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A new way to tap oil reserve



Tiki Rajwi

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NCESS scientists has a

Drilling for oil could turn out to be a whole new experience using a novel technique developed by scientists here at the National Centre for Earth Science Studies (NCESS).

NCESS scientists V. Nandakumar and J.L. Jayanthi have patented a method which, in layman's terms, could give oil exploration teams valuable knowledge – practically as real-time data – about the quality of oil contained in a basin during the drilling process itself.

What they have devised is a method to precisely determine the API gravity of hydrocarbon-bearing fluid inclusions (HCFI) using fluid inclusion techniques and microscope-based fluorescence emission spectroscopy.

Information droplets

The American Petroleum Institute (API) gravity denotes the commercial value of crude oil. HCFIs are minute 'droplets' of petroleum oil trapped inside isolated, microscopic rock chambers. The important point is that their composition may have remained unchanged since the time of the 'entrapment'. For oil explorers, HCFIs hold priceless information about oil reservoirs deep inside the earth.

The Government of India granted the patent to Dr. Nandakumar, Scientist (G) and head, Crustal Processes Group, NCESS; and Dr. Jayanthi, who is Project Scientist (C), NCESS; on July 3. The Oil and Natural Gas Corporation (ONGC) has evinced interest in adopting their technique, which, the scientists say, holds vast potential for application in the petroleum industry.

"In general, 40% of exploratory wells end up as dry wells. Our methodology that employs a non-destructive, micro-spectroscopic technique could give fresh impetus to further exploration in locations adjoining abandoned or dry wells," Dr. Nandakumar said.

The ONGC had supplied rock samples from the Mumbai offshore basin for the research.

The research, which took six years to bear fruit, was undertaken with funding from the Ministry of Earth Sciences.