

**Preliminary study of cardiopulmonary fitness measurement  
in the daily life**

E. J. Hyun<sup>1</sup>, C. Yoon<sup>1</sup>, J. W. Ahn<sup>1</sup>, H. C. Kim<sup>2</sup>, H. J. Yoon<sup>2\*</sup>

1. Interdisciplinary Program, Bioengineering Major, Graduate School, Seoul National University
2. Department of Biomedical Engineering, College of Medicine and Institute of Medical & Biological Engineering, Medical Research Center, Seoul National University

E-mail : silverhj@melab.snu.ac.kr

Cardiopulmonary fitness (CPF) is a measure of the function and ability of the cardiopulmonary system. As a recent research has revealed the causality between the CPF and death rate, the importance of the CPF has been spotlighted. However, current methods of measuring the CPF need special equipment, attendance of a health care expert and burden of the patients with a physical load. In this study, we suggest a simple method to estimate CPF in the daily life with the accelerometer and the ECG (Electrocardiography). It is expected that the proposed system will benefit many patients having difficulties measuring the CPF and also will contribute to expand the application of the CPF in medical study area.

**References**

- [1] K. J. B. K. H. W. Blair Sn, III and et al., JAMA, **276**, 205-210(1996)
- [2] C. Bouchard and T. Rankinen, Medicine and science in sports and exercise, **33**, 446-451(2001)
- [3] K. Y. Chen and M. Sun, Journal of applied Physiology, **83**, 2112-2122(1997)