



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

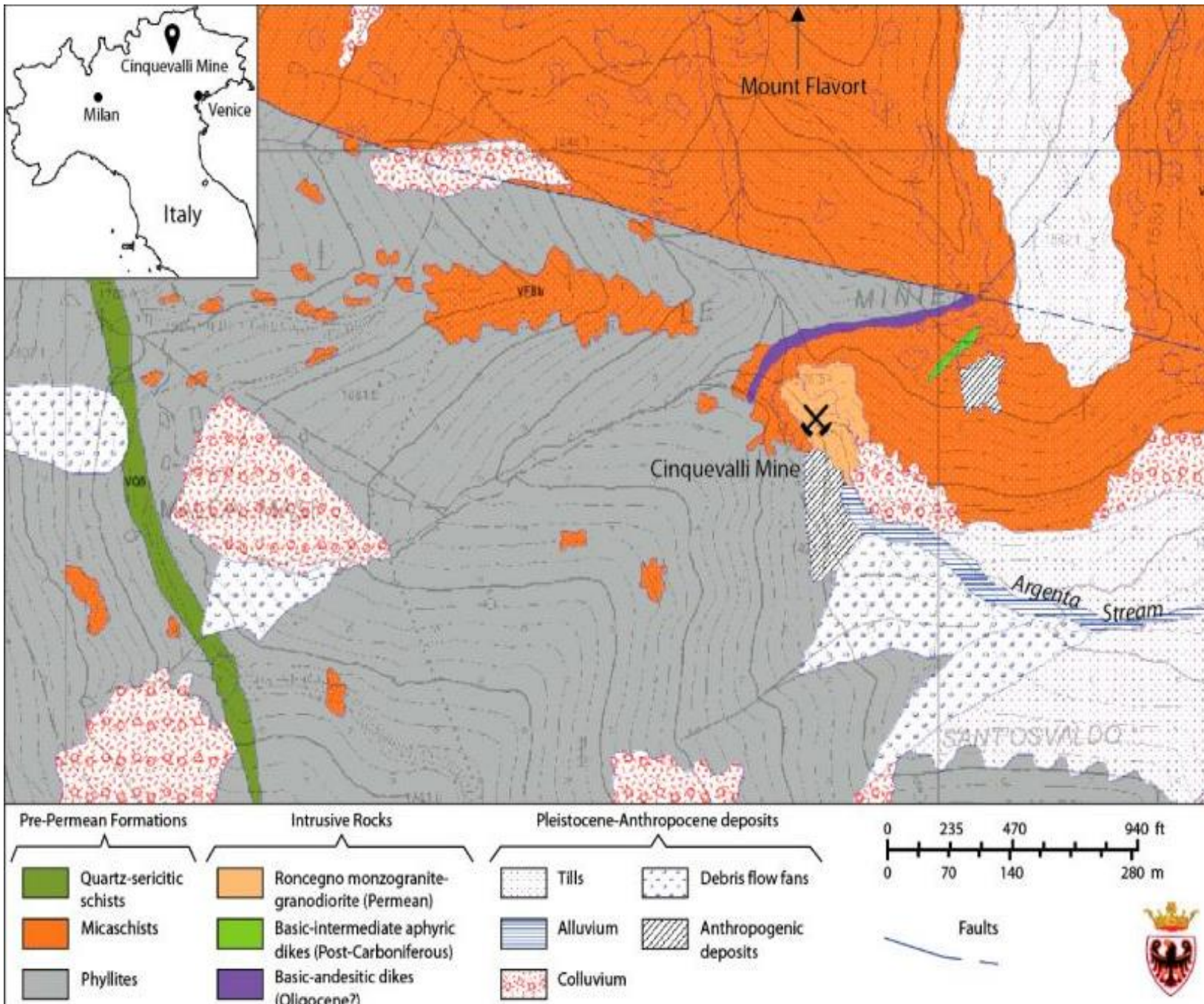
Corso di laurea *Triennale* in Scienze Geologiche

**CARATTERIZZAZIONE DELLA FLUORITE DI CINQUEVALLI
MEDIANTE TECNICHE MICROSCOPICHE**

Laureando: DANIELE NALESSO

Matricola N: 1164643

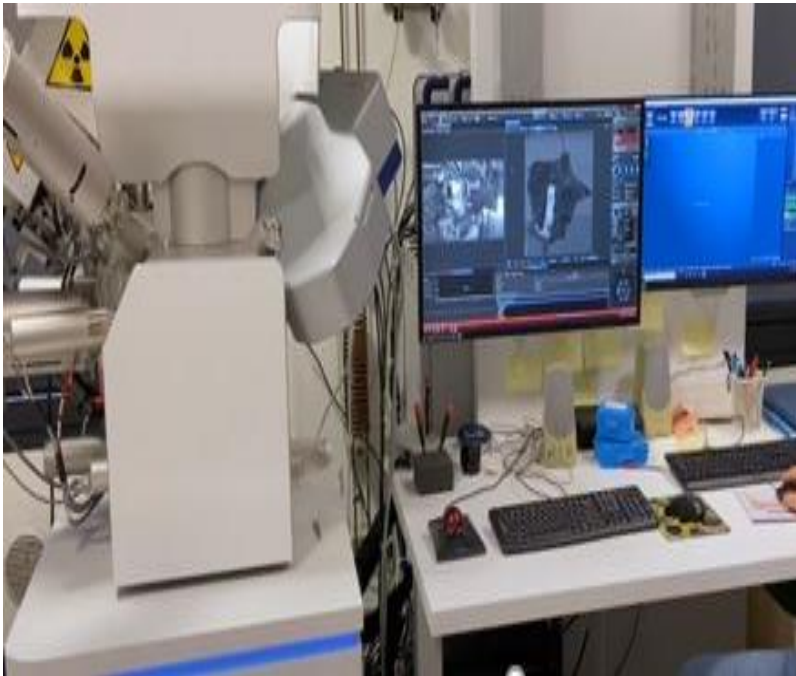
Relatrice: Prof.ssa MARIA CHIARA DALCONI



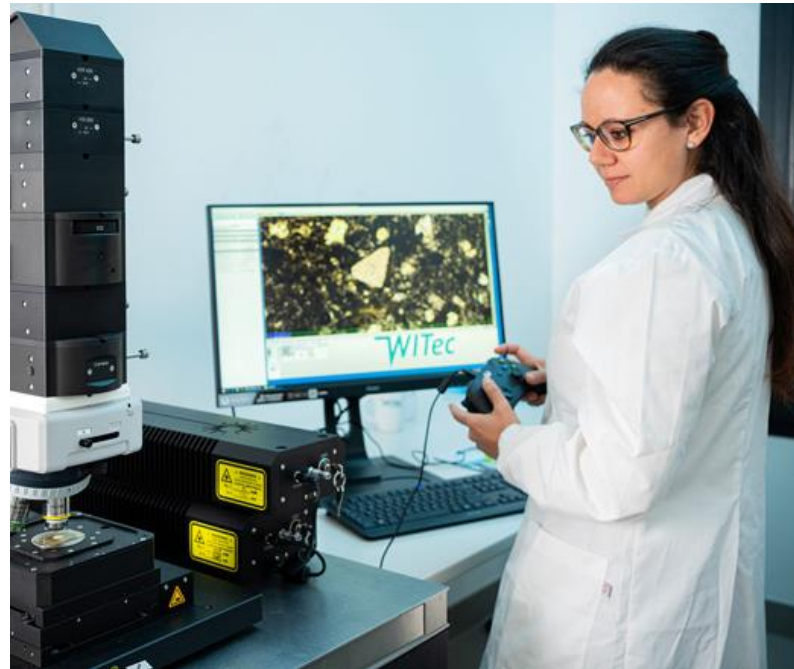
1. Capitani, G., 2020. Synchysite-(Ce) from Cinquevalli (Trento, Italy): Stacking Disorder and the Polytypism of (Ca,REE)-Fluorcarbonates. *Minerals* 10, 77.

