

Raman Detector – The Cheapest Way Updating Your Research Microscope To In-situ Raman Microprobe

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Introduction

GeoRaman microscope or microprobe is powerful tool for geology study. There are lots of Raman microscope system in the world. The famous brands are listed as follows, but not all of them:

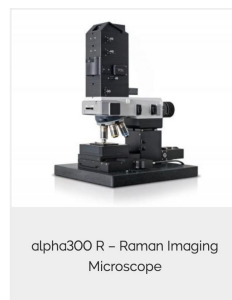
1. Horiba
2. Renishaw
3. Thermo Fisher
4. Bruker
5. Wetec



HORIBA
Scientific

RAMAN MICROSCOPE
XPLORAT™PLUS

- for analysis
- confocal
- benchtop



RENISHAW

RAMAN MICROSCOPE
INVIA™

- for surface inspection
- confocal
- benchtop



ThermoFisher
SCIENTIFIC

RAMAN MICROSCOPE
THERMO SCIENTIFIC™ DX...

- laboratory
- 3D
- confocal



BRUKER

RAMAN MICROSCOPE
SENTERRA II

- for quality control
- confocal
- compact

i-NOV
AWARD
DISCOVER



Advantages

- 1. Very powerful*
- 2. Many functions*
- 3. Unlimited lasers could be selected*

Thinking for some applications

- 1. Price? Expensive*
- 2. Environment? Special requirement—
temperature, light, vibration...*
- 3. Function? Complex function is need,
some functions never be used*
- 4. Microscope? Powerful enough*

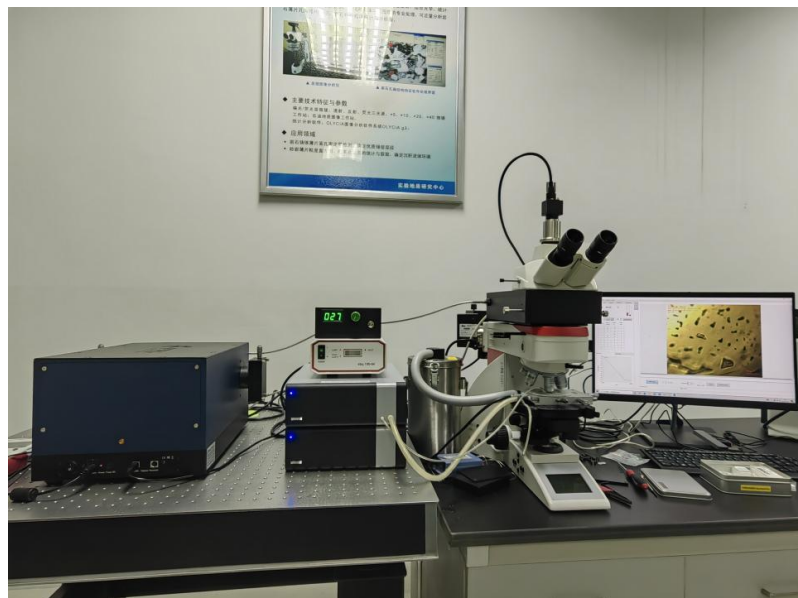


Available to all of people

— *Ideas come from*

- 1. Back to basic of Raman function – Raman spectrum identification*
- 2. Easy use – easily changing from microscopic examination to Raman measurement*
- 3. No special environment required – just microscope environment required*
- 4. Not very expensive – suited for small lab or individual person study*
- 5. Compact design – Small solid lasers and suited for most applications, like 532nm laser*

