

# DIGITALROCK OIL RECOVERY



Critical development and operational decisions in the oil and gas industry – including reservoir appraisal, development, and management – rely on a solid understanding of multi-phase flow in porous reservoir rocks. DigitalROCK offers the first cloud-based solution to accurately and reliably predict multi-phase flow properties of reservoir rocks, leveraging a proprietary, full-physics digital simulation technology to reduce the time and cost associated with testing core samples. Increasing the volume and speed of analyses that can be performed for a hydrocarbon field provides more and better data in support of key investment decisions, especially for oil and gas companies assessing enhanced oil recovery projects.

## INDUSTRY CHALLENGES

- Oil and gas companies need reliable rock property information to make informed decisions about field development
- Enhanced oil recovery (EOR) for mature fields has huge potential but high cost and high risk, with success strongly dependent on the ability of the selected method to release and transport trapped oil (i.e. oil which remains trapped within the pore space of the rock fabric)
- Traditional methods to understand reservoir rock properties are costly and time-consuming
- Physical lab testing takes months per sample and requires suitable whole-core samples to be available
- Uncertain results, use of analogs, samples that are fragile or degraded, and long analysis times are all significant risks to maximizing productivity, effectively using resources, and realizing asset potential.

## BENEFITS AND DIFFERENTIATORS

- Analyze more samples faster for better rock property data resulting in higher confidence
- Reuse digital samples for various scenarios
- Reduce uncertainty of reservoir modeling and EOR potential
- Experience streamlined automated workflow on SIMULIA Cloud
- Access permanent database of rock samples and results

## USERS

Geologists, Petrophysicist, Geoscientist, Reservoir engineers, Reservoir Modeling Engineer, Reservoir Simulation Production Engineer, Petroleum Engineer, Reservoir Development Manager, Engineers / Scientists of Central Technology Group, R&D Programmers, R&D IT, R&D Technology Experts, R&D Scientist and R&D Engineer

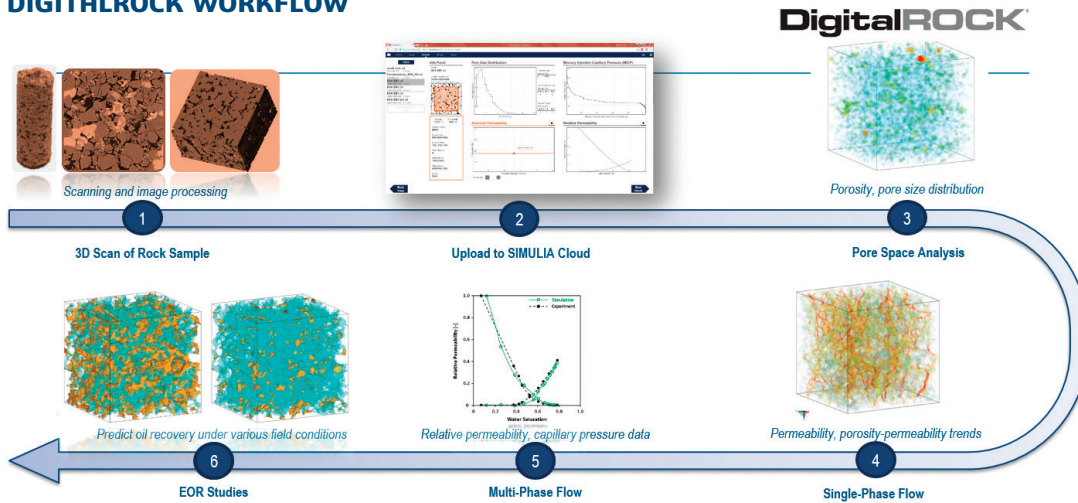
## KPIs

- Testing time:
  - Multi-phase analyses take 3-6 days instead of months needed for lab test
  - 5-10 analysis can be run in parallel on a large cluster, instead of 1-2 in the lab
- Virtual testing quality:
  - Accurate results over a wide range of fluid system conditions

## DECISION MAKERS

VP/Director Exploration, VP/Director Development, VP/Director Production, Head of Central Technology

## DIGITALROCK WORKFLOW



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