QUALI SONO GLI STRUMENTI UTILIZZATI PER LA CARATTERIZZAZIONE DELLA FLUORITE

FEG-SEM TESCAN SOLARIS
15KeV, 3nA



RAMAN WITEC ALPHA
300R + Zeiss Microscope



Microscopio ottico con fotocamera ed
apparato «Cold Cathod Luminescence
8200 mk3





Figura 1 - Monocristallo di Fluorite "Fluorite Big"



Figura 2 - Fluorite in associazione a Quarzo "Fluorite Small"

Analisi in microscopia elettronica – immagini BSE, CL e microanalisi puntuale EDS

BSE

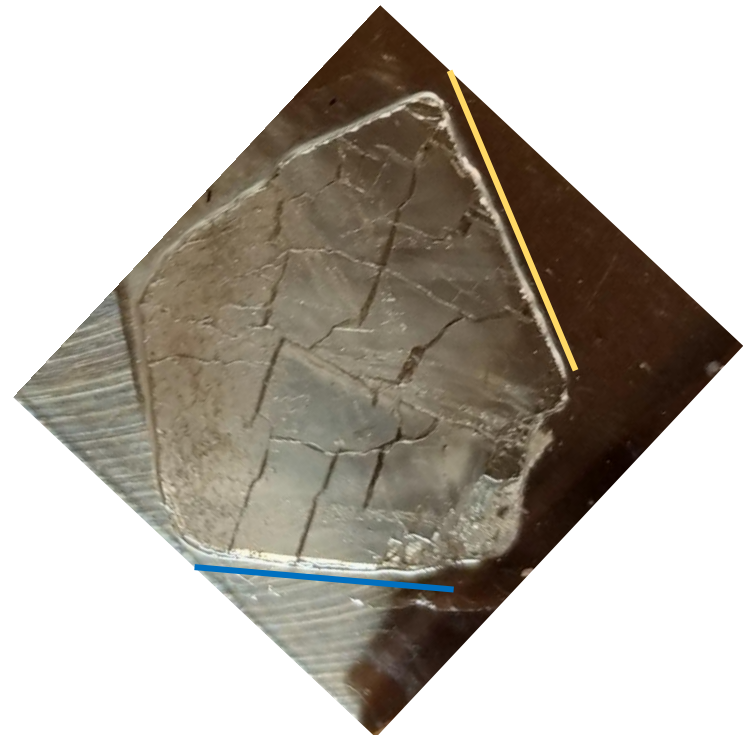
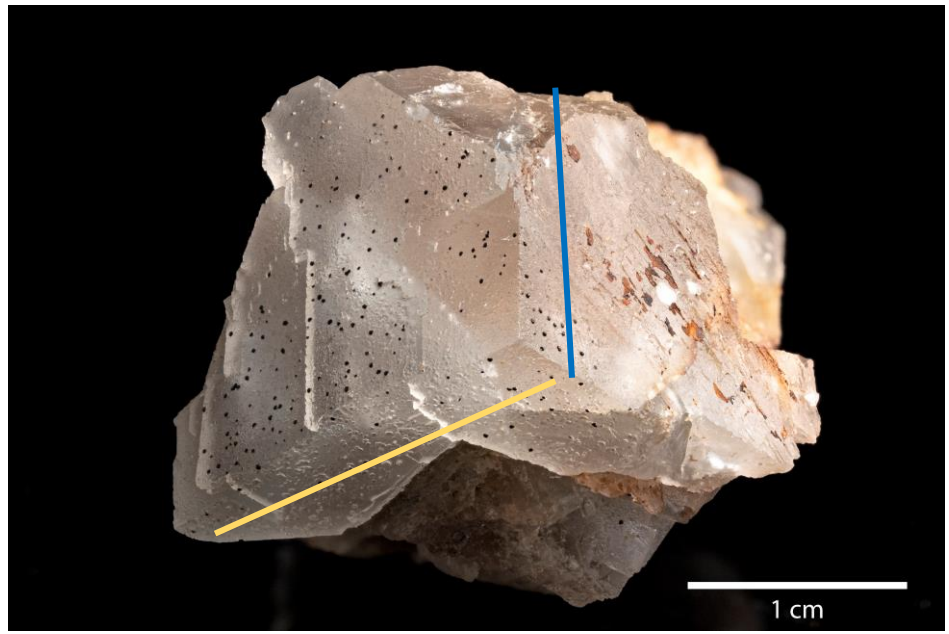
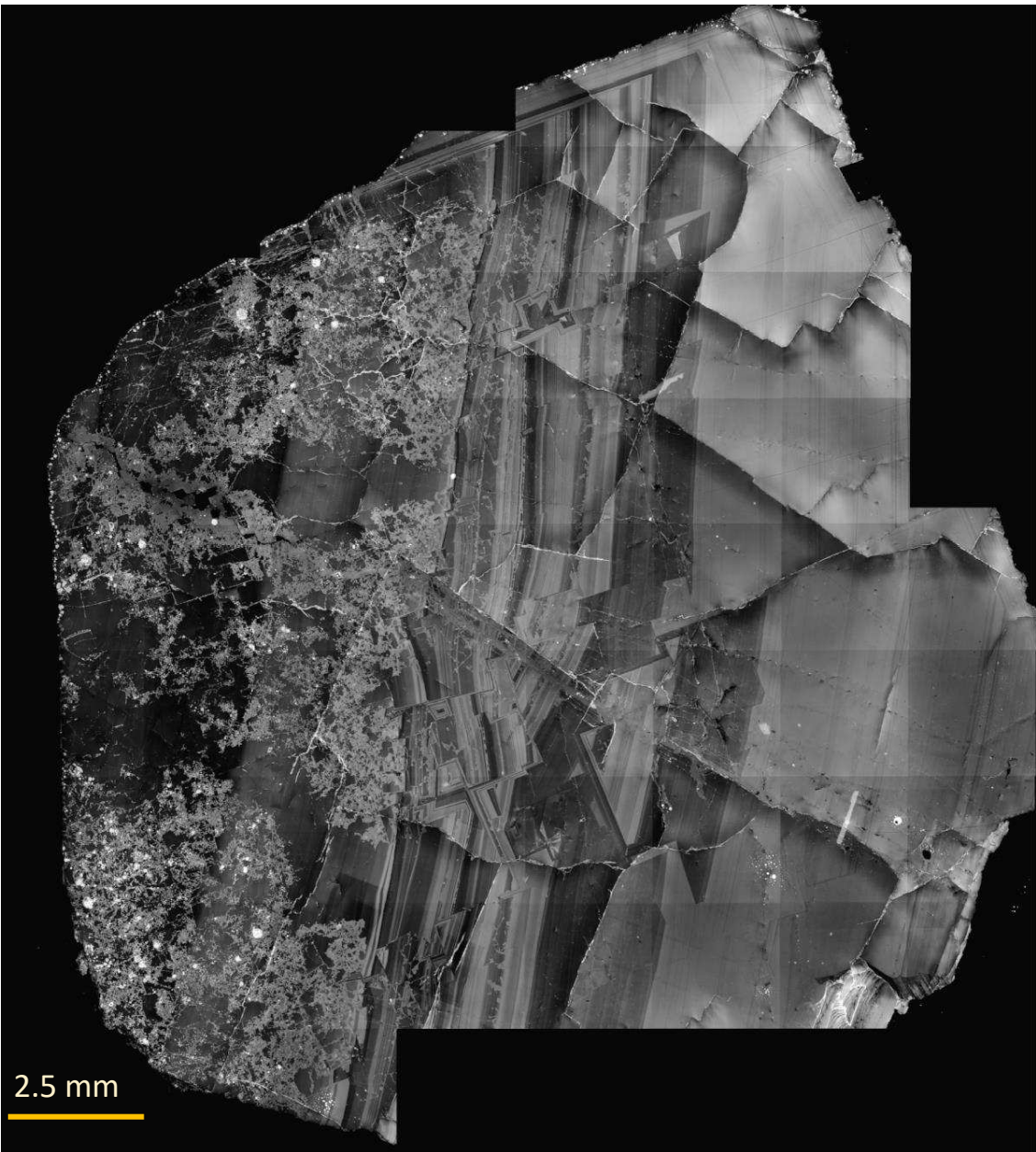
Fluorite big

