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Development of method for Identification of chemical constituent in Hydrocarbon fluid inclusions

The scientists at Earth System Science Organization (ESSO)-National Center for Earth Science Studies, Government of India has developed a Raman spectroscopic method to overcome the challenge of masking of Raman signal due to common presence of fluorescence emission from minerals and aromatic compounds in Hydrocarbon fluid inclusions (HCFIs). This method has great potential to detect specific Raman signals generated from natural HCFIs using an excitation wavelength of 785 nm with special wafer preparation techniques to negate the background fluorescence.

This laser Raman technique also able to detect peaks corresponding to Bromobenzene, Carbon monoxide, Nitrogen, Ethylene, Sulphur oxide, Carbonyl Sulphide, Cyclohexane, Benzene and, Hydrogen sulfide in liquid form along with the presence of a broad peak of liquid water, peaks of calcium sulfate and calcium carbonate. Using this laser Raman spectrometric method with a 785 laser excitation is able to identify chemical constituents in natural Hydrocarbon fluid inclusions from the same basin.

Dr. Faiz Anwar
Project Scientist, Vigyan Prasar