

## **Describing Problem for the PHMAP 2017 Data Challenge Competition and Suggestions for Future Study**

Hyunseok Oh<sup>1</sup>, Yun Ho Seo<sup>2</sup>, Min-Hwan Mo<sup>3</sup> and Joo-Hyung Kim<sup>4</sup>

<sup>1</sup>*School of Mechanical Engineering, Gwangju Institute of Science and Technology, Gwangju, 61005, Korea  
hsoh@gist.ac.kr*

<sup>2</sup>*Department of System Dynamics, Korea Institute of Machinery and Materials, Daejeon, 305-343, Korea  
yhseo@kimm.re.kr*

<sup>3</sup>*Technology Research and Development Institute, KEPCO Plant Service and Engineering Co., LTD, Naju, 58217, Korea  
saintmo@kps.co.kr*

<sup>4</sup>*Department of Mechanical Engineering, Inha University, Incheon, 402-751, Korea  
joohyung.kim@inha.ac.kr*

### **ABSTRACT**

Pulverizers in a power plant are used to grind coal in the form of fine powder for combustion. To secure reliable operation, redundant pulverizers are installed in the power plant. If the current health condition and remaining useful life of a gearbox system in each pulverizer are estimated correctly, the pulverizers can be operated and maintained in a cost-effective manner. To this end, a Data Challenge Committee in the PHMAP 2017 conference is organized to run an open competition. This paper presents the original problem and observed facts as well as the list of winners of the Data Challenge Competition. We anticipate that this paper can be used as a reference in the development of a prognostic method that can predict the health conditions of the pulverizers accurately.