

# Control Conference Africa 2017

## Workshop program

## The A-Z of APC

5 December

### Introduction

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Advanced process control (APC) is a well established technology in the process industries, and is becoming more popular in the mining and metallurgy fields. This workshop aims to introduce delegates to the key concepts currently used in APC, as well as introducing some exciting new ideas.

A series of topics will be discussed in this workshop, each topic presented by an expert in the field. The speakers come from both universities and industry, and are all leaders in their fields.

### Speakers

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#### Margret Bauer

Margret Bauer (Wits) is an honorary professor at the University of the Witwatersrand.

#### Gustaf Gous

Gustaf Gous (SASOL) is a Lead Specialist in process control engineering currently working at the Secunda Chemical Operations plant of Sasol in Secunda, South Africa.

#### Kevin Brooks

Kevin Brooks (BluESP) completed numerous international projects in the area of APC and optimization for mineral processing and petrochemicals.

#### Derik le Roux

Derik le Roux (UP) is a lecturer at the University of Pretoria. His main area of research is state and parameter estimation in the process industry.

#### Sirish Shah

The main area of his current research is process and performance monitoring, system identification and design, analysis and rationalization of alarm systems.

#### Rainer Dittmar

Rainer Dittmar is a Professor at the West Coast University of Applied Sciences, in Heide Germany. He worked in process control at the PCK Schwedt Refinery, and as head of the pilot plant automation group at Chemieanlagenbau Leipzig.

### Programme

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8:00 Arrival and registration

8:20 Welcome and Introduction

8:30 It's about the PID, stupid! - Margret Bauer

9:25 Deconstructed PID - Gustaf Gous

10:20 - 10:40

Coffee and Tea break

10:40 Linear - It really is not so bad - Kevin Brooks

11:35 Non-linear - It really is better - Loutjie Coetzee

12:30 - 13:15

Lunch

13:15 Kalman filters - everything you were afraid to ask - Derik le Roux

14:10 'Big data' and analytics in the process industry - more than just hype? - Sirish Shah

15:00 Collaboration between Academia and Industry - It really can work - Rainer Dittmar

15:55 - 16:15

Coffee and Tea break

16:15 Discussion: A final word

17:00 End

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## Workshop program

## Process Data Analytics

6 December

### Introduction

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Process data analytic methods rely on the notion of sensor fusion whereby data from many sensors and alarm tags are combined with process information, such as physical connectivity of process units, to give a holistic picture of the health of an integrated plant.

The discovery and learning from process data refers to a set of tools and techniques for modeling and understanding of complex data sets. Such data sets generally include normal numerical (or non-categorical) data but should also take into account categorical (or non-numerical or qualitative) data from Alarm and Event (A&E) logs combined with process connectivity or topology information.

### Speakers

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#### Sirish Shah

The main area of his current research is process and performance monitoring, system identification and design, analysis and rationalization of alarm systems.

#### Babatunde A. Ogunnaike

Babatunde A. Ogunnaike is a fellow of the American Institute of Chemical Engineers (AIChE) in 2009, and elected to fellowship of the Nigerian Academy of Engineering.

#### Lidia Auret

She is a senior lecturer at Stellenbosch University, Department of Process Engineering. Her research interests include applications of machine learning and statistical inference in process monitoring and process control, especially in extractive metallurgical processes.

#### Margret Bauer

She is an honorary professor at the University of the Witwatersrand. Her research is on automation and industrial process control in various industries.

### Programme

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**8:00** Arrival and registration

**8:20** Welcome and Introduction

**8:45** Topic 1: Data quality assessment and visual analytics

10:00 - 10:15

Coffee and Tea break

**10:15** Topic 2: Process and performance monitoring

11:30 - 11:45

Coffee and Tea break

**11:45** Topic 3: Alarm Data Analytics

13:00 - 14:00

Lunch

**14:00** Topic 4: Statistical design of experiments

**15:30** Discussion & wrap-up

**16:00** End