

CPD Course | Coordinated by the Continuing Professional Development Programme (CPD)

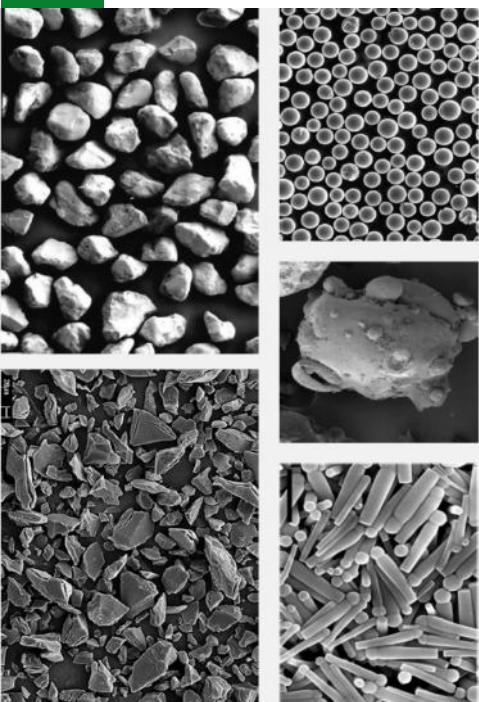
PARTICLE CHARACTERISATION COURSE

Advances in Particle Characterisation

28th to 30th November 2018



Course Objectives



With support from the Royal Academy of Engineering, UK, the Universities of Cape Town and Leeds are collaborating on advancing particle characterisation methods. Towards this aim, we are organising a three-day course aimed at guiding scientists, engineers, technologists and professionals who need to gain a better understanding of particle characteristics to enable them to address mineral processing and manufacturing issues from a fundamental base. The course aims to introduce and develop the participants' knowledge of the principles and methods of particle characterisation.

The course will be presented by lecturers from Universities of Cape Town (SA) and Leeds (UK). The course will be given by over ten presenters with internationally-leading expertise in their own speciality fields. The outcome of the course should enable the participants to choose how to characterise the particle and suspension properties and to diagnose particular process and product issues of interest.

This short course will outline the principles and methods for characterising the chemical, physical and mechanical properties of particles at length scales ranging from single particles to bulk levels. Sample preparation and the state-of-the-art techniques for particle characterisation will be detailed.

Course Content

The contents of the course will include:

- Sampling, sample preparation and suspension rheology
Characterisation of physical, mineralogical and mechanical properties of particles
- Particle shape and structure characterisation and its effect in flotation and comminution
- Modelling of particulate materials, granular flow modelling, application of DEM for particle flow, mixing, separation and segregation, population balance modelling of predictive milling
- Current progress and Industrial challenges in particle comminution and flotation

Who Should Attend

This short course will outline the principles and methods for particles characterisation at length scales ranging from single particles to bulk levels. Therefore, this course will be of benefit to qualified practitioners and postgraduate students, who are currently involved in minerals beneficiation or processing. This course is open to scientists and engineers who are willing to learn more about particle characterisation, particularly related to mineral processing.

Course Presenters

The course will be present by lecturers from Universities of Cape Town (SA) and Leeds (UK). The course will be given by fourteen presenters with internationally-leading expertise in their own speciality fields.

Prof. David Deglon, Prof. Jeremy Mann, Dr Belinda McFadzean, Prof. Aubrey Mainza
Dr Mehdi Safari, Ms Jenny Wiese, A/Prof. Megan Becker, Prof. Indresan Govender



University of Cape Town (South Africa)

Prof. Mojtaba Ghadiri, Dr Antonia Borissova, Dr Xiaodong Jia
Dr Sadegh Nadimi, Dr Merhrdad Pasha, Dr Saeid Nezamabadi ¹

University of Leeds (UK) and ¹ Visiting Scholar from the Université de Montpellier (France)



