

(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :18/06/2025

(21) Application No.202531058373 A

(43) Publication Date : 04/07/2025

(54) Title of the invention : A SYSTEM AND METHOD FOR BLOCKCHAIN-ENABLED SMART IRRIGATION MANAGEMENT USING SOIL MOISTURE SENSORS

(51) International classification	:A01G0025160000, H04L0009320000, H04L0009000000, A01G0027000000, G06Q0050020000	(71) Name of Applicant : 1)Brainware University, Kolkata Address of Applicant :398, Ramkrishnapur Rd, Near Jagadighata Market, Barasat, Kolkata, West Bengal 700125 ----- Name of Applicant : NA Address of Applicant : NA
(86) International Application No	:NA	(72) Name of Inventor : 1)Mr. Subhadip Nandi Address of Applicant :Assistant Professor at Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal-700125 -----
Filing Date	:NA	2)Dr. Kaushik Chanda Address of Applicant :Associate Professor at Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal-700125 -----
(87) International Publication No	: NA	3)Ms. Anudeepa Gon Address of Applicant :Assistant Professor at Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal-700125 -----
(61) Patent of Addition to Application Number	:NA	4)Dr. Rahul Kumar Ghosh Address of Applicant :Assistant Professor at Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal-700125 -----
Filing Date	:NA	5)Mr. Gourab Dutta Address of Applicant :Assistant Professor at Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal-700125 -----
(62) Divisional to Application Number	:NA	6)Mr. Sandip Chakraborty Address of Applicant :Assistant Professor at Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal-700125 -----
Filing Date	:NA	7)Mr. Sudip Samanta Address of Applicant :Assistant Professor at Brainware University, 398, Ramkrishnapur Road, Barasat, Near Jagadighata Market, Kolkata, West Bengal-700125 -----

(57) Abstract :

[040] The present invention discloses a smart irrigation management system that integrates soil moisture sensors, microcontroller-controlled irrigation, and blockchain technology to automate and transparently record irrigation events. The system monitors real-time soil moisture levels and activates water flow through solenoid valves when thresholds are breached, ensuring efficient water usage. Each irrigation event is immutably logged on a blockchain ledger with timestamp, sensor data, and zone information, enabling tamper-proof auditing and traceability. A user dashboard provides access to live and historical data, supporting informed decision-making and compliance with water management standards. The invention enhances sustainable agriculture by reducing water waste, increasing crop productivity, and enabling secure, data-driven farm operations. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 18 No. of Claims : 10