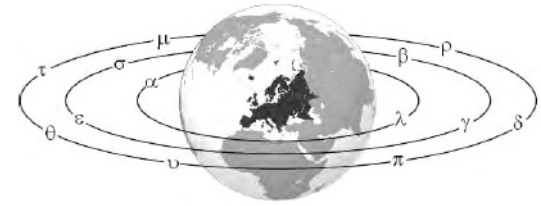









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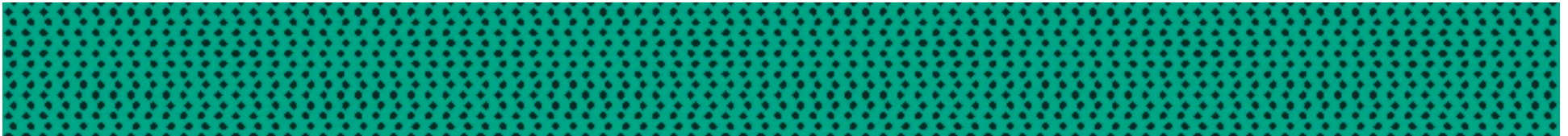


Fundamentals of EPMA

Course Tutors:

-  Dr Stuart Kearns, University of Bristol, UK
-  Dr Xavier Llovet, University of Barcelona, ES
-  Mr Mike Matthews, AWE, UK
-  Dr Ben Buse, University of Bristol, UK
-  Dr Jon Wade, University of Oxford, UK

April 7th – 9th 2014



Overview

A full 3 day course to introduce the fundamental physical and practical methods of EPMA. The course is delivered as a series of on-instrument demonstrations and short lectures. The course will cover:

Overview of WDS EPMA – Electron beam – solid interaction. Monte Carlo modeling; Characteristics of X-ray detectors in the EPMA – (EDS, WDS); Analysis of Trace elements; Light element analysis.

Practical demonstrations on both JEOL 8530F and Cameca SX100 EPMA through a series of case studies will introduce students to instrument set-up and spectrometer configuration, qualitative ED/WD scans. Overlap corrections on WDS, Primary Standard calibration, WD X-ray mapping and quantitative analysis set-up and automation. Review sessions will consider statistical treatment of data and post-processing of X-ray maps. Advanced topics such as low voltage analysis are introduced.

Strictly limited to 24 participants. Cost is €300 for EMAS members, €420 for non-members to cover lunch, coffee breaks, dinner at Jamie's Italian Restaurant.

The course is aimed at students and researchers with either no or limited experience of EPMA although some familiarity with basic SEM techniques would be beneficial.



European Microbeam Analysis Society

An Introduction to EPMA



Schedule

Monday 7th April:

11:30am *Welcome*

11:45am Lecture 1 - Overview of X-ray generation in the EPMA

12:30am (Lunch and) Oral Presentations 1

1pm *Lunch*

1:45pm Practical 1 – The Energy Dispersive Spectrum

2:45pm Oral Presentations 2

3:30pm *Coffee*

3:50pm Lecture 2 – EDS

4:50pm Breakout 1(Hands on) – X-Ray Mapping

5:30pm Pub



European Microbeam Analysis Society

Fundamentals of EPMA



Schedule

Tuesday 8th April

9:00am Review of previous evening breakout:
group A / group B / group C.

10:00am Lecture 3 WDS

11:00am Coffee

11:30am Practical 3 Wavelength Dispersive Spectrometer

12:30pm *Lunch*

2:00pm Lecture 4 - X-Ray modeling

2:45pm Practical 4 - X-Ray Modeling

3:30pm *Coffee*

3:45pm Lecture 5 – Quantitative EPMA

5:00pm Break out 2 (Hands on) TE, high res analysis

7:00pm Dinner – at a local restaurant



European Microbeam Analysis Society

Fundamentals of EPMA



Schedule

Wednesday 9th April

9:00am Review of previous evening breakout:
group A / group B / group C

10:00am Lecture 6 - Advanced EPMA

11:00am Practical 7 Cameca – TE, backgrounds etc

12:00 Practical 8 JEOL FEG- low voltage analysis

1pm Lunch. Wrap-up session. Q and A.

2pm Close



European Microbeam Analysis Society

Fundamentals of EPMA



Registration Rates

EMAS Member Rate - £250 (€300)

Non-member Rate - £400 (€480)



European Microbeam Analysis Society

Fundamentals of EPMA



Logistics

Maximum 24 Participants

- 🌐 Breakouts in groups of 8 or fewer in 3 labs (2xEPMA, 1 SEM)
- 🌐 Welcome reception, coffee/pastries
- 🌐 Buffet Lunches
- 🌐 Workshop Dinner on Tuesday
- 🌐 Pub (Monday eve).



European Microbeam Analysis Society

Fundamentals of EPMA



Host Institute

***Electron Microbeam Laboratories, School of Earth Sciences,
University of Bristol***

- 🔬 Cameca SX-100 EPMA (5WD, EDAX EDS)
 - 🔬 Hitachi S3500N SEM (Thermo EDS – SDD)
 - 🔬 JEOL JXA8530F (5WD, SDD-EDS)
 - 🔬 Preparation equipment (coaters)
 - 🔬 Small lecture room (G8 – 20m from labs)
- 🔬 4 free registrations to go to University of Bristol (included in 24)



European Microbeam Analysis Society

Fundamentals of EPMA





European Microbeam Analysis Society

Fundamentals of EPMA

An EMAS Short Course

A graduate-level Series of Lectures,
Practicals and Hands-on Exercises:

Subjects covered:

- X-ray generation
- Energy Dispersive Spectrometry
- Wavelength Dispersive Spectrometry
- X-Ray modeling
- Quantification in the EPMA
- Calibration standards
- Trace Element Analysis
- Light Element Analysis
- Field Emission EPMA

Course Tutors:

- Mike Matthews (AWE, Aldermaston)
- Stuart Kearns (University of Bristol)
- Xavier Llovet (University of Barcelona)
- Jon Wade (University of Oxford)
- Ben Buse (University of Bristol)

Cost: £250 for EMAS members
£400 for non-members
(membership available at registration)

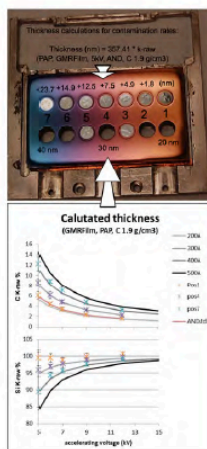
Course is limited to 24 participants. Please visit www.emas-web.net or
contact Stuart.Kearns@bris.ac.uk for full details

School of Earth Sciences, University of Bristol, UK

7th - 9th April 2014



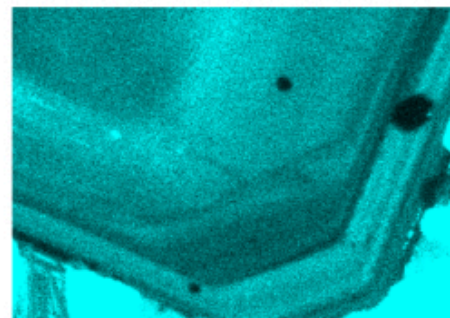
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Fundamentals of EPMA

An EMAS Short Course



7th-9th April 2014

University of Bristol, UK



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