

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511106884 A

(19) INDIA

(22) Date of filing of Application :04/11/2025

(43) Publication Date : 26/12/2025

(54) Title of the invention : AN AI-POWERED TOOL FOR SMART HOME ENERGY MANAGEMENT

(51) International classification	:G06V 10/40, G06V 30/18, F24F 1/40, A23F 3/38, A23F 5/22	(71) <b>Name of Applicant :</b> <b>1)NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY</b> Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. Uttar Pradesh India (72) <b>Name of Inventor :</b> <b>1)RENU DEVI</b> <b>2)SANCHI KAUSHIK</b>
(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	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present invention discloses a machine learning model (100) for predictive maintenance in manufacturing. The model includes a data acquisition unit (101) for collecting real-time sensor data, a preprocessing module (102) for noise removal, and a feature extraction unit (103) for generating informative features. A learning model (104) predicts equipment failures, while a prediction engine (105) estimates Remaining Useful Life (RUL). A visualization interface (106) displays predictive insights, enabling proactive maintenance scheduling. The invention reduces downtime, lowers costs, and improves manufacturing reliability.

No. of Pages : 16 No. of Claims : 6