Course Overview

Name	Advances in Particle Characterisation
Duration	28 th to 30 th Nov 2018, 8:30-17:00
Venue	Garnet Room, 2 nd Floor , New Engineering Building, Upper Campus, UCT, SA.
CPD	3 CPD points, ECSA Validation No: UCTHRM18
Participants	Minerals processing engineers, metallurgist, mineralogist, particle specialist, scientists, research fellows, modelling specialist, postgraduate students etc.
Course dinner	Registration to the course includes a course dinner
Fees*	Standard delegate: R12000 (This fee includes a comprehensive set of course notes and refreshments. Discount is available for local participants and students)

Lecture Programme

Wednesday 28 Nov 2018: Characterisation of Physical and Mechanical Properties of Particles

08:30 *Registration and Coffee*

09:00 **Introduction**

Prof. David Deglon, University of Cape Town

09:30 **Sampling and sample preparation for particle characterisation**

Prof. Mojtaba Ghadiri, University of Leeds

10:30 *Coffee*

11:00 **Suspension rheology**

Dr Mehdi Safari, University of Cape Town

12:00 **Mechanical properties of particles**

Dr Sadegh Nadimi, University of Leeds

12:45 *Lunch*

13:30 **Particle mineralogical characterisation**

A. Prof. Megan Becker, University of Cape Town

14:30 **Particle shape and structure characterisation**

Dr Mehrdad Pasha, University of Leeds

15:45 *Coffee*

16:10 **Particle shape in flotation and comminution**

Ms Jenny Wiese, University of Cape Town

Thursday 29 Nov 2018: Modelling of Particulate Materials

08:30 **Introduction to deformable particle modelling**

Dr Saeid Nezamabadi, Université de Montpellier, Visiting Scholar at University of Leeds

09:30 **Granular flow modelling (PEPT)**

Prof. Indresan Govender, University of Cape Town

10:30 *Coffee*

11:00 **Fluid-structure interaction via Lattice Boltzmann Method and its use in DEM**

Dr Xiaodong Jia, University of Leeds

12:00 **Application of DEM for particle flow, mixing, separation and segregation**

Dr Mehrdad Pasha, University of Leeds

13:15 *Lunch*

14:00 **Population balance modelling of predictive milling**

Dr Antonia Borissova, University of Leeds

15:00 *Coffee*

15:30 **Hands-on practice on population balance modelling for comminution**

Dr Antonia Borissova, University of Leeds

16:45 **Future research trends in particle modelling**

Dr Sadegh Nadimi, University of Leeds

Friday 30 Nov 2018: Challenges and Opportunities

08:30 **Current progress on comminution**

Prof. Mojtaba Ghadiri, University of Leeds

09:30 **Industrial challenges in particle comminution**

Prof. Aubrey Mainza, University of Cape Town

10:30 *Coffee*

11:00 **Current progress on flotation**

Dr Belinda McFadzean, University of Cape Town

12:00 **Industrial challenges in particle flotation**

Prof. Jeremy Mann, Technology Manager for SAMMRI and Project Manager for AMIRA International

13:15 *Lunch*

14:00 **Discussion on industry input in particle engineering education (Closing Remarks)**

Dr Mehdi Safari, University of Cape Town

Registration

Registration and Cancellation

In order to ensure a place on the course (limited to 18 participants), applicants must complete and return a signed application form to the course administrators: Heidi Tait or Sandra Jemaar.

-) [Register for this course](#)
-) Registration covers attendance of all sessions of the course, refreshments, and course material. Discounts are available for local participants and for group bookings (three or more delegates).
-) Registration closes one week before the start of the course. Confirmation of acceptance will be sent on receipt of a registration form.
-) Cancellation must be received one week before the start of a course, or the full course fee will be charged.
-) **For more information on application and registration procedures, please visit our website: www.cpd.uct.ac.za**

Certificates and CPD Points

A certificate of attendance will be awarded to CPD participants. Participants need to attend 80% of the lectures to qualify for an attendance certificate. The course is registered with the Engineering Council of South Africa, and is accredited for the award of 3 CPD points, which are now required for continuing professional registration. The ECSA course code for this course is UCTHRM18.

CPD participants can also request a formal university transcript, which will show this course as part of a Professional Development Career.

Contact details

For more information or details on CPD courses, visit our website or contact us.

For technical queries, please contact Dr Mehdi Safari : Mehdi.Safari@uct.ac.za

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Physical address

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Programme administrators

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