What we have down

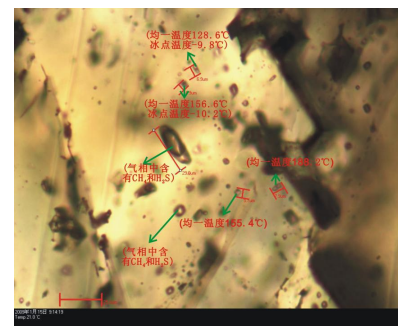


532nm Fluid Inclusion thermometry microprobe

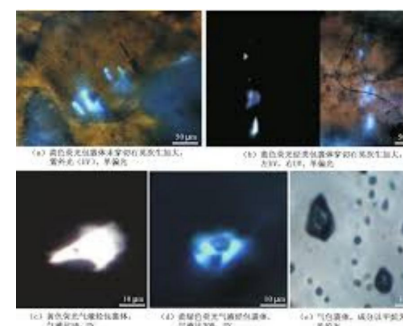


Heating Stage for FI

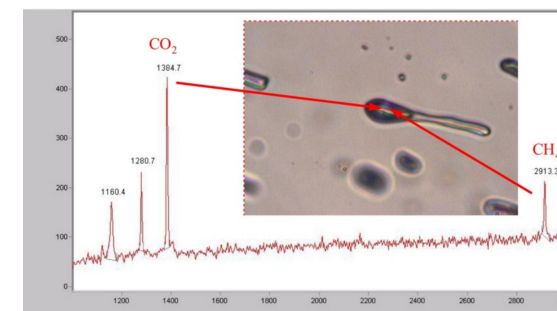
Visual light



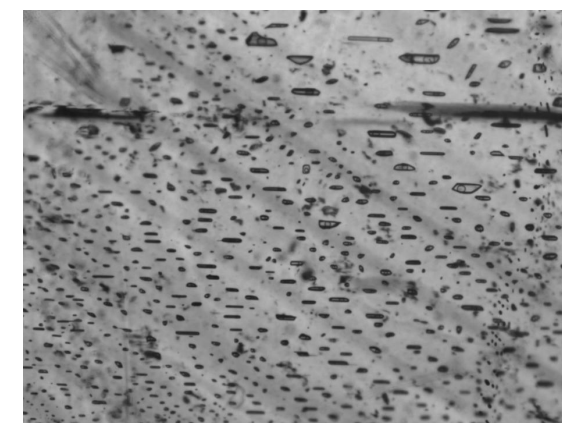
UV light



532nm Raman



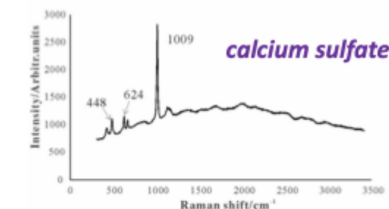
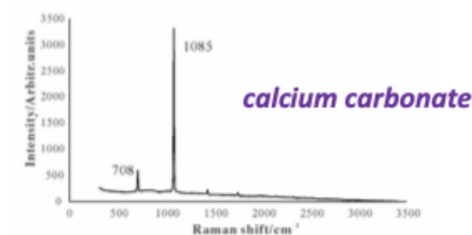
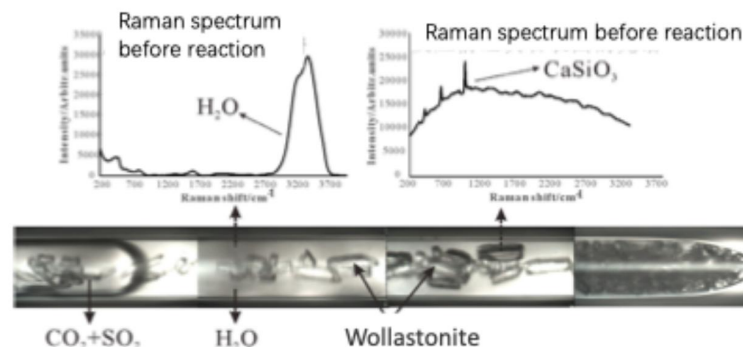
IR light



