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PETROGRAPHY

Transmission – reflexion – UV-Epifluorescence
SEM
Hot and cold cathodoluminescences
Application to diagenesis (carbonates, sandstones, evaporites ,...)

FLUID INCLUSIONS ANALYSIS (aqueous and petroleum inclusions)

Description of different fluid inclusion populations with respect to their locations (overgrowth, fractures), content (water, gas or petroleum) and relations (contemporaneous or not contemporaneous aqueous and petroleum inclusions).

Microthermometry (T_h , T_m)

Salinity and minimal temperature of entrapment

Raman microspectrometry
(aqueous inclusions)

Salinity, dissolved gases (CH_4 , CO_2 , H_2S ,...)
 CH_4 concentration

FT-IR microspectrometry
(petroleum inclusions)

CH_4 , CO_2 and alkane molar concentrations

Confocal laser scanning
microscopy

Volume, Gas/Liquid ratio

UV fluorescence spectrometry

P-V-T-X-t MODELING

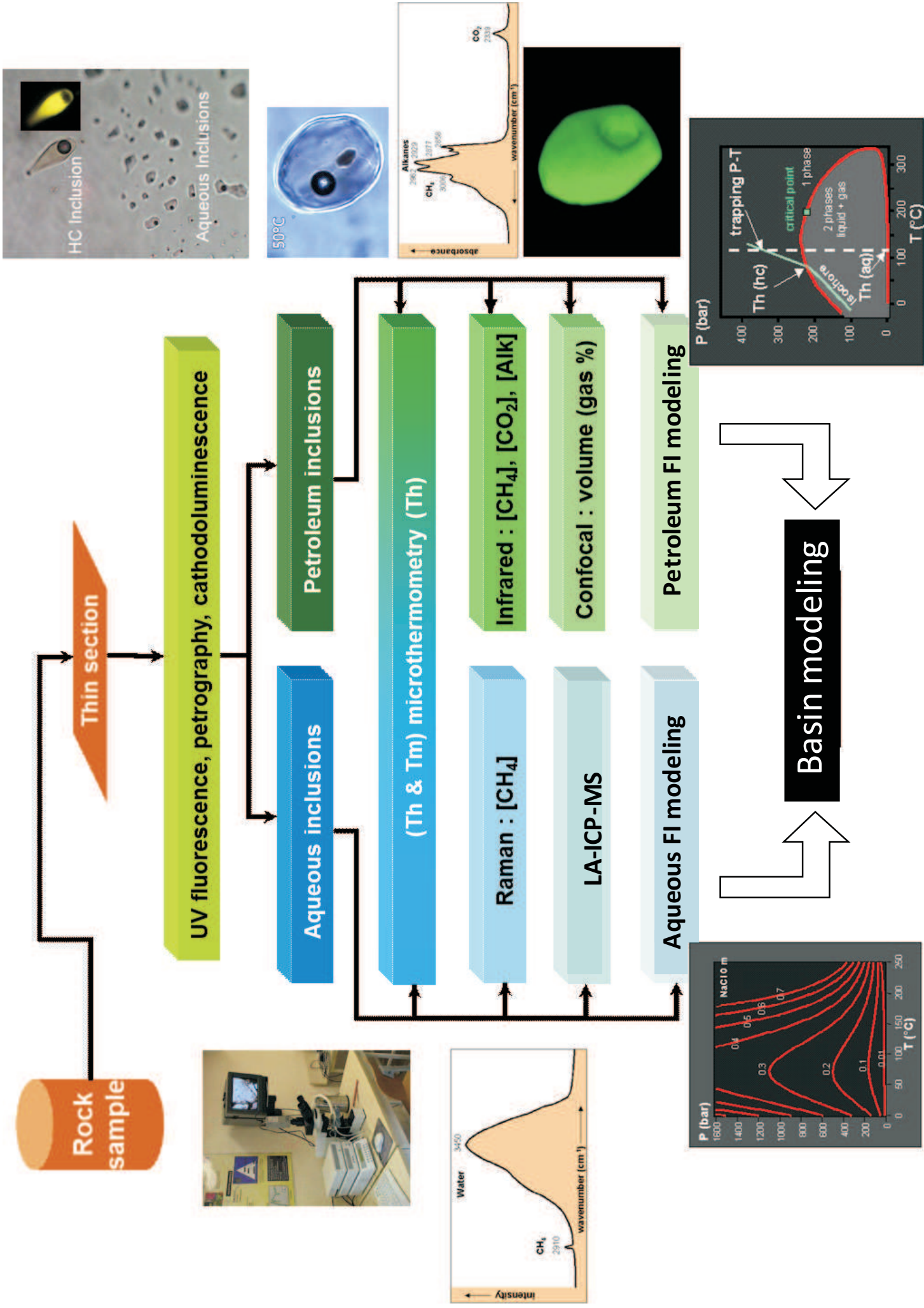
Thermodynamic modeling of aqueous and petroleum inclusions

INTEGRATION OF FLUID INCLUSIONS STUDY IN 1D BASIN MODELING

History of hydrocarbon reservoir charge or discharge
Estimate of fluid overpressure episodes
Timing of fluid events



The analyses are performed at GeoRessources laboratory (Nancy, France)



Source : PIRONON Jacques