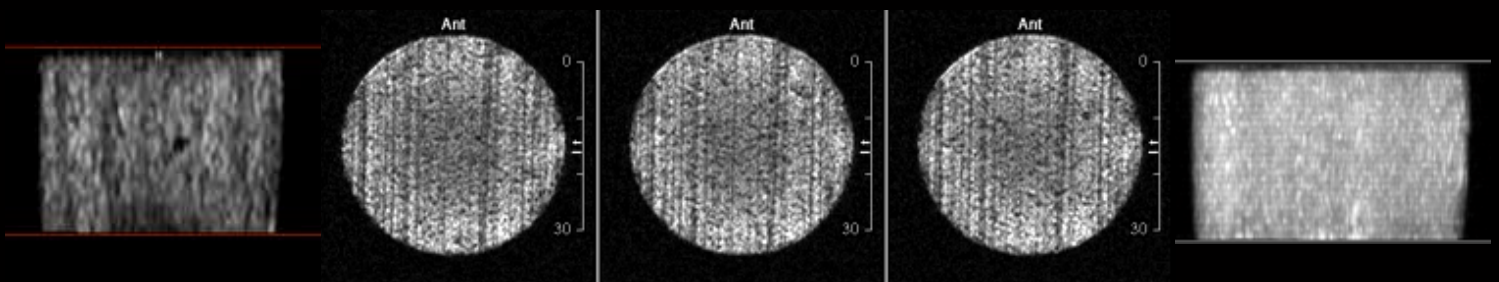




Innovative Technology For Rock Core Imaging



ImaCore - Variable MRI 0.1T - 3.0T

Cryogen Free MRI – ImaCore 3017™



The ImaCore 3D rock core imaging system is the result of a partnership between Green Imaging Technologies (GIT), an established leader in nuclear magnetic resonance (NMR) rock core analysis software, and MR Solutions, leader in magnetic resonance imaging (MRI) instruments. This partnership has resulted in a powerful MRI rock core instrument with an easy to use, yet robust user interface.

In general, rock core analysis is an exercise in providing measured data, but equipment limitations can require that the final analysis involve a theory of what is happening at the pore level. By using higher field MRI instrumentation, **limitations of resolution are virtually removed**, so one can bolster the theoretical with actual images of all the fluid present in the rock, and thus the pore network itself.

When standard NMR rock core technologies, or other technologies, reach the limit of the answers they can provide, **ImaCore will allow users to go further and see more of the rock core**. ImaCore will be a key tool for revealing the missing pieces and completing the reservoir puzzle.

ImaCore provides an adjustable field of 0.1 to 3 T in a stable, cryogen free imager, combined with robust 3D imaging software. **Users can quickly and easily obtain high resolution three dimensional (3D) images of all the fluid in the sample**. Sample sizes can be standard 1" or 1.5" core plugs, or full 3" or 4" diameter core.

The ImaCore flexible instrument design also allows for long core studies, and lends itself well to the use of flow cells within the instrument to perform flow studies. The resolution possible with the higher field allows for viewing of the flow front in real time.

In addition to 3D imaging capabilities, GIT software provides access to a full suite of core analysis measurements such as pore size distributions, diffusion, permeability, capillary pressure and relative permeability.



Complete the reservoir puzzle with an ImaCore 3D imaging system.

Features & Benefits

Superconducting Magnet	<ul style="list-style-type: none">• High performance• High homogeneity• Stable• Almost no fringe field
Cryogen Free Magnet	<ul style="list-style-type: none">• No need for liquid Helium• No Quenching• Dry Magnet
Compact & Light	<ul style="list-style-type: none">• Small footprint• ~220Kg for 3T
No Special Room Requirements	<ul style="list-style-type: none">• No need for quench pipes• No Faraday cage• No special floor needed
Variable Field Strengths	<ul style="list-style-type: none">• From 0.1T to 3.0T (Rampable)• Systems can operate at variable strengths



