

## Monitoring of drugs at molecular level using FTIR spectroscopy

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There is an ongoing need for improvements in non-invasive techniques for the diagnostic and prognosis of gastric problem. Such technologies would allow for accuracy in results over huge number of patients. In India, there are two types of Medical Treatment systems (MTS) using drugs namely, English Medical Treatment systems (EMTS) and Ayurveda, Unani and siddha Treatment system(AUSTS). Due to modern food habits, 70% of the population suffering from gastric problem. To find the characteristics and properties of drugs given for the treatment of gastric problem by both type of physicians, the samples are taken for experiment using Fourier transform Infrared spectrometer. In this method the Infrared spectrum originates from the vibrational motion of the molecules. This property is used for characterization of biological compounds. Spectral analysis revealed differences in both the treatment systems and also several metabolic components such as lipid, proteins, glucose, and carboxylate presence in the taken samples for test. The spectral analysis indicated that the specific functional groups of the drug materials have almost the same chemical characteristics but different reactions in the human body.

**Keywords:** FTIR-Fourier Transform Infra red Spectroscopy, MTS-Medical Treatment System, AUSTS-Ayurveda, Unani and Siddha treatment system, KBr-Pottassium Bromide, FT-Fourier Transform, DTGS- deuterated triglycine sulphate

### Biography

G. S. Uthayakumar received the B.E. degree in ECE from Madras University, Chennai in 1990, M.E.degree in Medical Electronics from College of Engineering, Anna University, Chennai and M.B.A. Degree from IGNOU. He is currently working with St. Joseph's College of Engineering in the Department of Electronics and Communication Engineering Affiliated to Anna University, Chennai, India. He has over 21 years of experience in industry and various engineering colleges. He attended many workshops in the area of Bio-medical Electronics. He has been teaching the subjects: Medical Electronics, Optical Communication and etc for number of semesters. His research interests include Bio-medical Optical Engineering, Bio-optical spectroscopy and Analytical chemistry.

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