This is a title

First A. Author1, *Student Membership*, Second B. Author2, *Membership*,
and Third C. Author3, *Membership*

***Abstract*—Non-Intrusive Load Monitoring(NILM) is a task of estimating the contribution of single appliance to the overall power consumption by using a set of electrical parameters measured by a single meter. NILM provides a long term consumption records of single appliance to the investigators, allowing investigators make a comprehensive understanding of the specific load. Recently, deep neural networks have make remarkable progress in classification fields such as image classification and speech recognition. In this paper, we propose a improved denoising auto encoder network which applys Long Short-Term Memory units in both encoder and decoder layers and it outperforms than original denoising auto encoder and**

***Index Terms*—Non-Intrusive Load Monitoring (NILM) Deep Neural Network (DNN) Long Short-Term Memory(LSTM) Network denoising auto encoder (dAE)**