



Short Course on the Application of Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) to Earth Sciences

Day 1

9.45-10.00 Maurizio Petrelli (University of Perugia): Welcome to the attendees and Course Introduction

Day 1 - Morning session: Theory - principles of LA-ICP-MS

10.00-11.00 Dhinesh Asogan (Thermo Fisher Scientific): Principles of Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

11.00-11.30 Coffee Break

11.30-12.30 Ciprian Stremtan (Teledyne-Photon Machine): Principles of Laser Ablation (LA) Sampling for Earth Science Applications

12.30-13.00 Maurizio Petrelli (University of Perugia): Coupling LA and ICP-MS, an introduction and some practical tips

Day 1 Afternoon session: Practicals - Familiarization with the LA-ICP-MS in the lab

14.30-16.00 GROUP A

Dhinesh Asogan (Thermo Fisher Scientific): Familiarization with the ICP-MS

Ciprian Stremtan (Teledyne-Photon Machine): Familiarization with the LA system

16.00-17.30 GROUP B

Dhinesh Asogan (Thermo Fisher Scientific): Familiarization with the ICP-MS

Ciprian Stremtan (Teledyne-Photon Machine): Familiarization with the LA system

14.30-16.00 GROUP B Francesco Vetere (University of Perugia): Visit to the sample preparation Facility and to the other Labs of the PVRG group

16.00-17.30 GROUP A Francesco Vetere (University of Perugia): Visit to the sample preparation Facility and to the other Labs of the PVRG group



Day 2

Day 2 Morning session: Theory – Application of LA-ICP-MS to petrological studies

9.00-10.00 Maurizio Petrelli (University of Perugia): Data reduction in LA-ICP-MS for trace element single spot analysis

10.00-11.00 Dhinesh Asogan (Thermo Fisher Scientific): Triple LASS: U-Pb, Hf and REE from a single crater

11.00-11.30 Coffee Break

11.30-13.00 Focus group - Chairman: Daniele Morgavi (University of Perugia) Oral presentations by the attendees.

Day 2 Afternoon session: Practicals – Prepare and Run LA-ICP-MS experiments

14.30-16.00 GROUP A Maurizio Petrelli (University of Perugia): a) Prepare and tune the LA-ICP-MS instrumentation a) Check the LA-ICP-MS performances c) Prepare and run automated experiments by LA-ICP-MS

16.00-17.30 GROUP B Maurizio Petrelli (University of Perugia): a) Prepare and tune the LA-ICP-MS instrumentation a) Check the LA-ICP-MS performances c) Prepare and run automated experiments by LA-ICP-MS

Day 2 Afternoon session: Theory and Practicals – LA-ICP-MS in practice

14.30-16.00 GROUP A

Diego Gonzales Garcia (University of Perugia) - Application of LA-ICP-MS in the study of chemical diffusion in natural volcanic glasses: challenges and achievements.

Teresa Ubide (University of Queensland, Australia) - Rebecca Astbury (University of Perugia): Introduction to IOLITE™

16.00-17.30 GROUP B

Diego Gonzales Garcia (University of Perugia) - Application of LA-ICP-MS in the study of chemical diffusion in natural volcanic glasses: challenges and achievements.

Teresa Ubide (University of Queensland, Australia) - Rebecca Astbury (University of Perugia): Introduction to IOLITE™



Day 3

Day 3 Morning session: Theory - Elemental imaging by LA-ICP-MS

9.00-10.00 Ciprian Stremtan (Teledyne-Photon Machine): Elemental imaging by LA-ICP-MS and its applications in geological problems

10.00-11.00 Teresa Ubide (University of Queensland, Australia): Volcanic crystals as time capsules of eruption history: LA-ICP-MS trace element mapping of igneous minerals

11.00-11.30 Coffee Break – in front of the posters

11.30-12.00 Rebecca Astbury (University of Perugia): Application of LA-ICP-MS trace element mapping to unravel dynamics and evolution of volcanic plumbing systems.

12.00-13.00 Focus group - Chairman: Daniele Morgavi (University of Perugia) Oral presentations by the attendees.

Day 3 Afternoon session: Practicals - Data Reduction in LA-ICP-MS imaging

14.30-16.30 Teresa Ubide (University of Queensland, Australia) - Ciprian Stremtan (Teledyne-Photon Machine): LA-ICP-MS Data reduction for trace element imaging

Sincerely,

Maurizio Petrelli