पेटेंट कार्यालय
शासकीय जर्नल

OFFICIAL JOURNAL
OF
THE PATENT OFFICE

निर्गमन सं. 19/2025	शुक्रवार	दिनांक: 09/05/2025
ISSUE NO. 19/2025	FRIDAY	DATE: 09/05/2025

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/04/2025

(21) Application No.202541035006 A

(43) Publication Date : 09/05/2025

(54) Title of the invention : METHOD OF DETERMINING THE CONTENT OF MONOSODIUM GLUTAMATE IN FAST FOOD BY GREENNESS ASSESSMENT: A NOVEL APPROACH

(51) International classification :G01N0021350000, G01N0021552000, G01N0021356300, G01N0021357700, G01N0021350400

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention provides a method of isolation and characterization of monosodium glutamate from food extracts, the method comprising of: obtaining predetermined amount of food sample; homogenizing a representative quantity of each sample to ensure uniform distribution of components; analyzing the homogenized samples by subjecting to Fourier Transform Infrared (FTIR) spectroscopic analysis; acquiring the FTIR spectra using an advanced FTIR spectrometer operating in the mid-infrared range 4000–400 cm^{-1}. The sample measurements are conducted using the attenuated total reflectance (ATR) mode, a technique advantageous for solid and semi-solid samples as it minimizes sample preparation, thereby aligning with green chemistry principles; the samples are directly placed onto the ATR crystal, and spectra are recorded under controlled environmental conditions to minimize baseline noise and atmospheric interference. The FTIR spectra obtained from the extracted MSG in fast food samples exhibited similar but slightly shifted absorption peaks when compared to standard; the principal peaks identified in the sample spectra included a distinct absorption at 3672.59 cm^{-1}. The method developed in this study successfully achieves both qualitative and quantitative analysis of monosodium glutamate, validating its potential application in commercial food quality control and regulatory testing under the principles of green analytical chemistry.

No. of Pages : 22 No. of Claims : 10