CL

2.5 mm

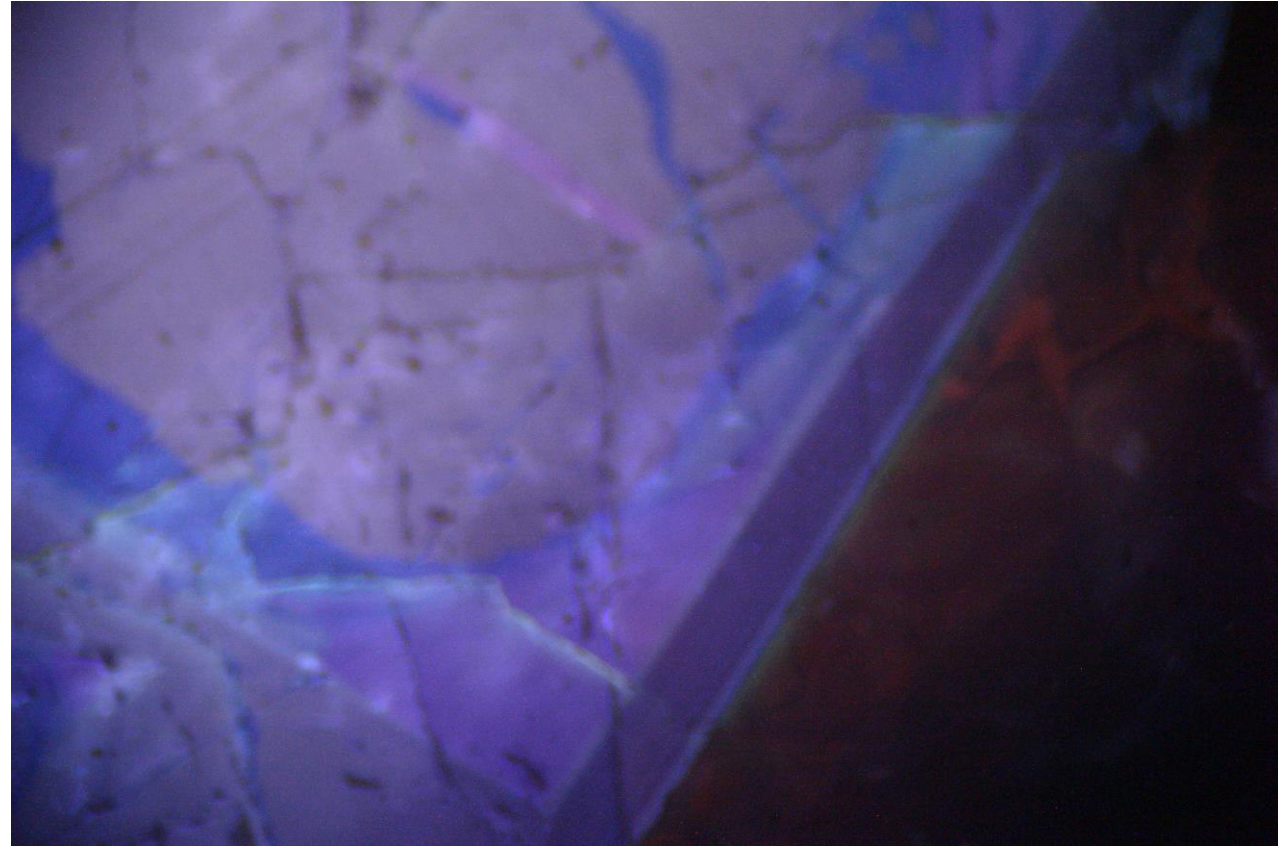
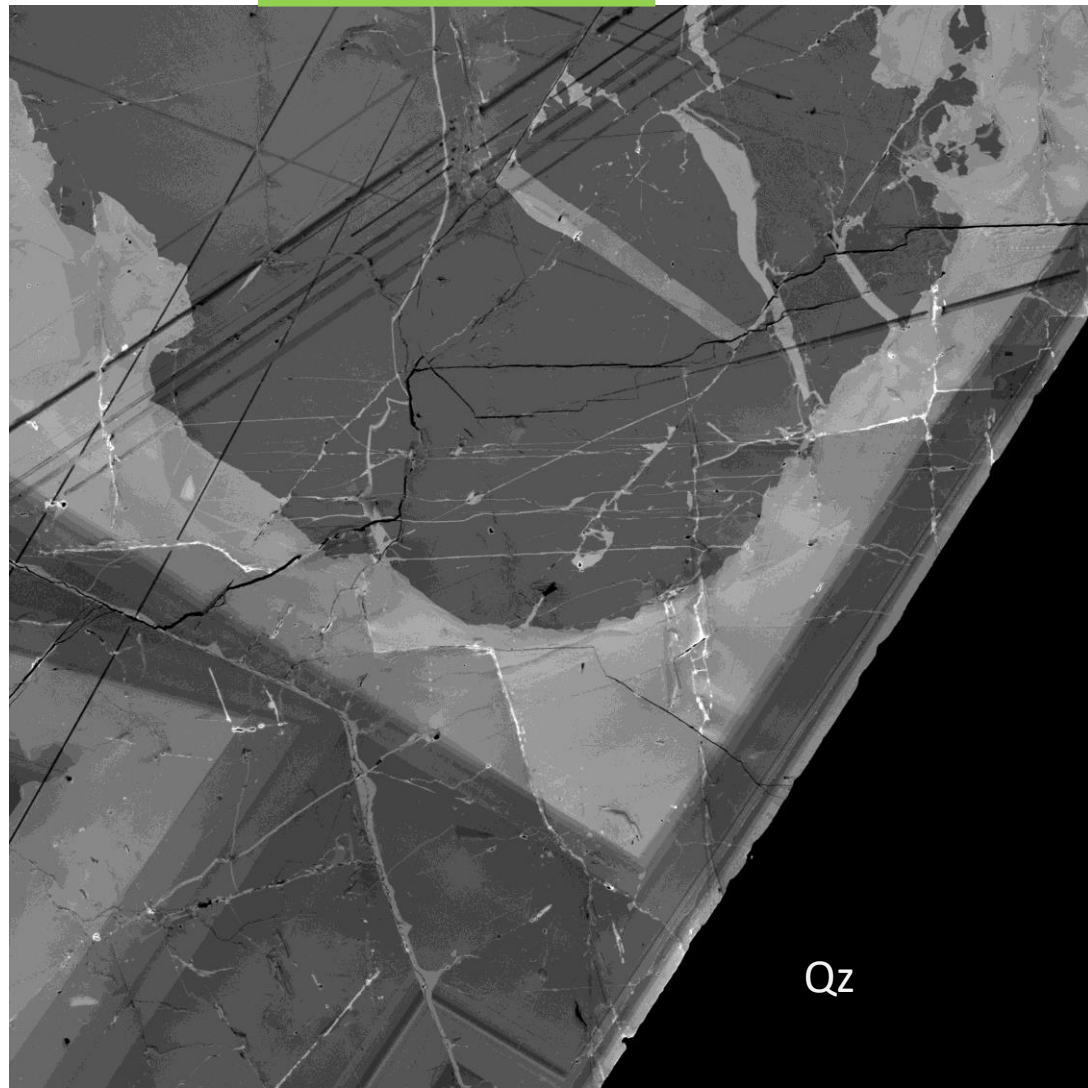
2.5 mm

