

8th European Chemistry Congress

June 21-23, 2018 | Paris, France

Simultaneous quantitative analytical studies of tartrazine, carmoisine and vanillin in food stuffs using Attenuated total reflectance fourier transform infrared spectroscopy

Swapnil Tiwari

Pt Ravishankar Shukla University, India

The use of colors in food is associated with its quality and is long term practice. The use of synthetic dyes in recent years has been increased significantly. Near about 3000 dyes are said to be in the use as food colorants at world level. In general, azo dyes are the most common dyes used in food colors. It has been reported that azo group can be chemically reacted, or as itself can be a basis of carcinogenic amines (formed by the chemical reaction of azo group) determination of banned azo dyes in consumer's food is therefore of utmost concern. This study describes a novel diffuse reflectance-fourier transform infrared spectroscopic (DRS-FTIR) method for simultaneously determining the qualitative and quantitative presence of three food additive viz, tartrazine, carmoisine & vanillin in commercially available food stuffs. The FTIR spectral studies of food additives were taken between 4000-400 cm^{-1} and characteristic peaks of all three analytes were selected for identification. The absorbance and peak area were determined which shows excellent linearity for concentration range upto 100 $\mu\text{g mL}^{-1}$. The statistical parameters such as limit of detection and limit of quantification were also determined. The method was successfully applied to food and beverage samples and good recoveries were obtained.

Biography

Swapnil Tiwari is pursuing her PhD in chemistry under the supervision of Professor Manas Kanti Deb from school of studies in chemistry, Pt Ravishankar Shukla University at Raipur, Chhattisgarh, India. Her research work is related to new analytical method development for the qualitative and quantitative analysis of carcinogenic food additives and adulterants in food stuffs employing fourier transform infrared spectroscopic technique.

swapnil.tiwari7@gmail.com

Notes: