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“TEN YEARS WORKING TOGETHER FOR A SUSTAINABLE FUTURE”

Soft sensors to assess the energy consumption in the formation of lead-acid batteries

CABELLO, J.J.^a, SAGASTUME, A.^a, SOUSA, V.^a HERRERA, H.^a, BALBIS, M.^a, SILVA, J.^a

a. Universidad de la Costa. Colombia.

Abstract

Lead-acid batteries are essential for different economic activities and are, in general, energy intensive products. However, there is a limited discussion on how to assess the energy consumption and its efficiency for battery manufacturing. This study assess the process of battery formation, which is essential in manufacturing lead-acid batteries, and account for over half of the energy consumption of battery production. The assessment is implemented in a battery plant using data from a 4 years period to develop an energy performance indicator (EnPI), used to assess the efficiency of battery formation. To implement the EnPI a soft sensor is developed. Results show that the implementation of the proposed EnPI combined with other measures, resulted in a reduction of 3 to 5% of the electricity consumption of battery formation.

Keywords: *Battery formation, energy efficiency, battery production*
