CASES  
OUTLOOK



## WHO SHOULD ATTEND?

- Safety engineers, managers, supervisors, and other personnel employed by industries where the presence of hazard zones created by dust is very likely
- Representatives of governmental or public bodies involved in development of safety regulations
- Anyone who would like to develop an understanding of fire and explosion safety

## MKOPSC

The Mary Kay O'Connor Process Safety Center's mission is to promote safety as second nature in industry around the world with goals to prevent future accidents. The Center develops safer processes, equipment, procedures, and management strategies to minimize losses within the processing industry.

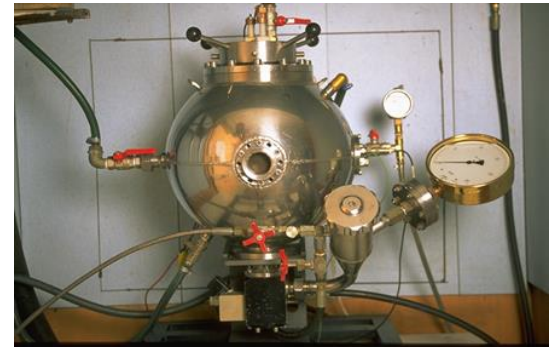
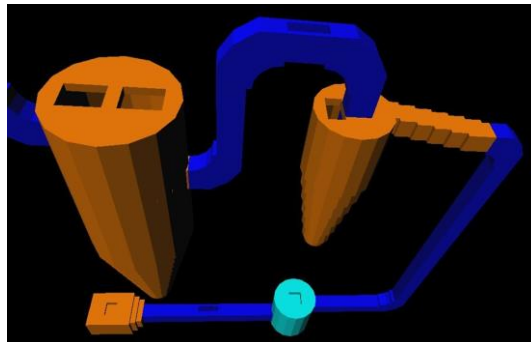
MKOPSC is located on the TAMU-College Station Campus.  
PHONE: 979-845-3489  
WEB: <http://psc.tamu.edu/>

## PROGRAM OVERVIEW

Gexcon is presenting an advanced course on dust explosion hazards. The 2-day course will address multiple hazards associated with dust explosions including: dust properties, explosion modeling, preventive measures, ignition sources, protective measures, process hazard analysis, legislation, accidents, and selected case studies. The course will prove helpful to experienced engineers, safety supervisors, and operating managers.

## CONTENT

- Dust Explosion Accidents
- Dust Explosion Basics
- Dust Explosion Characteristics
- Ignition Sources
- Lessons Learned
- Preventive Measures
- Protective Measures
- Quantitative Risk Assessment Methodology
- Analyses – Case Studies



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## REGISTRATION

Register before April 13, 2018. Pre-registration is required. Register for the course online at:

<https://teesedge.tamu.edu/modules/shop/index.html?action=section&OfferingID=43&SectionID=142/>

Via e-mail to:

[val-green@tamu.edu](mailto:val-green@tamu.edu) or  
[gexconus@gexcon.com](mailto:gexconus@gexcon.com)

Early Registration fee \$1350

Registration after March 19, 2018:  
\$1495



## LOCATION DETAILS

The course will be held at the Albemarle 451 Florida Street Baton Rouge, LA 70801

## ADMINISTRATOR

Valerie Green  
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Mary Kay O'Connor Process Safety  
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## GEXCON US

### GEXCON'S OFFICE IN THE USA

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Gexcon's headquarters are in  
Bergen, Norway

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## AGENDA

### Day 1

- 08:30 Registration and Coffee
- 09:00 Introduction
- 09:15 **Dust Explosion Accidents**  
Examples of accidents: Imperial Sugar, West Pharmaceutical, John Foundry, Bremer Hammer Muhle, etc.
- 10:00 Coffee Break
- 10:15 **Dust Explosion Basics and Characteristics**  
Combustion mechanisms, explosion properties and test methods, influence factors
- 10:45 **Ignition Sources**  
Combustion mechanisms, Fuel reactivity, Positive feedback mechanism, Importance of geometry, Explosion tests
- 12:00 Lunch
- 13:30 **Lessons Learned: Legislation and Standards**  
US legislation, OSHA's NEP, NFPA standards
- 14:30 **Preventive Measures: Introduction**  
Inerting, avoidance of ignition sources, housekeeping, hazard area classification
- 15:00 Coffee Break
- 15:15 **Preventive Measures 2: How to do a Hazardous Area Classification**
- 16:00 End of Day 1

## AGENDA

### Day 2

- 08:00 Welcome and Coffee
- 08:45 **Protective Measures 1: Introduction**
- 09:30 **Protective Measures 2: Dust Explosion Venting Design**  
How to calculate size, practical examples of dust equipment, vent panels, examples of poor design
- 11:00 **Protective Measures 3: Suppression Design**  
Detection, dust reactivity, vessel parameters, and hardware properties
- 12:00 Lunch
- 12:30 **Dust Explosion Process Hazard Analysis**  
How to comply with OSHA's NEP
- 13:30 Coffee Break
- 13:15 **Dust Explosion Modeling**  
Using CFD to describe explosion propagation
- 15:30 Questions and Answers
- 15:45 Closing / Certificates



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