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BENEFITS OF HIGH RESOLUTION COMPUTED TOMOGRAPHY IN CORE ANALYSIS

Michael Dixon
Omni Laboratories, Inc.
2501 Central Parkway, Suite C-13
Houston, Texas 77092

ABSTRACT

Medical computed tomography systems, or CAT scanners, are being used with increased frequency to nondestructively evaluate core samples. Most medical CAT scanners, however, have spatial resolutions on the order of one millimeter, which restricts the applications that computed tomography can address in core analysis. A new generation of computed tomography technology has been developed specifically for inspecting non-medical objects and industrial products. Some of these new industrial computed tomography (ICT) systems can provide greatly improved spatial resolution, approaching 0.05mm. These ICT systems can also provide high resolution images with relatively high source radiation energies of 420 KeV to allow nondestructive evaluation of large and dense core samples. Examples of new core analysis capabilities provided by high resolution ICT systems include screening of core plugs and whole core for relatively fine inhomogeneities, microfractures/induced fractures, and characterization of preserved and sleeved plugs.