

(54) Title of the invention : Estimating the State of Health of Lead-Acid Battery using Feed Forward Neural Network

<p>(51) International classification :G01R0031392000, G06N0003080000, G01R0031367000, G16H0050200000, G06N0003040000</p> <p>(86) International Application No :PCT// Filing Date :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Dr. N. MURUGANANTHAM Address of Applicant :Associate Professor, Department of Electrical and Electronics Engineering, Periyar Maniammai Institute of Science and Technology (Deemed to be University), Vallam, Thanjavur(D.T) – 613403, Tamilnadu, India. -----</p> <p>-----</p> <p>2)Mrs. G. VIDHYA 3)Mr. D. SELVABHARATHI Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr. N. MURUGANANTHAM Address of Applicant :Associate Professor, Department of Electrical and Electronics Engineering, Periyar Maniammai Institute of Science and Technology (Deemed to be University), Vallam, Thanjavur(D.T) – 613403, Tamilnadu, India. -----</p> <p>-----</p> <p>2)Mrs. G. VIDHYA Address of Applicant :Assistant Professor, Department of Information Technology, Pavendar Bharathidasan College of Engineering and Technology, Mathur, Pudukottai Road, Tiruchirappalli – 620024, Tamilnadu, India. -----</p> <p>3)Mr. D. SELVABHARATHI Address of Applicant :Assistant Professor / Department of Electrical and Electronics Engineering, SRM Institute of Science and Technology (Deemed to be University), Kattankulathur – 603203, Chengalpattu (D.T), Tamilnadu, India. -----</p> <p>-</p>
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(57) Abstract :

[023] A Battery Management System (BMS) can prolong the life of the battery but it depends on the accuracy of the adopted scheme. Different techniques have been developed to enhance the BMS by monitoring the State of Health (SOH) of the battery. In this work, the detection of battery voltage is analyzed by using the cycle counting method which is a conventional technique and compared with Artificial Neural Network (ANN) a heuristic method. The advantage of the proposed ANN method is SOH can be monitored without disconnecting the battery from the load. Also, the sampling data to the ANN are derived from various techniques including Open Circuit Voltage (OCV) method, Ambient temperature measurement, and valley point detection. A feed-forward backpropagation algorithm is used to achieve the purpose of real-time monitoring of the LAB. The results show that the precise estimation of SOH can be obtained by Feed-Forward Neural Network (FFNN) when trained with more sampling data.

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