What we have down

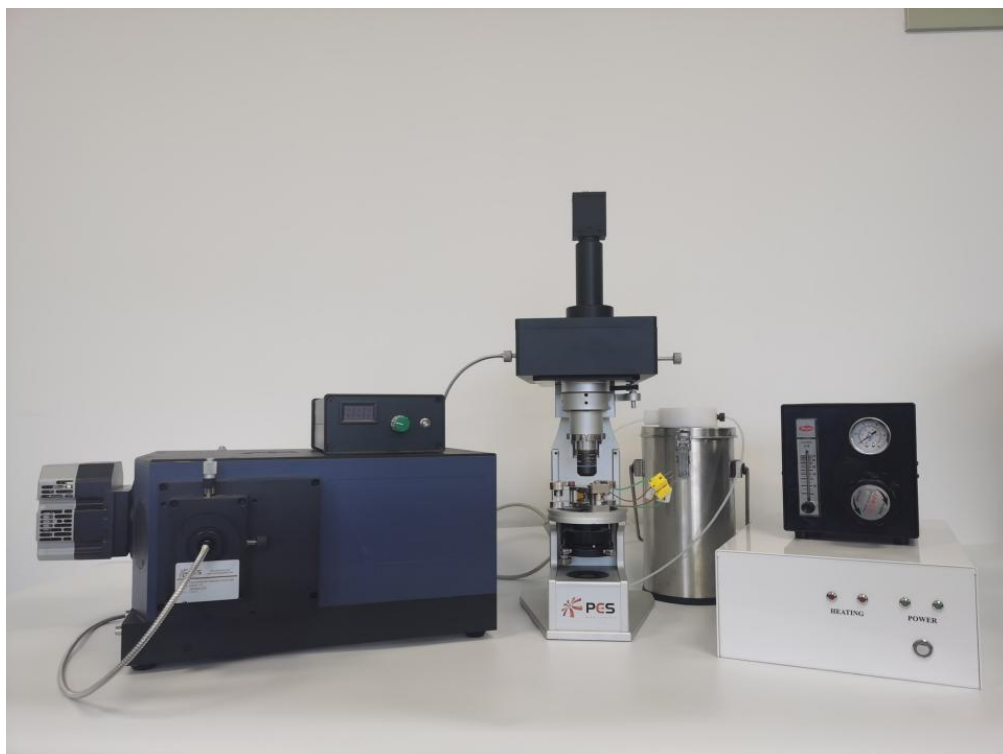


532nm Water/Rock/Gas GeoRaman Microprobe

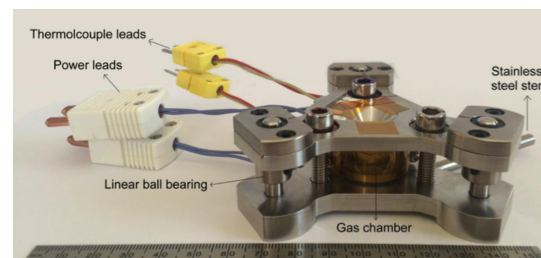
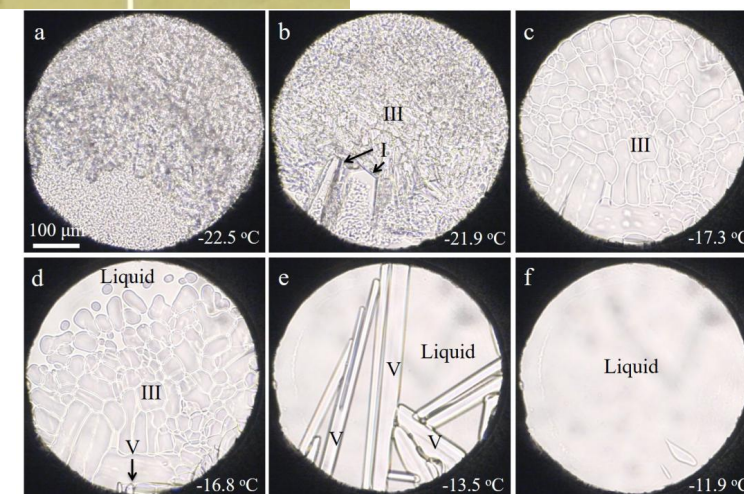
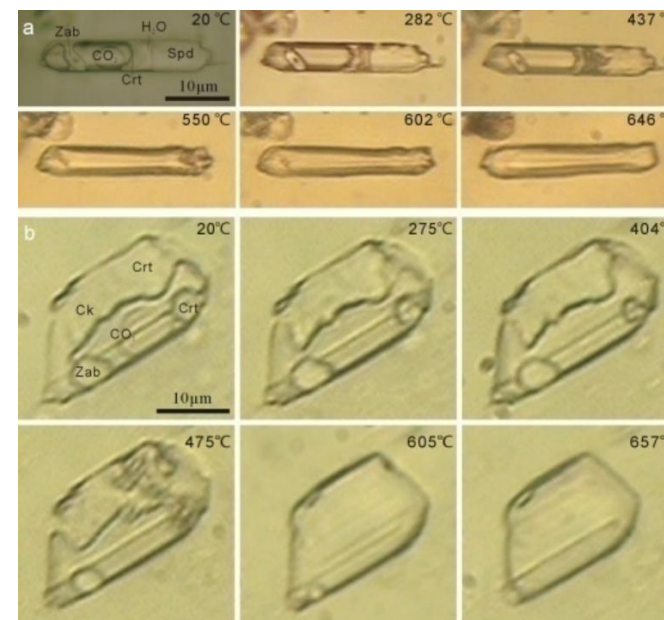