2.5mm





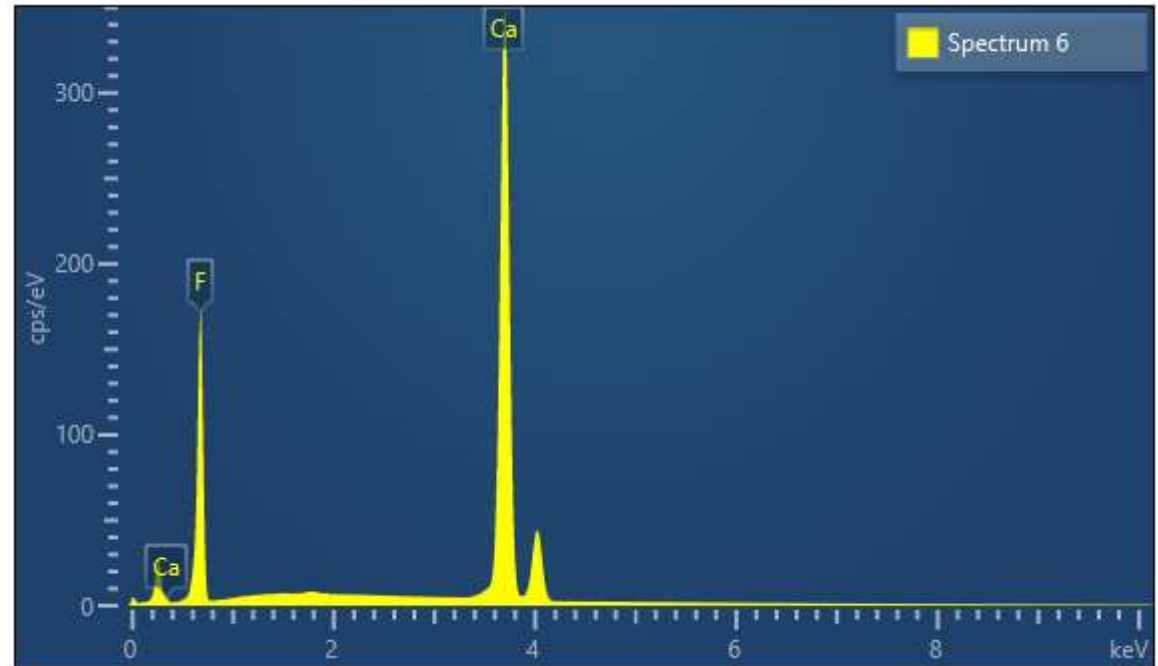
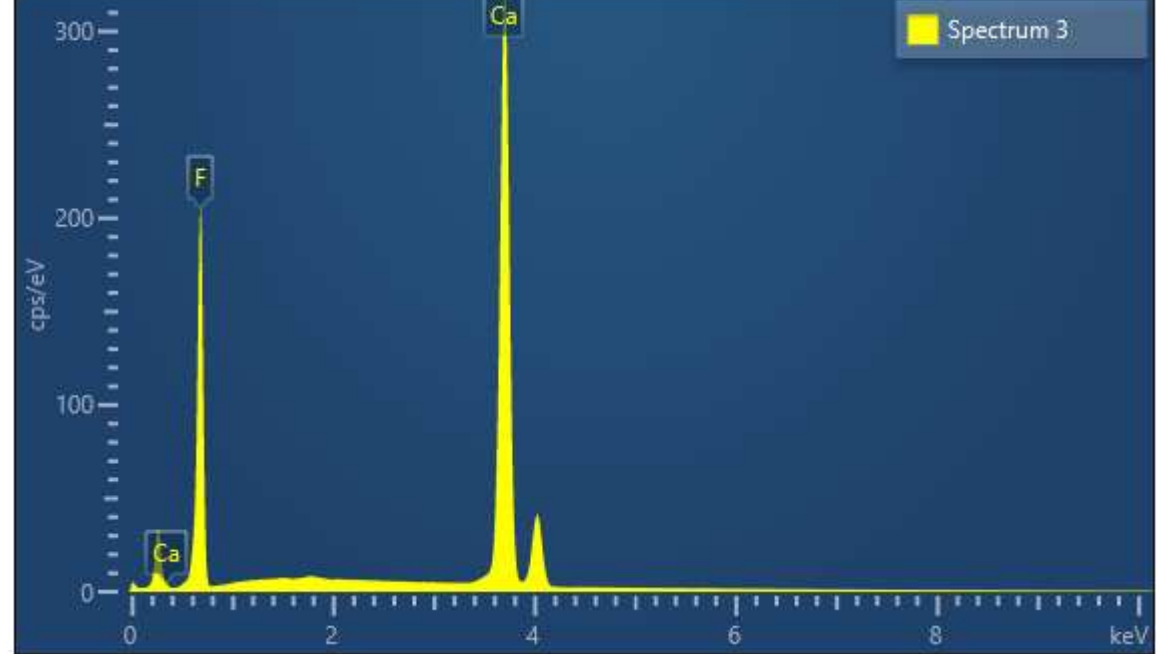
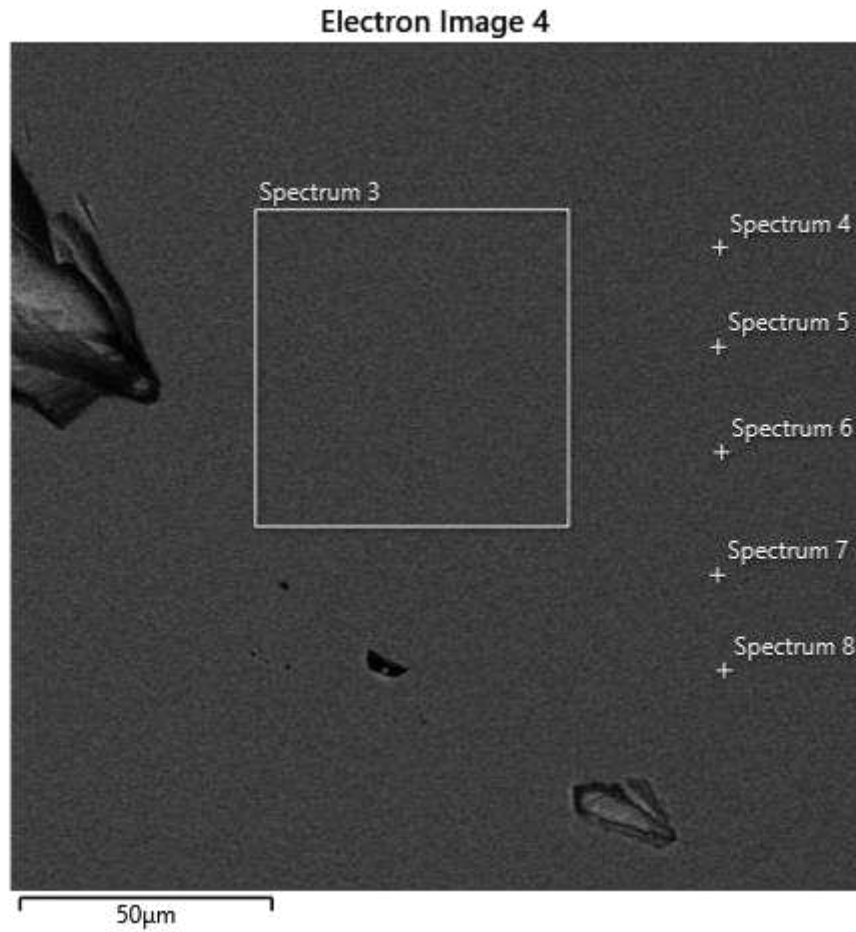
Fluorite small



	Mag 261 x	FoV 2.67 mm	WD 20.24 mm	500 μ m
BC 3 nA	Det CL	Energy 15 keV		Spot size 14.4 nm

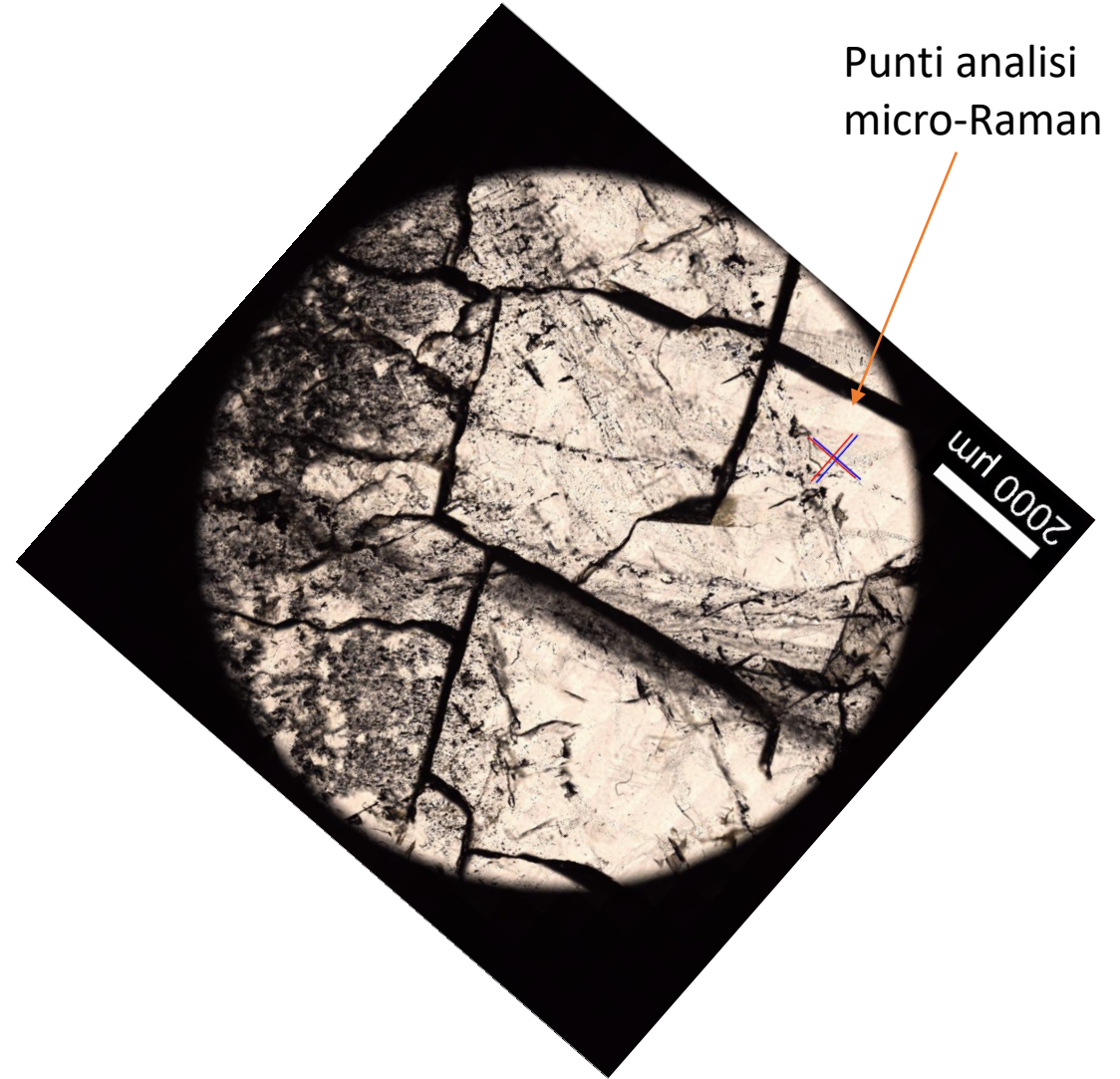
Immagine ottenuta utilizzando un microscopio ottico con fotocamera ed apparato «cold Cathod Luminescence 8200 mk3»
condizioni di analisi: 20 kV and 120 nA

