UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

DIPARTIMENTO DI SCIENZE CHIMICHE E GEOLOGICHE

Società Chimica Italiana
Divisione di Chimica Analitica

GRUPPO DIVISIONALE CHEMIOMETRIA
(Divisione Chimica Analitica SCI)

Chemometrics Tools for Process Monitoring School

10 – 13 March 2020

Università di Modena e Reggio Emilia
Dept. of Chemical and Geological Sciences
Via G. Campi, 103 – Modena, Italy

Teachers

Prof. Marina Cocchi (Università di Modena e Reggio Emilia)
Prof. Alberto Ferrer (Universitat Politècnica de València, Spain)
Prof. Theodora Kourti (McMaster University, Hamilton, Ontario)
Prof. Riccardo Leardi (Università di Genova**)**

contact: marina.cocchi@unimore.it

Registration fee (coffee breaks, lunches, material included)

EURO 450 (University, No profit Organization)
EURO 300 (Students)
EURO 350 (Post- Doct.)
EURO 750 (Industry)
EURO 80 (Pre-Course 10 March, Students & No profit**) EURO 100 (**Pre-Course 10 March, Industry**)**

Preliminary Schedule
Tuesday 10 (optional) 9.30 - 18.30: Basics of PCA-PLS + exercise
Wednesday/Thursday 9.00 -18.30 - Friday 9.00 - 14.00

website opening: 30 January 2020 (web address will be communicated to interested people, who can write to:
marina.cocchi@unimore.it Subject: MCMP2020)

Chemometrics Tools for Process Monitoring School
Modena
10 – 13 March 2020

Preliminary Program

Tuesday 10 March (optional)

AULA Informatica Uint 3 (piano -1)

9.00 – 9.30 Registration

9.30 – 10.50 Principal Component Analysis (PCA): basis, pre-treatments, nature of data, model dimensionality assessment, graphical representation of results, interpretation, validation. Orthogonal Rotations. (R. Leardi)

10.50 – 11.10 coffee break

11.10 – 13.10 Lab Exercises: PCA (M. Ahmad - R. Leardi)

13.10 – 14.15 *lunch*

14.15 – 16.15 Partial Least Squares (PLS): basis, pre-treatments, nature of data, model dimensionality assessment, graphical representation of results, interpretation, validation. Multivariate Calibration (M. Cocchi)

16.15 – 16.30 coffee break

16.30 - 18.30 Lab Exercises: PLS (M. Ahmad - M. Cocchi)

Wednesday 11 March

AULA Informatica Uint 3 (piano -1)

8.30 – 9.15 Registration

9.15 – 9.45 Introduction to Process Monitoring - Basic about control chart (M. Cocchi)

9.45 – 11.30 Use of PCA models in the context of process monitoring.
Multivariate control charts T2, Q. Contribution plots. (R. Leardi)

11.30 – 11.50 coffee break

11.50 – 12.50 Review of diagnosis methods in MSPC (M. Cocchi)

12.50 – 14.00 *lunch*

14.00 – 14.20 Data Fusion in Process Monitoring context (M. Cocchi)

Cases of study presentation

14.30 - 14.50 *title to be defined* (R. Rocho de Oliveira, Universitat Barcelona, Spain)

15.00 – 15.20 Cases of study in petrochemical production - Eni Versalis (E. Mantovani, Versalis-ENI Mantova, Italy) *to be confirmed*

15.30 – 16.00 Cases of study in pharma (R. Simonetti, S. Cottafava Janssen Pharmaceutical Companies of J&J, Latina, Italy) *to be confirmed*

16.00 – 16.15 coffee break

16.15 – 18.30 Lab Exercises: Multivariate Control Charts (M. Ahmad – M. Cocchi – R. Leardi)

20.30 *Social Dinner*

Thursday 12 March ***AULA Informatica Uint 3 (piano -1)***

9.15 – 11.15 Batch Process: methods industrial application

11.15 – 11.35 coffee break

11.35 – 13.00 Dealing with Start ups and Transitions in Continuous Processes

(T. Kourti: McMaster University, Hamilton, Ontario Canada)

13.00–14.00 *lunch*

14.00–15.30 Practical issues in Batch MSPC: synchronization, preprocessing and modelling: part I (A. Ferrer: Universitat Politècnica de València, Spain)

15.30–15.45 *coffee break*

15.45–18.30 Exercises on batch synchronization

Friday 13 March

9.15 – 11.00 Practical issues in Batch MSPC: synchronization, preprocessing and modelling: part II (A. Ferrer: Universitat Politècnica de València, Spain)

11.00 – 11.20 coffee break

11.20 – 13.00 Exercises on multi-phase batch modelling

13.00–13.30 Question Time (Closure)