

# **A Patent on**

## **A SYSTEM AND METHOD FOR PERFORMING LIGHTNING CHARACTERIZATION AND DETECTION FOR REALIZATION OF A PLANETARY LIGHTNING**

Patentee: 1. CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY  
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The invention presents a novel system and method for performing lightning characterization and detection to emulate planetary lightning under controlled laboratory conditions. The proposed setup utilizes a vacuum chamber, high-voltage impulse generator, electrodes, and a dipole antenna to generate and analyze electrical breakdowns that simulate lightning phenomena in planetary atmospheres. The system enables the creation of specific atmospheric environments using controlled gas mixtures and pressure conditions, facilitating the study of lightning propagation and characteristics. Experimental validation demonstrates the capability of the system to characterize lightning signals under Venus-like atmospheric conditions. The invention provides a reliable platform for planetary science research, atmospheric studies, and the development of lightning detection technologies for extraterrestrial environments.

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The Patent Office, Government Of India

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प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकरित A SYSTEM AND METHOD FOR PERFORMING LIGHTNING CHARACTERIZATION AND DETECTION FOR REALIZATION OF A PLANETARY LIGHTNING नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2024 के बाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SYSTEM AND METHOD FOR PERFORMING LIGHTNING CHARACTERIZATION AND DETECTION FOR REALIZATION OF A PLANETARY LIGHTNING as disclosed in the above mentioned application for the term of 20 years from the 22<sup>nd</sup> day of September 2024 in accordance with the provisions of the Patents Act,1970.



उत्तम शर्मा  
पेटेंट नियंत्रक

अनुदान की तारीख : 29/05/2026  
Date of Grant :

Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, सितम्बर 2026 के बाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 22<sup>nd</sup> day of September 2026 and on the same day in every year thereafter.