Fluorite big

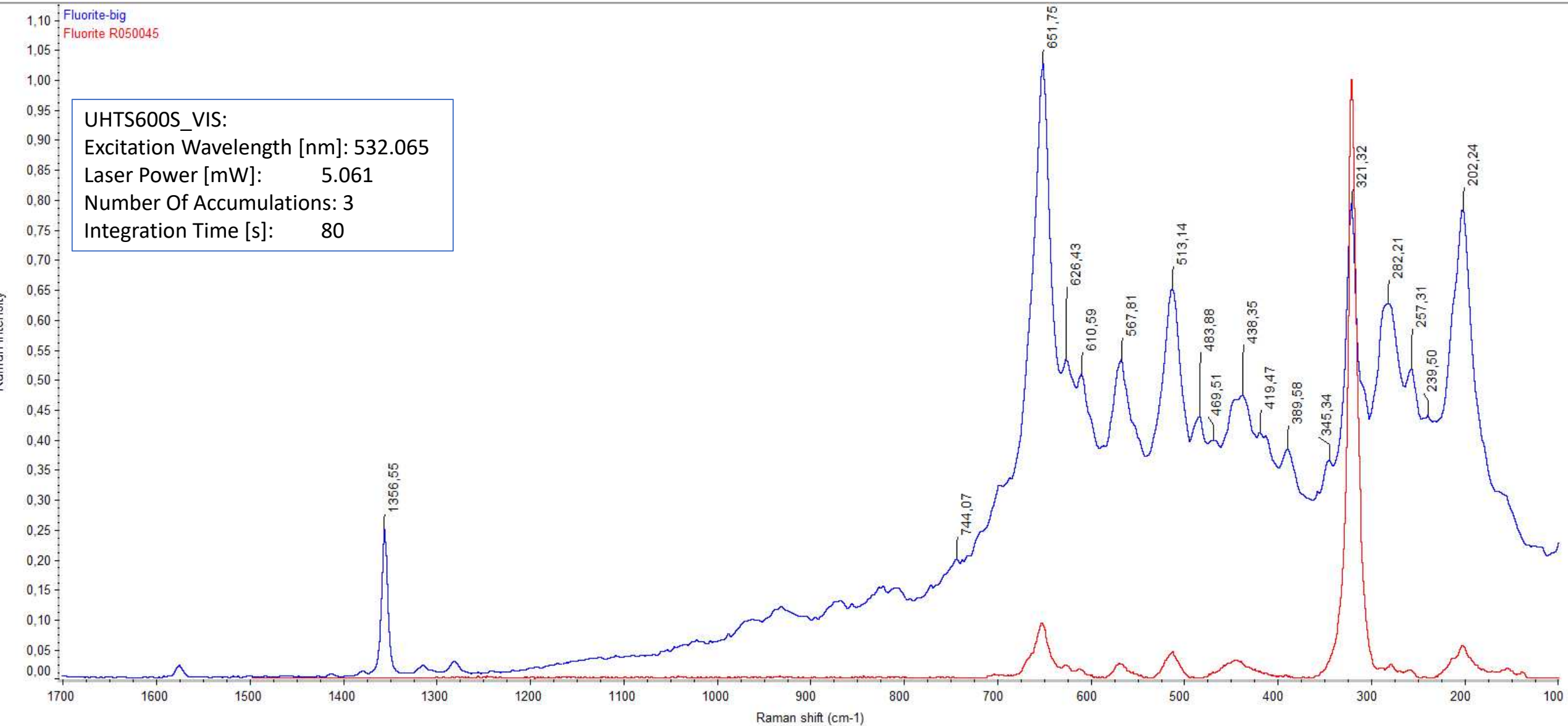


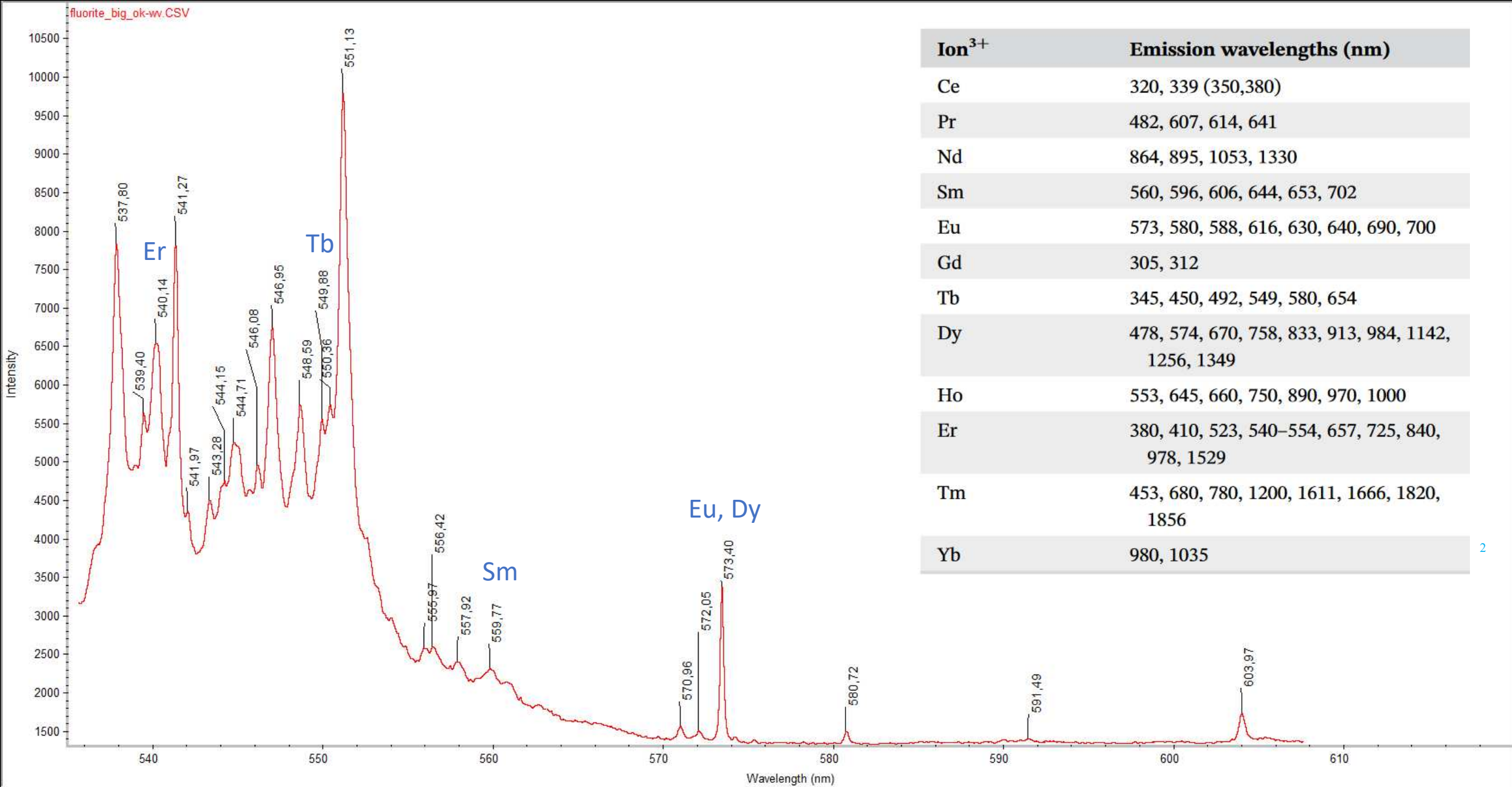
Composizione in elementi: Ca, F; le terre rare sono in concentrazione inferiore al limite di rilevabilità della misura