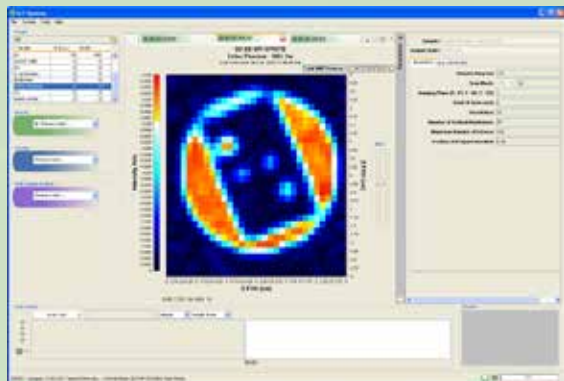
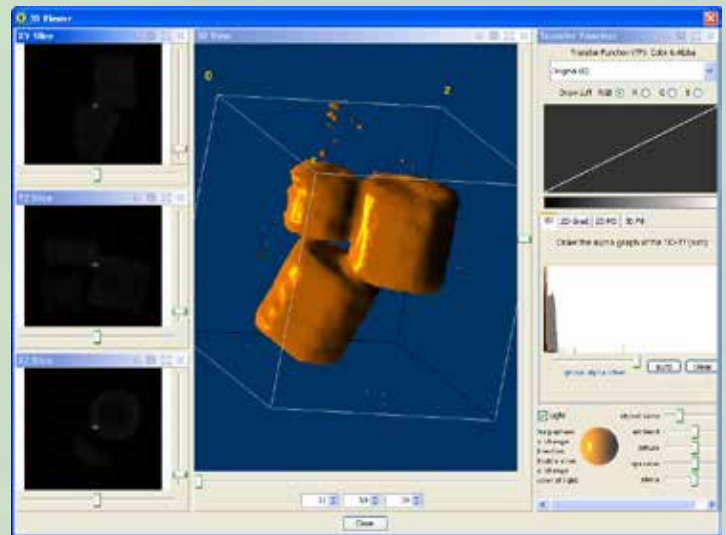
3D Imaging Software

Software for all user levels

The ImaCore 3D Imaging System comes complete with GIT Systems 3D Imaging software. This software simplifies the acquisition and viewing of images in 3D space. Flow studies can be viewed in real time in 3D allowing users to see the flow front interacting with the entire pore network.

GIT Systems 3D Imaging evolved from a range of products designed to provide both lab technicians and research scientists with a robust, yet easy to use interface to NMR and MRI instrumentation. The 3D Imaging software package builds on the foundation of the industry leading GIT Systems line of products, which have revolutionized how users acquire and process NMR and MRI data.

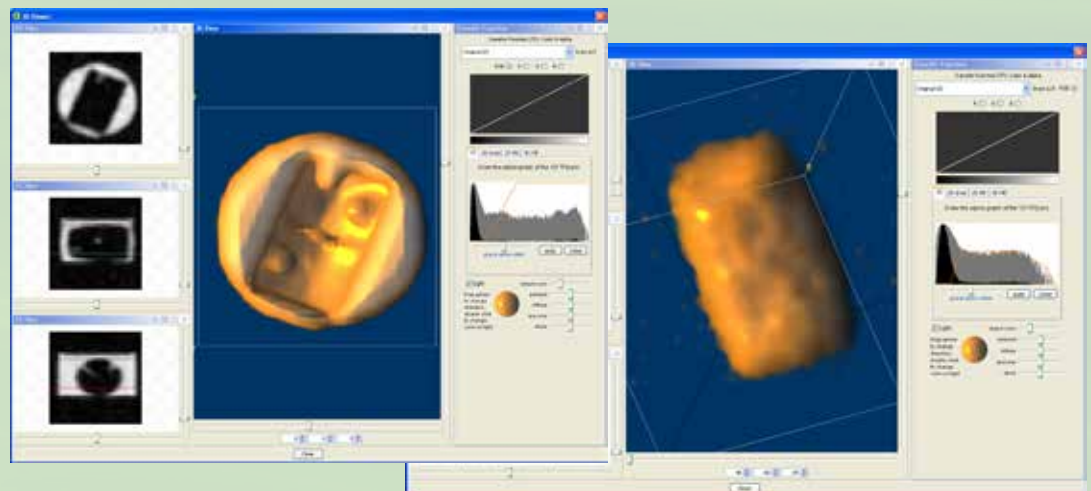
The 3D Imaging software provides access to NMR applications such as fluid mobility, saturation, porosity, wettability studies, shale analysis, and capillary pressure. It also adds a full suite of 3D acquisitions, processing and viewing capabilities.



