(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/02/2026
(21) Application No.202631017900 A
(43) Publication Date : 27/03/2026

(54) Title of the invention : A CLOSED-LOOP MICROGRAVITY-COMPATIBLE AEROPONIC ASSISTED PLANT GROWTH SYSTEM FOR SPACE AGRICULTURE APPLICATIONS

(51) International classification	:A01G 31/02, A01G 31/06, A01G 31/00, B64G 99/00, B64G 6/00	(71)**Name of Applicant :** **1)Adamas University** Address of Applicant :BARASAT – BARRACKPORE ROAD , P.O. JAGANNATHPUR KOLKATA, WEST BENGAL - 700126, INDIA KOLKATA West Bengal India (72)**Name of Inventor :** **1)Moumita Gangopadhyay** **2)Somroop Chakravarti** **3)Moumita Mukherjee**
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No Filing Date	: :01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number Filing Date	:NA :NA	
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :
ABSTRACT A Closed-Loop Microgravity-Compatible Aeroponic Assisted Plant Growth System for Space Agriculture Applications The present invention relates to the field of space agriculture, particularly to systems and methods for cultivating plants in microgravity environments encountered during long-duration space missions, extraterrestrial habitats, or planetary colonization efforts. More specifically, the invention pertains to a closed-loop aeroponic system integrated with mechanical simulation mechanisms to enable gravity-independent nutrient delivery and plant growth under controlled conditions. FIG- 2

No. of Pages : 23 No. of Claims : 8