Analisi micro-Raman



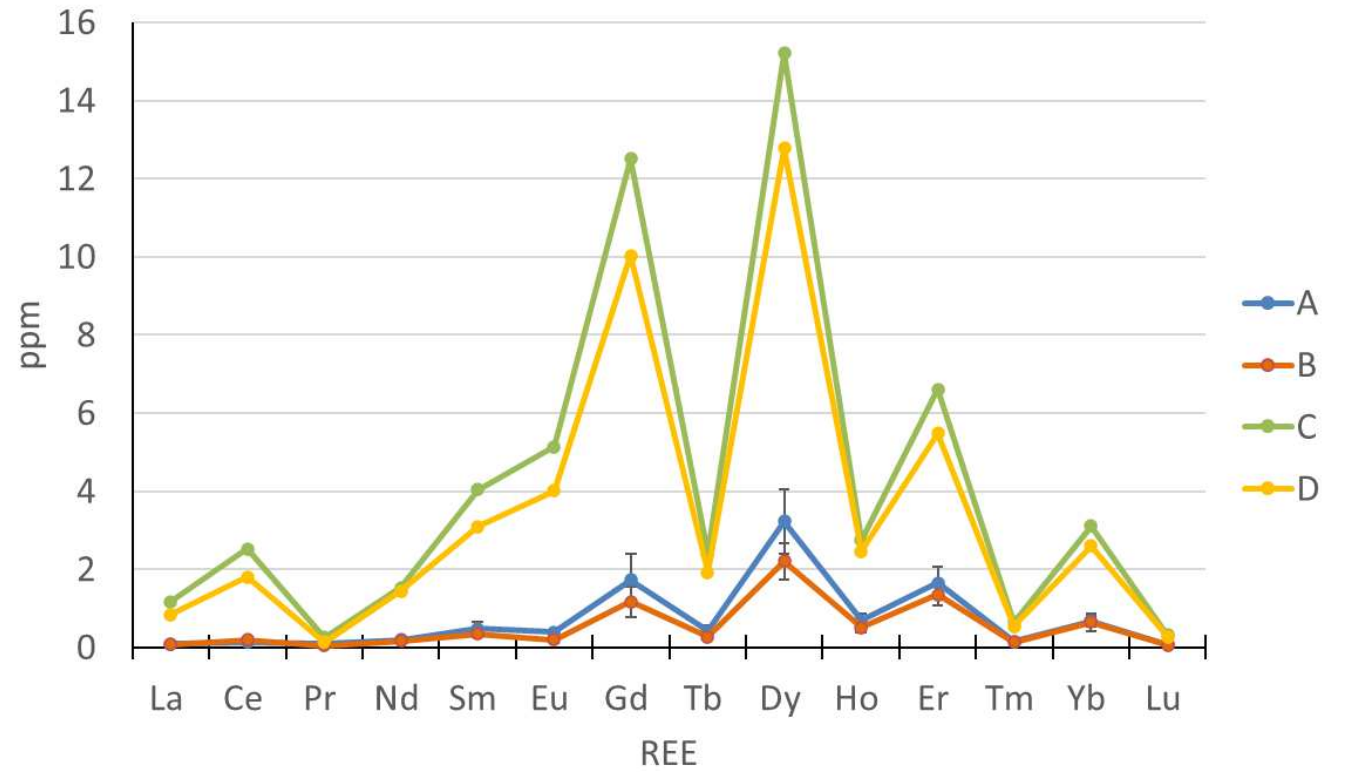
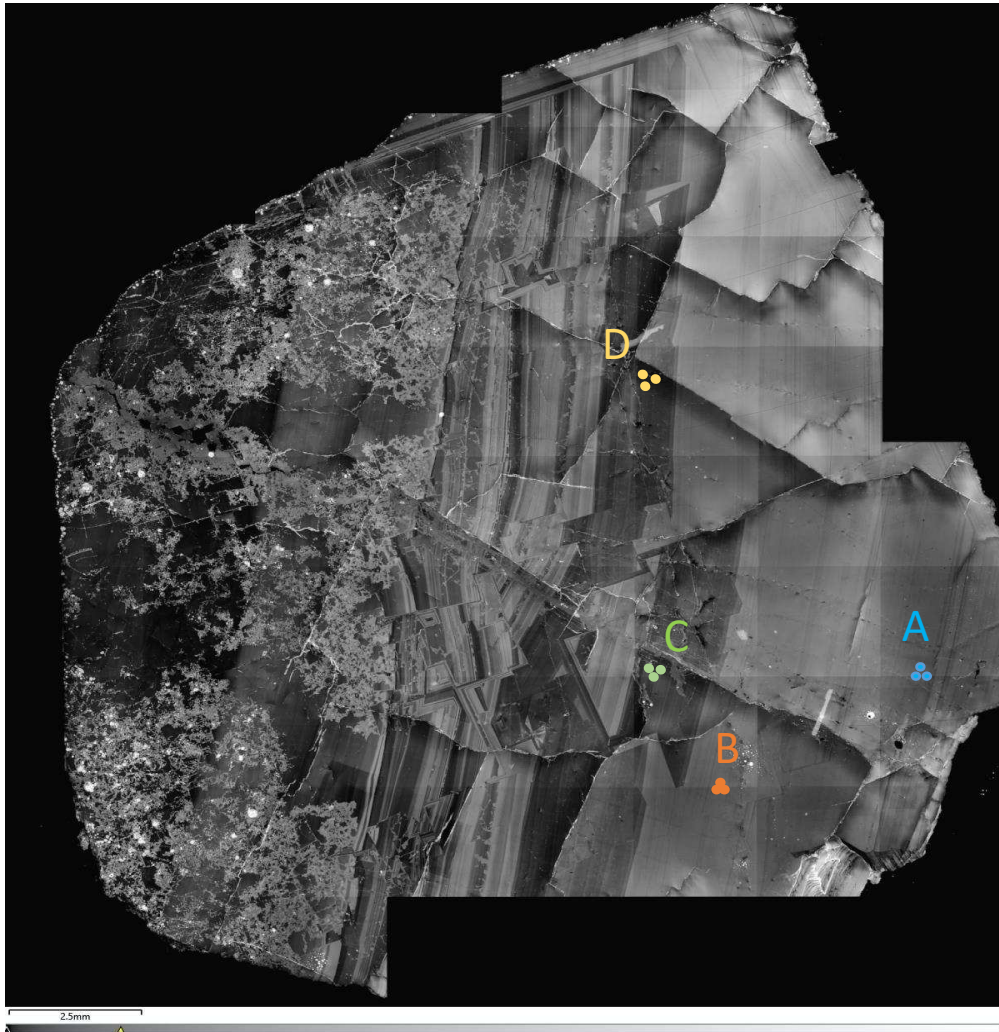
Spettro Raman del campione Fluorite big a confronto con spettro RRuff R050045

