

पेटेंट कार्यालय  
शासकीय जर्नल

**OFFICIAL JOURNAL  
OF  
THE PATENT OFFICE**

---

---

निर्गमन सं. 42/2023  
ISSUE NO. 42/2023

शुक्रवार  
FRIDAY

दिनांक: 20/10/2023  
DATE: 20/10/2023

---

---

पेटेंट कार्यालय का एक प्रकाशन  
PUBLICATION OF THE PATENT OFFICE

## **INTRODUCTION**

In view of the recent amendment made in the Patents Act, 1970 by the Patents (Amendment) Act, 2005 effective from 01<sup>st</sup> 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.

**( PROF. (DR) UNNAT P. PANDIT)**  
**CONTROLLER GENERAL OF PATENTS, DESIGNS & TRADE MARKS**

**20<sup>TH</sup> OCTOBER, 2023**

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202341066821 A

(19) INDIA

(22) Date of filing of Application :05/10/2023

(43) Publication Date : 20/10/2023

(54) Title of the invention : SYSTEM AND METHOD FOR REAL-TIME BACTERIAL SPOT DISEASE DETECTION IN BELL PEPPER PLANTS

(51) International classification	:G06K0009620000, A01H0005080000, H04N0005225000, G06N0003040000, G06N0003080000	(71)Name of Applicant : <b>1)Midhun P Mathew</b> Address of Applicant :CS Division, SOE, CUSAT, Kochi, Kerala 682022, India Kochi -----
(86) International Application No	:NA	<b>2)Dr. Jagathy Raj V.P.</b>
Filing Date	:NA	<b>3)Dr. Sudheep Elayidom</b>
(87) International Publication No	: NA	Name of Applicant : NA
(61) Patent of Addition to Application Number	:NA	Address of Applicant : NA
Filing Date	:NA	(72)Name of Inventor :
(62) Divisional to Application Number	:NA	<b>1)Midhun P Mathew</b>
Filing Date	:NA	Address of Applicant :CS Division, SOE, CUSAT, Kochi, Kerala 682022, India Kochi -----
		<b>2)Dr. Jagathy Raj V.P.</b>
		Address of Applicant :SMS, CUSAT, Kochi, Kerala 682022, India Kochi -----
		<b>3)Dr. Sudheep Elayidom</b>
		Address of Applicant :CS Division, SOE, CUSAT, Kochi, Kerala 682022 India Kochi -----

(57) Abstract :

The present invention provides a system and method for real-time bacterial spot disease detection in bell pepper plants. The system comprises a Raspberry Pi single-board computer, camera module, LCD, image processing, and machine learning software. The Raspberry Pi is configured to capture high-resolution images of bell pepper plants using the camera module and subsequently preprocesses these images for input into a newly developed depth-wise-separable Vgg 19 visual transform with enhanced optimization and regularization. The neural network conducts image classification to determine the presence or absence of bacterial spot diseases on the bell pepper plants. The classification results are then displayed on the LCD in real time. This innovative system provides an efficient and automated solution for the early detection of bacterial spot diseases in bell pepper plants, enabling timely intervention and mitigation measures.

No. of Pages : 20 No. of Claims : 7