

XIX INTERNATIONAL CHEMISTRY SEMINAR

# Palm Oil and Sustainable Chemistry

Yogyakarta, 20 May 2009



## BOOK OF PROGRAM AND ABSTRACTS

Jointly held by:

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**LEAD ACID BATTERY MODELING  
FOR ELECTRIC VEHICLE**

**Bambang Sri Kaloko<sup>1,2\*</sup>**

*<sup>1</sup>Doctorate Student of ITS <sup>2</sup>University of Jember  
Jl. Slamet Riyadi 62 Jember*

\*Tel : +62331-7824522, e-mail: [b\\_srikaloko@yahoo.com](mailto:b_srikaloko@yahoo.com)

**ABSTRACT**

Electrical energy plays an important role in our daily life. It can universally be applied and easily be converted into light, heat or mechanical energy. A general problem, however, is that electrical energy can hardly be stored. Capacitors allow its direct storage, but the quantities are small, compared to the demand of most applications. In general, the storage of electrical energy requires its conversion into another form of energy. Electrical energy is typically obtained through conversion of chemical energy stored in devices such as batteries. In batteries the energy of chemical compounds acts as storage medium, and during discharge, a chemical process occurs that generates energy which can be drawn from the battery in form of an electric current at a certain voltage. A computer simulation is developed to examine overall battery design with the MATLAB/Simulink. Battery modeling with this program have error level about 3,63%.

**Keywords:** Electrochemistry, lead acid battery, Simulink/Matlab