

# GIT Systems

## Fast Track your NMR Rock Core Analysis with GIT Systems

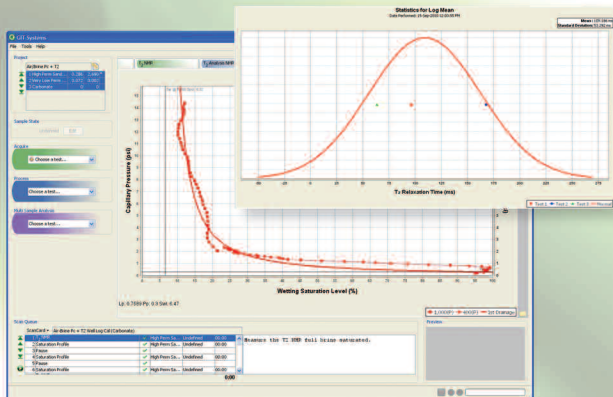
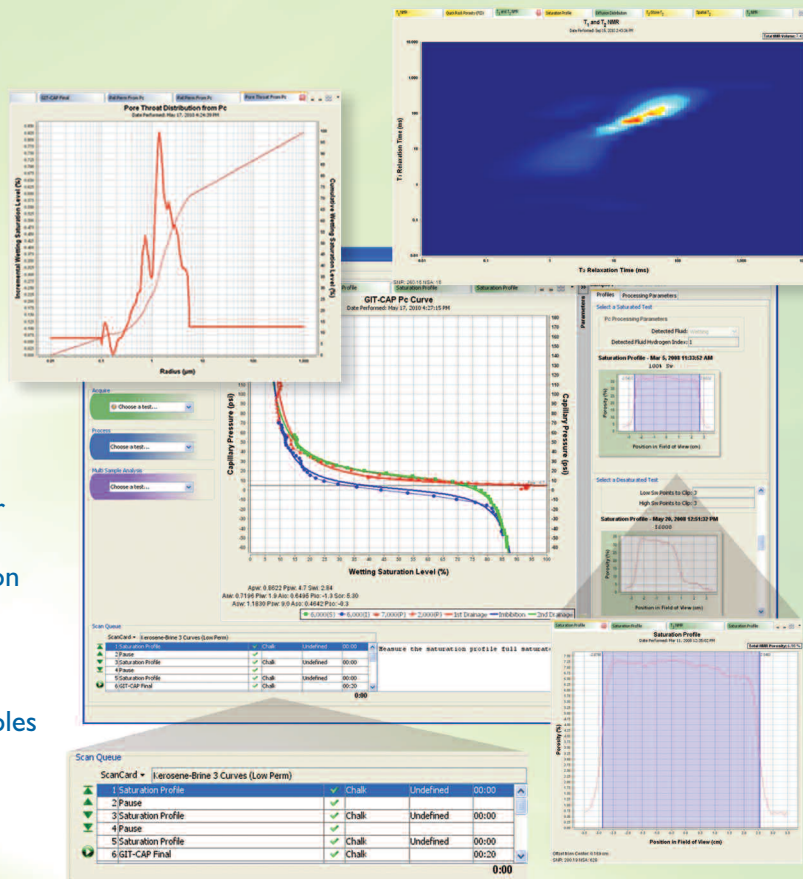
**Green Imaging Technologies' GIT Systems** software package allows users to maximize the NMR rock core data acquisition and analysis. It provides advanced core analysis capabilities centered on GIT's patented NMR-based capillary pressure measurement technique, GIT-CAP. GIT-CAP dramatically decreases capillary pressure measurement time while increasing accuracy.

### ACQUIRE:

- GIT-CAP Capillary Pressure
- Diffusion Distributions
- Diffusion -  $T_2$  2D Maps
- $T_1$  -  $T_2$  2D Maps
- Advanced Carbonate Tools ( $T_2$ -Store- $T_2$ )
- Porosity Profiles
- Pore Size Distributions ( $T_1$  or  $T_2$ )

### ANALYZE:

- Quick-CAP (capillary pressure modeling)
- Model relative permeability or pore throat from GIT-CAP Pc
- $T_1$  or  $T_2$  relaxivity determination
- Gaussian Fit to distributions
- Pc from  $T_1$  or  $T_2$  pore size distributions
- Statistical analysis across samples
- Automatic FFI, BVI, CBW, effective porosity and  $T_1/T_2$  cut-off computations
- Permeability estimation from  $T_1/T_2$  using standard models



### MULTI-SAMPLE ANALYSIS

GIT Systems allows the user to create Projects that can include multiple related samples. Users can open a Project and perform acquisition and processing on a single sample, or perform analysis across multiple samples. This feature allows users to perform **statistical analysis** and other comparisons.

Building on the scan automation feature, multiple sample analysis continues GIT's commitment to making our client's NMR rock core lab as efficient as possible.

## From Prediction to Production

### SPEED

- Porosity profile measurements are performed in less than **5 minutes** for most samples.
- GIT-CAP is **5 times faster** than traditional measurements, while providing **10 times more data points**.

