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INTRODUCTION

In view of the recent amendment made in the Patents Act, 1970 by the Patents (Amendment) Act, 2005 effective from 01st January 2005, the Official Journal of The Patent Office is required to be published under the Statute. This Journal is being published on weekly basis on every Friday covering the various proceedings on Patents as required according to the provision of Section 145 of the Patents Act 1970. All the enquiries on this Official Journal and other information as required by the public should be addressed to the Controller General of Patents, Designs & Trade Marks. Suggestions and comments are requested from all quarters so that the content can be enriched.

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(57) Abstract :

The present invention provides a portable soil nutrient detection system employing a disposable paper-based microfluidic test strip and a handheld reader device. The test strip comprises hydrophilic flow channels defined by hydrophobic barriers, a sample loading region, reaction zones containing dried or blister-packaged reagents, a detection zone with visual or fluorescent signal output, and a control zone for test validity. Target macro- and micro-nutrients; including nitrogen, phosphorus, potassium, and trace elements, are detected simultaneously through parallel or sequential channels. Integrated waste reservoirs ensure safe fluid handling, while reference scales support calibration. The handheld reader provides controlled illumination and links to a mobile application for image capture, signal processing, geotagging, and data transmission to soil health databases. The system enables rapid, low-cost, and field-deployable soil nutrient analysis without laboratory dependence.

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