

## **Fluid Inclusions Study: Principles and Applications**

**The Jacques Touret legacy**

### **WORKSHOP**

**ECROFI – WRI Meetings**

**Torino, 27-29 June 2025**

Fluid inclusions provide crucial insights into geological processes, from high temperatures and pressures deep within the Earth to lower temperatures near the surface. This workshop is designed to introduce the study of fluids in rocks, following the scientific approach pioneered by Jacques Touret in his studies on aqueous and on carbonic fluid inclusions. It will cover examples of fluids related to magmatic, metamorphic, and ore deposit contexts, with particular focus on C cycle. This workshop suits all Earth scientists - students or professionals - who have not yet explored fluid inclusions but wish to incorporate this topic into their future research.

### **PROGRAM**

#### **Day 1 – 27<sup>th</sup> June 2025**

8.30 – 9.30 Registration

9.30 – 10.00 Introduction (All)

*Presentation of the course and teachers, Historical notes, including some words on the work of Jacques Touret*

*10.00 - 10.30 Presentation of Participants.*

10.30 – 13.00 Fluid Inclusion classification (Alfons van den Kerkhof)

*13.00 – 14.30 Lunch*

14.30 – 16.00 Petrographic Studies of fluid Inclusions (Maria Luce Frezzotti)

16.00 – 17.30 Microthermometry (Alfons van den Kerkhof)

#### **Day 2 – 28<sup>th</sup> June 2025**

9.00 – 11.00 Thematic – Melt inclusions in metamorphic minerals (Silvio Ferrero)

*11.00 - 11.30 Coffee break*

11.30 – 13.00 Introduction to thermodynamics of fluid systems (Maria Luce Frezzotti)

*12.30 – 14.00 Lunch*

14.00 – 15.30 Isochores calculation (Jan Marten Huizenga)

15.30 – 16.30 Thematic – Significance of fluid and melt inclusions to understand igneous processes (Eniko Bali)

16.30 – 17.00 Coffee break

17.00 – 18.00 Thematic – Fluid inclusions in ore deposits (Pilar Lecumberri Sanchez)

### **Day 3 – 29<sup>th</sup> June 2025**

9.00 – 11.00 Raman Spectroscopy (Maria Luce Frezzotti)

*11.00 - 11.30 Coffee break*

11.30 – 13.00 Thermodynamic modelling of COH fluids (Jan Marten Huizenga)

*12.30 – 14.00 Lunch*

14.00 – 15.30 Thematic - Fluids in the lower crust and upper mantle (Maria Luce Frezzotti)

15.30 – 17.00 Microscopy class – demonstration (All)

17.00 – 17.30 Final discussion (All)

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