Environmental Engineering and Management Journal

August 2011, Vol.10, No. 8, 1005-1010
http://omicron.ch.tuiasi.ro/EEMJ/

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ALGORITHM FOR LIFETIME ESTIMATION OF BATTERIES BASED ON VOLTAGE DISTRIBUTION SHAPE

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Abstract

In spite of the large use of batteries throughout the years, both in photovoltaic systems and in other uses, there are still no comprehensive analyses in ageing studies and, when they exist, statistics turn out to be limited. In this sense, this macro-grid is a unique experience, since the experiment is already composed of 1600 identical stand-alone photovoltaic systems and almost 10 years of data taking on 10 minute interval for the main magnitudes.
In this paper, it is proposed a method for the estimation of the state of the health for lead-acid batteries, based on the evolution in time of the corresponding voltage distribution. The study is based on the statistical analysis of such a distribution with a monthly frequency.

Key words: batteries, lifetime, quality control, solar power

Received: May, 2011; Revised final: August, 2011; Accepted: August, 2011

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