### ACCURACY

- Porosity profiles and capillary pressure measurements are **direct measurements (not modeled)** that are **non-destructive**.

### USABILITY

- **Eliminates spreadsheets** by providing **robust sample management tools**.
- Simple scanning and processing queues.
- Makes **advanced NMR scanning** by **non-experts** a reality.

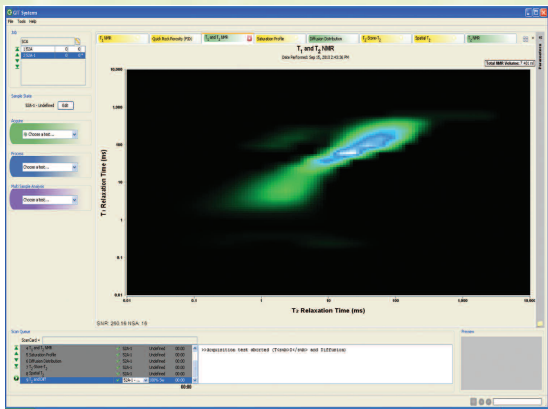




## GIT-CAP™ CAPILLARY PRESSURE

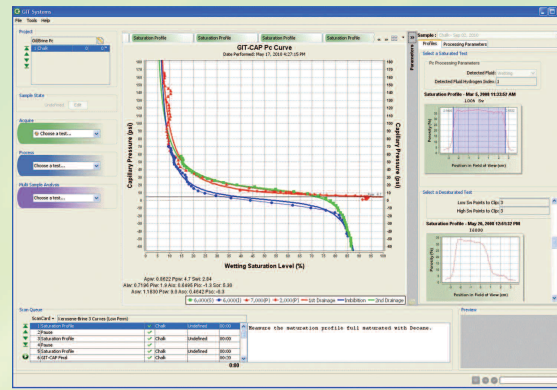
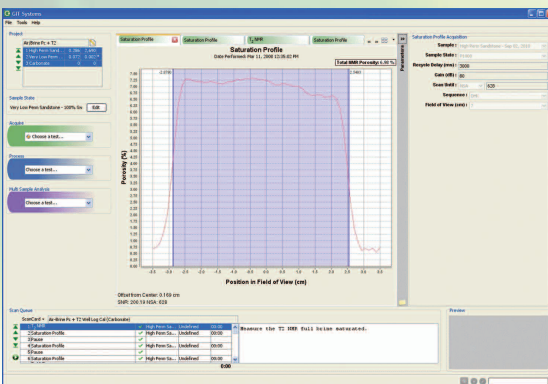
The patented GIT-CAP capillary pressure measurement technique measures actual fluids remaining in the sample at known pressure gradients produced by a centrifuge. GIT-CAP works for both air/brine and oil/brine systems.

GIT-CAP provides 10 times more data points, and is 5 times faster than conventional centrifuge techniques. Independent research confirms that GIT-CAP is accurate to within 2% of conventional measurement techniques, such as porous plate and traditional centrifuge techniques.



## PORE THROAT DISTRIBUTION

The GIT-CAP process generates a significant number of data points allowing for the calculation of saturation changes at many different pressures. Converting pressure to radius and plotting it against the saturation can yield a pore throat size distribution (reverse of mercury injection) allowing the computation of an NMR relaxivity parameter. This can then be utilized to convert  $T_2$  distributions into quantifiable pore size distributions and to compute capillary pressure from NMR well logs.



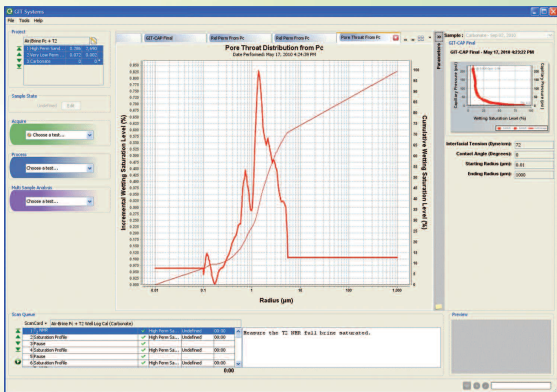
## MULTI-DIMENSIONAL ANALYSIS

$T_2$  mapping can often be used to differentiate between different important rock properties that may have the same NMR properties. For example, a rock containing oil and brine may show the oil and brine at the same  $T_2$  relaxation value. By adding diffusion weighting in a second dimension, you can differentiate between the oil and brine.

GIT Systems imbeds three  $T_2$  mapping acquisitions:

- Diffusion- $T_2$
- $T_2$ -store- $T_2$
- $T_2$ - $T_1$

GIT's patent pending techniques allow users to view multi-dimensional data in real-time.



## POROSITY PROFILE

GIT-CAP uses the NMR instrument to “see” fluids inside the core plug. By directly measuring these fluids, the software can calculate a porosity profile of the plug. This is in contrast to a traditional bulk porosity measurement, which may mask small-scale heterogeneity in the rock. This can be used to visualize flow fronts or imbibition processes.

## LITHOLOGIES

GIT Systems has been proven effective in multiple lithologies, and excels in low permeability situations.