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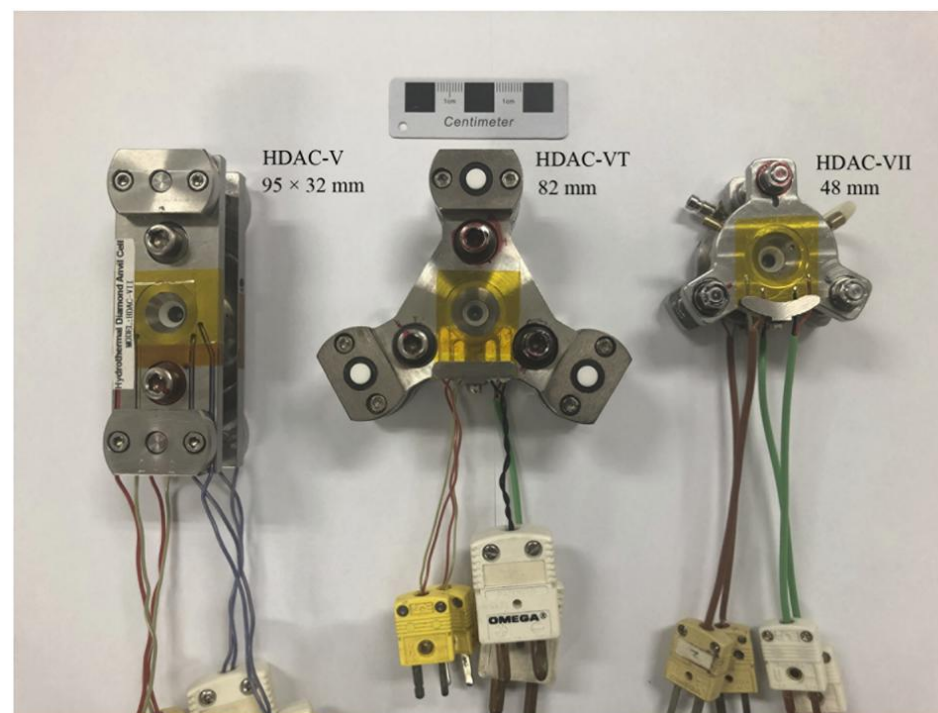
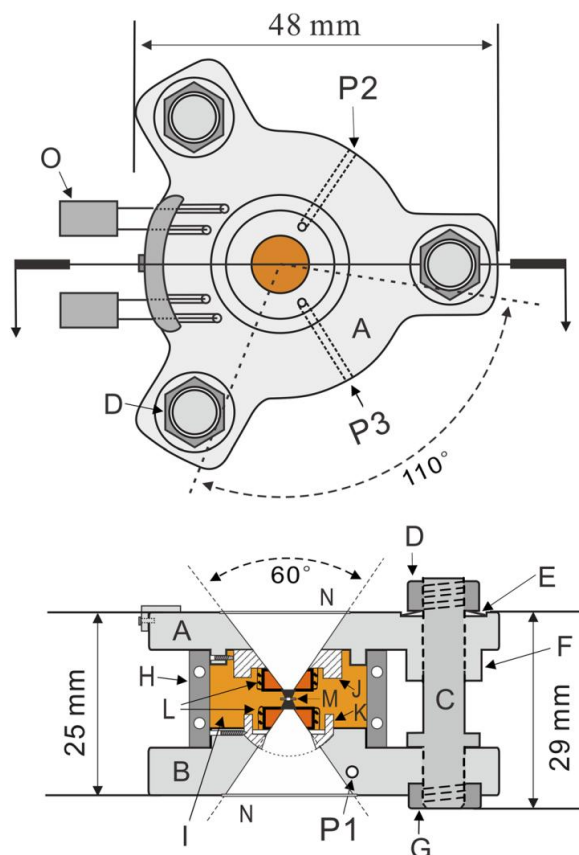
What we have down



532nm HDAC GeoRaman Microprobe



What we have down



Photographs of HDAC-V, HDAC-VT, and HDAC-VII showing their different structures and dimensions; the small scale on the ruler is in mm. The horizontal size of each HDAC is noted.

Key Benefit Features:

- Temperature range: room temperature to 1000°C
- Temperature accuracy: $\pm 0.1^\circ\text{C}$
- Heating rate: 1 to 100°C/min.
- Microscope working distance: 12mm
- Diamond anvil face: 0.5–1.6mm
- Pressure range: atmospheric pressure to 6 GPa
- Low temperature range: up to -100°C (special requirements)
- Image capture: 5 million images