Includes the following imaging pulse sequences:

- 2D spiral SE-SPI
- 2D spiral SPRITE
- 3D conical SE-SPI
- 3D conical SPRITE
- 1D SE-SPI and SPRITE profiles
- 1D spatial T2
- 2D spatial T2
- Out of volume suppression for long cores or profiles
- Slice selection for T2

For those users who wish to build their own pulse sequences, the GIT App Builder is packaged with the system. This product is a pulse sequence development tool, which allows users to develop, test and then deploy pulse sequences to the GIT Systems software. For imaging applications, the App Builder is packaged with both the 2D Spiral and 3D Conical gradient routines, allowing users to more quickly develop their own sequences.



Specifications - ImaCore MRI

ImaCore MRI	
Site Requirements:	Plug and Play System - No special room construction
Magnet	
Field Strength:	0.1T - 3.0T (rampable)
Magnet:	Cryogen-free, Superconducting magnet
Bore size:	17cm
Integrated RF Shield:	Yes
5 Gauss line: (From magnet center)	60cm radially x 80cm axially
F.O.V.:	Elliptical: 100mm x 70mm
Homogeneity:	Over 30mm +/- 0.1ppm, Over 70mm DSV +/- 1ppm
Magnet Weight:	220kg
Dimensions: (Including stand)	88cm Long x 77cm Wide x 138cm High
Gradient System	
Gradient diameter:	156/100mm
Strength:	X - 486 mT/m Y - 470 mT/m Z - 530 mT/m
Rise time @100A, 150V:	100 microseconds
Linearity:	Over 70mm: +/- 5%
Max duty cycle:	50%
Electronics	
EVO Spectrometer:	2TX, 4RX - Optional RX channels in blocks of 4
RF Transmit Amplifier Power:	500W
Pre-amplifiers x2, gain:	30dB
Pre-amps x2 Noise Figure:	< 0.3dB
Gradient Amplifiers:	X, Y, Z
Shim Power Supplies:	B0 plus 5 channels for second order
Cabinet Size & Weight:	158cm High x 78cm Deep x 55cm Wide x 150Kg
Requirements	
Electrical-Compressor:	380V/50Hz or 480V/60Hz 3phase, 7.5kW
Electrical-Electronics Rack:	208-240V 50/60Hz single phase, 6.5kW peak, <3.0kW rms
Water Supply:	7 litres/min. minimum
Sample Size	
Maximum Diameter:	100mm
Maximum Length:	70mm



MR Solutions Ltd.

MR SOLUTIONS is an independent world leader in MRI technology and the leading developer and manufacturer of superconducting, cryogen-free, benchtop MRI systems. The MRI system's revolutionary cryogen-free magnet technology and small footprint design, enables it to operate in almost any facility and in close proximity to other imaging modalities.

MRS has over 30 years of MRI, application, technology hardware & software innovation experience.

For more information:

information@mrsolutions.com
www.mrsolutions.com

Tel: +44 (0)1483 532146
Fax: +44 (0)1483 594084

Ashbourne House,
The Guildway, Old Portsmouth Rd.
Guildford, Surrey,
GU3 1LR UK



Green Imaging Technologies

Green Imaging Technologies is the world-leader in developing innovative solutions for lab-based rock analysis using Nuclear Magnetic Resonance (NMR). GIT's products and services offer fast, accurate, non-destructive analysis of rock core samples used by the oil and gas industry in exploration and reservoir characterization.

Over the last decade, GIT's product offerings have evolved and expanded to include a full suite of routine and advanced core analysis tools. A culture of continual innovation has driven the company to be the industry leader in NMR core analysis. From prediction to production, GIT provides the solution.

For more information:

info@greenimaging.com
www.greenimaging.com

Toll Free: +1 888 944 8462
Tel: +1 506 458 9992
Fax: +1 506 458 9615

520 Brookside Drive, Suite B
Fredericton, New Brunswick
E3A 8V2
Canada