NIUMAG

Core NMR Analyzer

MesoMR23-060H-I

MesoMR23-060H-I is a powerful Imaging and Analyzing System. It is suitable for core size from 1" to 2".

MesoMR23-060H-I can be equipped with HighTemperature -HighPressure System (HTHP) modules to simulate a real reservoir.

Percolation mechanism analysis under HTHP condition

Percolation mechanism analysis

Dynamic and real-time analysis of the oil/water saturation and distribution changes in displacement process

Visualization analysis in a displacement process

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Make the best LF-NMR

What you can get from your core!

Exploration and development of low permeability oil field

- Movable fluid saturation determination
- Pore size distribution of rock
- Mechanism of oil displacement
- Cracks and micro-cracks evaluation
- Mechanism of fracturing process

Exploration and development of CBM(Coal Bed Methane)

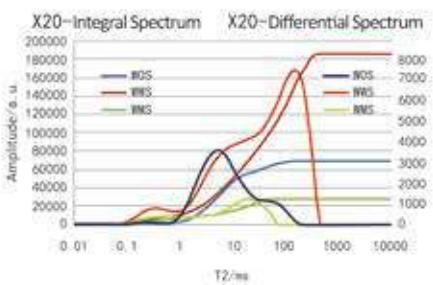
- Porosity
- Pore size distribution
- Fracture development
- Water saturation determination

Exploration and development of Gas field

- The influence of overburden pressure on porosity and permeability
- Pore size distribution of rock
- Mechanism of water flooding
- Gas field caverns, cracks and micro-cracks evaluation
- Studies on modification mechanism
- Free/irreducible fluid saturation

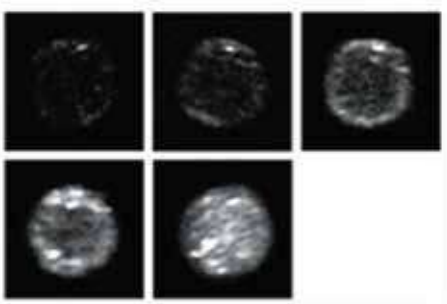
Applications

1.Core physical analysis



Porosity: 15.20%
BVI: 45.85%
FFI: 54.15%
oil saturation: 12.50%
water saturation: 87.50%
WOS: Origin Sample
WWS: Saturated Water
WMS: Saturated Manganes

2.Visual observation of permafrost melting process



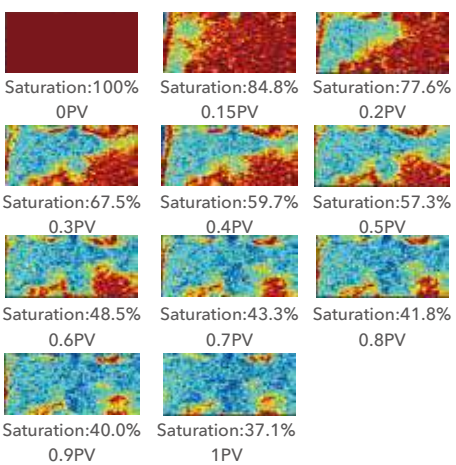
The signal comes from liquid water. During the melting process, it is observed that melting started from the periphery and spread to the entire core.

3.High pressure displacement

$MnCl_2$ Solution flooding oil (Water flooding oil) process

* Core physical property

Porosity(Ø)	Length(mm)	Pore volume(ml)
0.240	49.0	5.77



*1. Red represents for oil and green for water ($MnCl_2$ solution).

2. The series of images expressed the whole process of displacing from 0PV (oil saturated) to 1PV (most $MnCl_2$ solution saturated). The oil-water boundary and the dominant channel can be clearly observed.

3. The residual oil saturation at different displacement stages can be obtained simultaneously.