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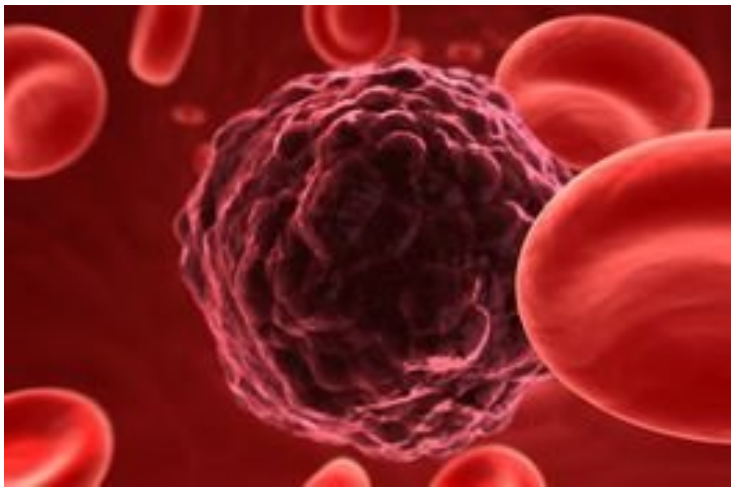

IIT-Delhi graduate, Mr Rohit Bhargava, currently a professor at the University of Illinois, Urbana-Champaign, has developed a stainless staining technique that provides a new tool for scientists and clinicians for better diagnosis of cancer.

Till date, prepared biopsy samples are stained under a light microscope to examine them clearly. Mr Bhargava has developed label-free chemical imaging by using infrared spectroscopic imaging for microscopy, to provide the same data as molecular stains.

Instead of using stains, the new methodology measures chemical constitution of cells and tissues directly. The outcome of this, is that, the molecular stains can be replicated using the intrinsic molecular contrast of the tissues and computations, without staining the tissues.

Instead of providing stained biopsy images, the study depends on computation. "Infrared and optical imaging seemed to be in different modes for getting important information in pathology. This study shows that a close link between these two, allows users to choose the best method for addressing their needs," said Mr Bhargava.

Thus, any sample can be stained to anticipate the stains without material cost or time, or even the effort of precious tissue left pristine for downstream studies. Another usage of this approach can be in the small amount of sample analysis, for example, a thin needle biopsy method.

According to Mr Bhargava, the development of this approach promises to have an immediate and long-term impact in pathological methods, to a multiplied molecular science in both research and clinical practices.