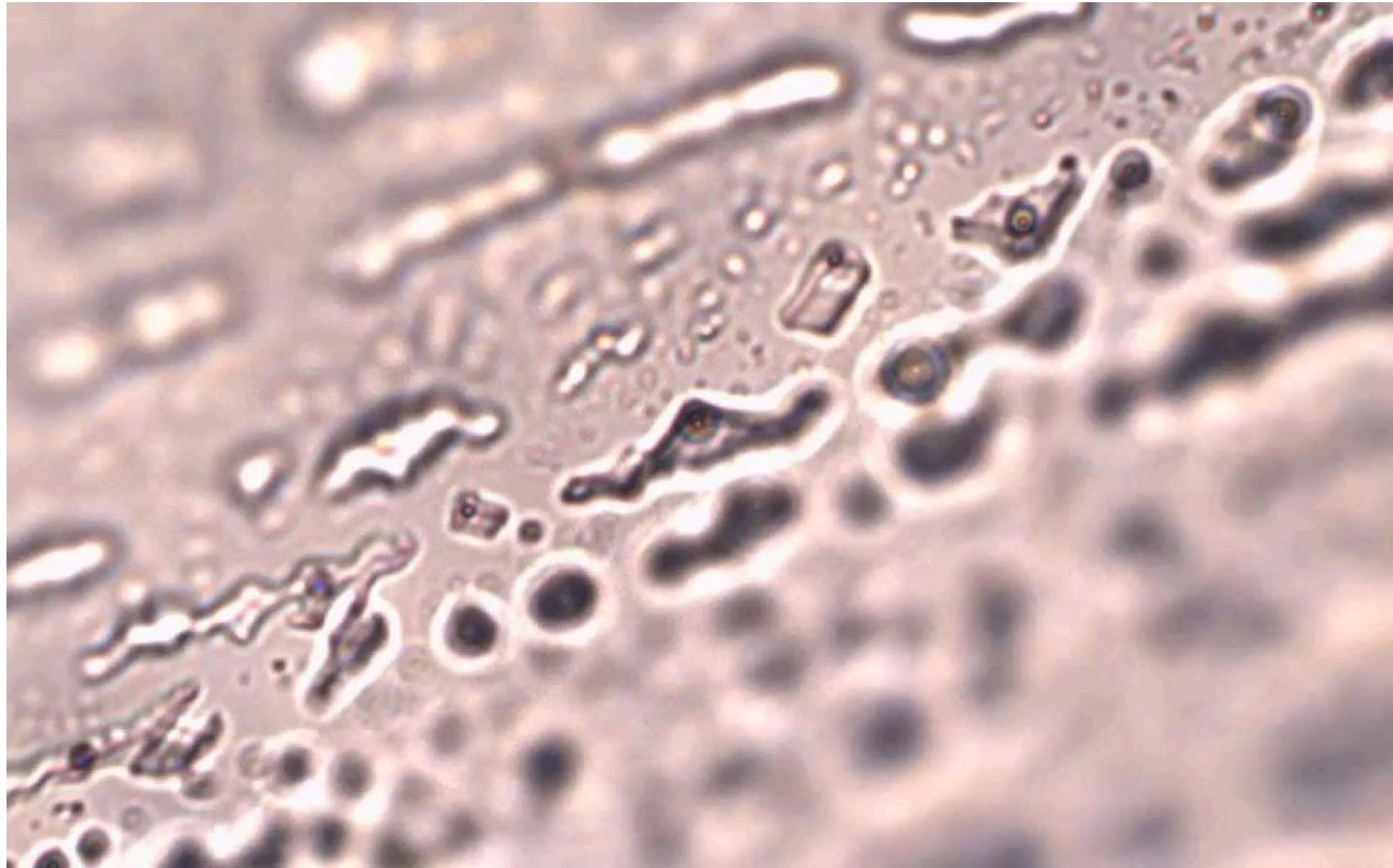


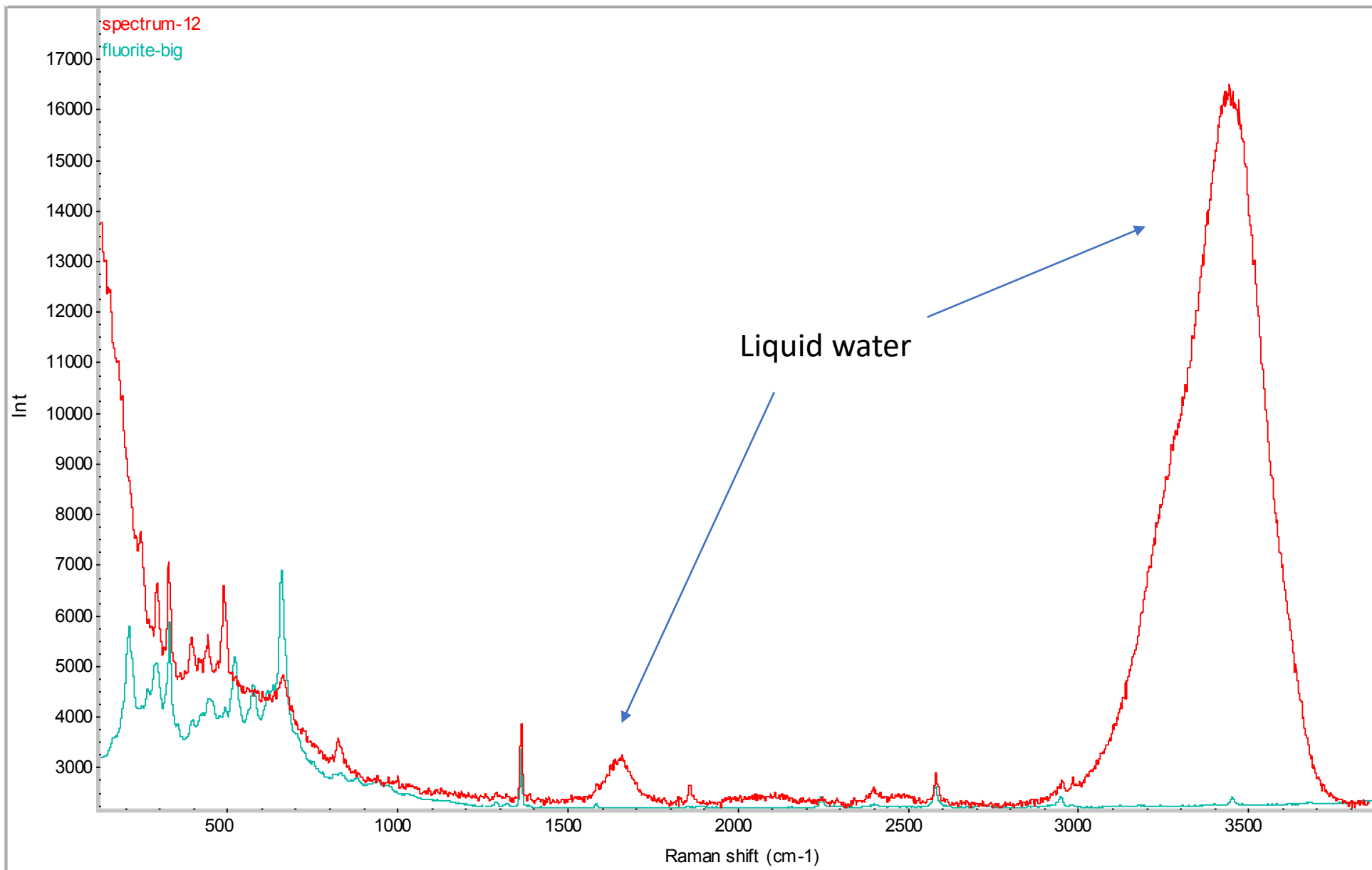


LA-ICP-MS

Laser 213 nm, spot size 80 μm , dwell time 40 s





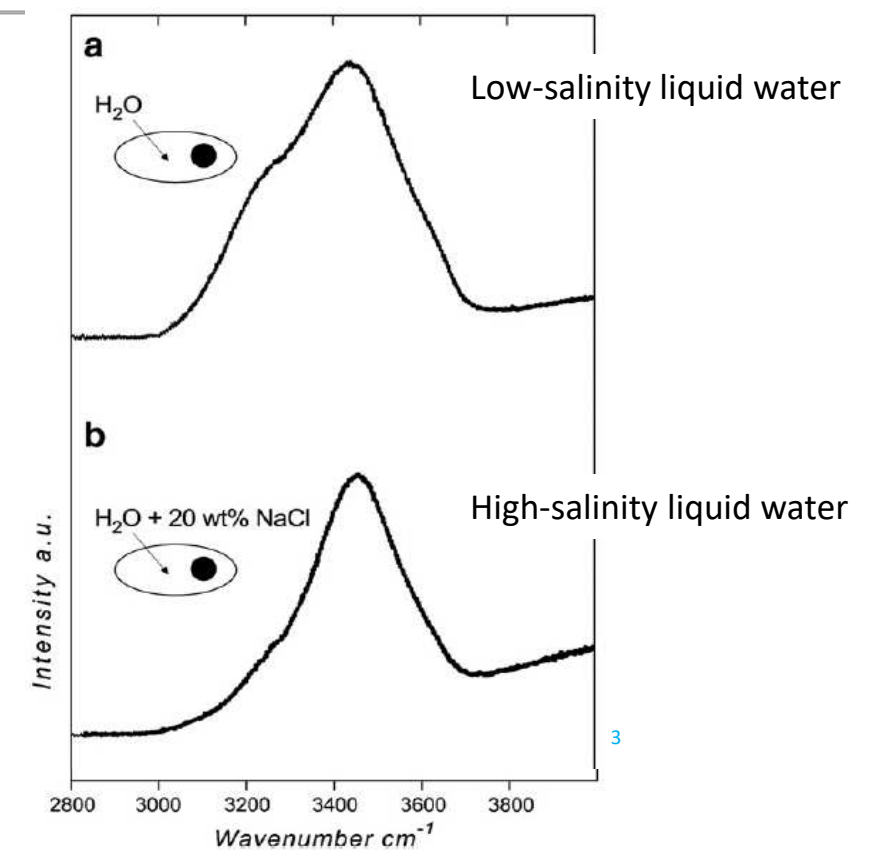
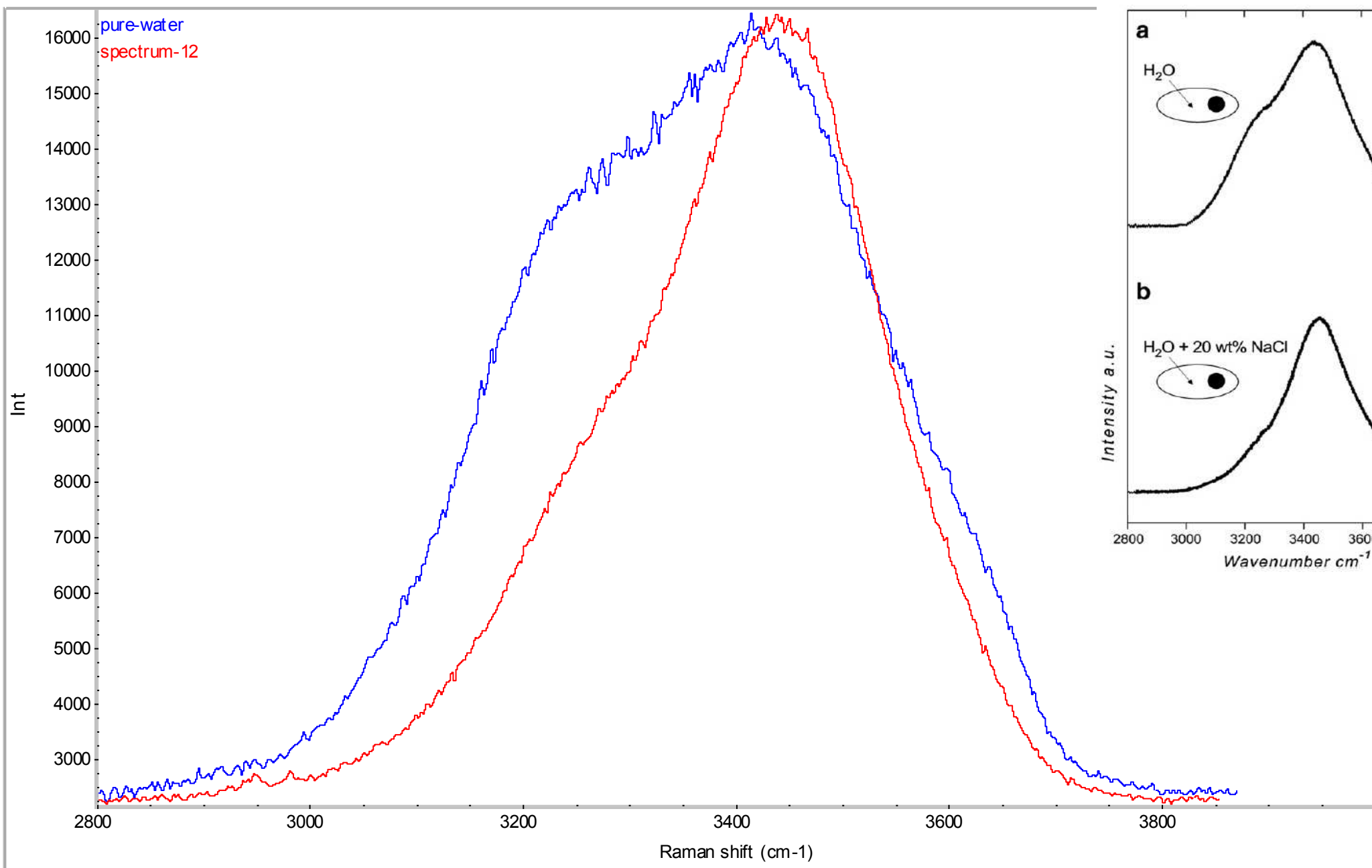


Fluid inclusions

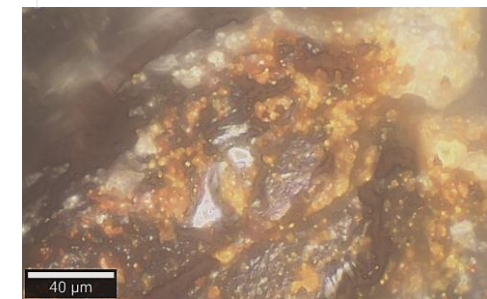
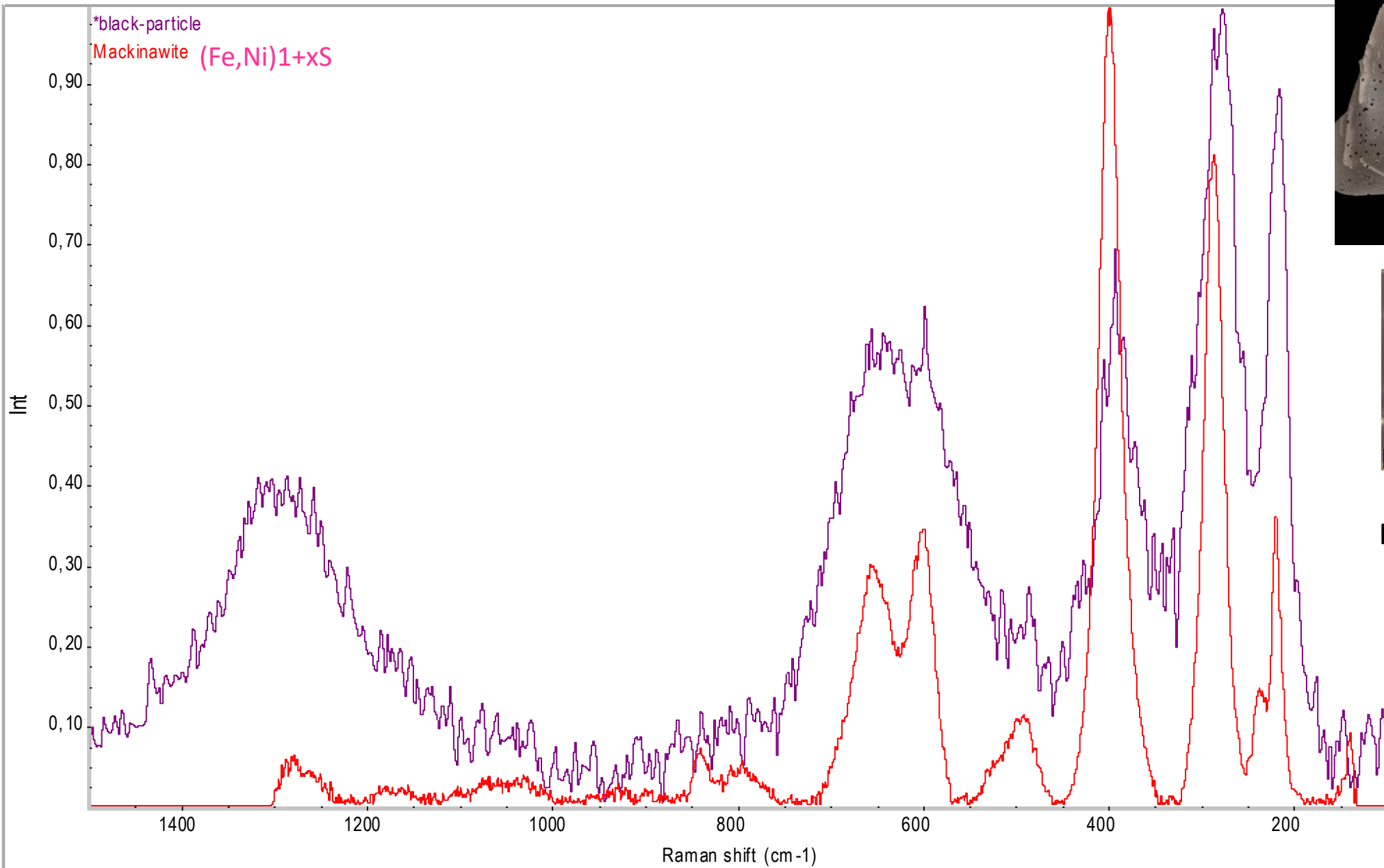


0,5 mm

the Raman spectrum of liquid H₂O consists of several large overlapping bands in the OH stretching region from 2750 to 3900 cm⁻¹ and of a weak bending mode at ~1630 cm⁻¹



0,5 mm



Black «spots» on fluorite

CONCLUSIONI

Campioni di fluorite da un filone secondario del distretto minerario Cinquevalli

1. Rilevata presenza di terre rare (REE)
2. Rilevata presenza d'inclusioni fluide
3. Confermata presenza del minerale MACKINAWITE
4. Possibilità future di approfondire lo studio mediante microtermometria

